2018

Registration document

including the
Annual Financial Report

vallourec
SMART TUBULAR SOLUTIONS

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REGISTRATION DOCUMENT

including the annual financial report

2018

AUTORITÉ DES MARCHÉS FINANCIERS
AMF

The original version of this Registration Document in French was filed with the French securities regulator (*Autorité des Marchés Financiers*) on 29 March 2019 in accordance with Article 212-13 of its General Regulations. It may be used in connection with a financial transaction if supplemented by an Information Notice authorized by the French securities regulator. This document was prepared by the issuer and is the responsibility of those who signed it.

Copies of this Registration Document are available free of charge from Vallourec, at 27, avenue du Général-Leclerc, 92100, Boulogne-Billancourt, Cedex – France, Vallourec's website (http://www.vallourec.com) and on the website of the French securities regulator (*Autorité des Marchés Financiers*) (http://www.amf-france.org).

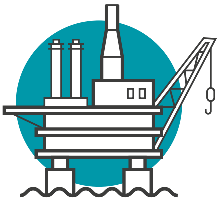
This Registration Document includes all the elements of the annual financial report mentioned in Section I of Article L. 451-1-2 of the French Code monétaire et financier and Article 222-3 of the General Regulations of the French securities regulator (*Autorité des Marchés Financiers*). A concordance table showing the documents referred to in Article 222-3 of the General Regulations of the French securities regulator and the corresponding sections of this Registration Document is included on page 330.

VALLOUREC: A WORLD LEADER SERVING THREE MARKETS

Vallourec provides tubular solutions that are the benchmark for the energy sectors and other applications that present the most demanding challenges. A world leader in its markets, Vallourec makes it possible for its customers to achieve even the most complex projects.

2018 REVENUE: €3.9 BILLION

OIL & GAS, PETROCHEMICALS



72% of revenue

Premium tubes, connections and services for exploration and operation of oil and gas fields, including the most complex ones

- **Exploration and production**
  - Casing, tubing and VAM® premium connections
  - Risers
  - Services
  - Accessories
- **The most reliable solutions for extreme conditions:**
  deep wells, corrosive environments, deviated and horizontal wells, HP/HT (high pressure/high temperature, etc.)
- **Transport for oil and gas**
  - Offshore and onshore line pipes
  - Welding solutions and services for offshore and onshore projects
- **Tubes for umbilicals**

  Premium welded stainless steel tubes with high-performance technical characteristics
- **Hydrocarbon processing**

  Pipes and fittings for the industrial fluids and hydrocarbon processing industry
- **Renewables: OCTG tubes for geothermal**

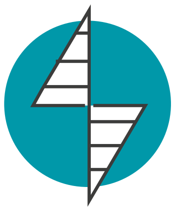
INDUSTRY

21% of revenue

Lightweight and resistant tubes for a wide range of applications

- **Hollow sections, tubes and hollow bars for industrial markets:**
  - Mechanical: cranes, agricultural machinery, OCTG mechanical parts, etc.
  - Automotive: all types of vehicles, both light and heavy
  - Construction: bridges, stadiums, offshore jack-up platforms, airport terminals, exhibition halls, etc.
- **Development of steel grades suited to a wide range of applications for the industry markets**
- **Renewables: innovation projects for solar and wind power**

POWER GENERATION



7% of revenue

A wide range of tubes needed to build conventional and nuclear power plants

- **A market leader in conventional thermal and nuclear power plants with a complete range of tubes:**
  - Seamless carbon and alloy steel tubes
  - Seamless nickel-alloy tubes
  - Services
- **Strong commitment to reducing CO_2 emissions in next-generation conventional power plants (supercritical and ultra-supercritical)**
- **Renewables: tubes for biomass power plants**

A TRANSFORMED GROUP READY TO BENEFIT FROM RECOVERY

The ambitious Transformation Plan we have deployed since early 2016 allows us to enhance our competitiveness and prepare to fully benefit from the recovery of the Oil & Gas market. Vallourec is benefiting from an industrial footprint spread over four regions. This new structure is strengthening the Group's local presence and proximity to its customers, and is allowing us to optimize global use of resources and to boost our development.

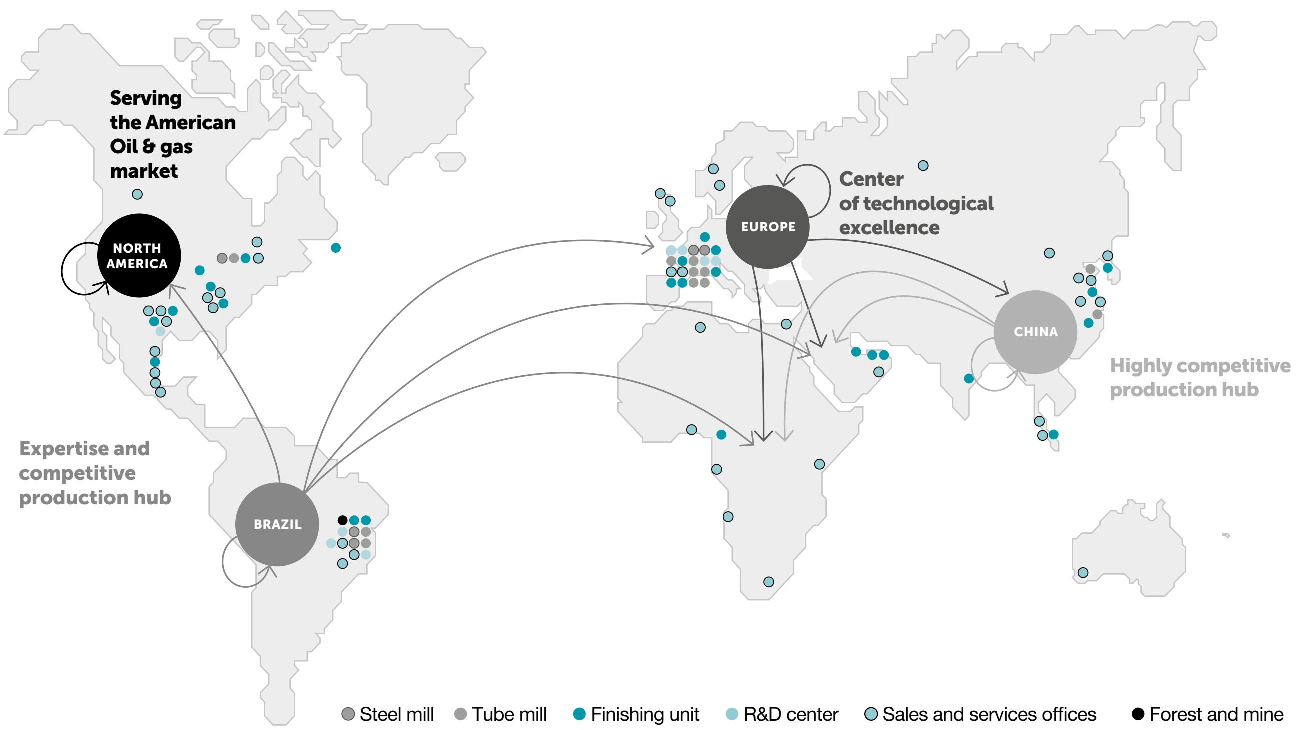
Present in more than **20 countries**

More than **50** production units

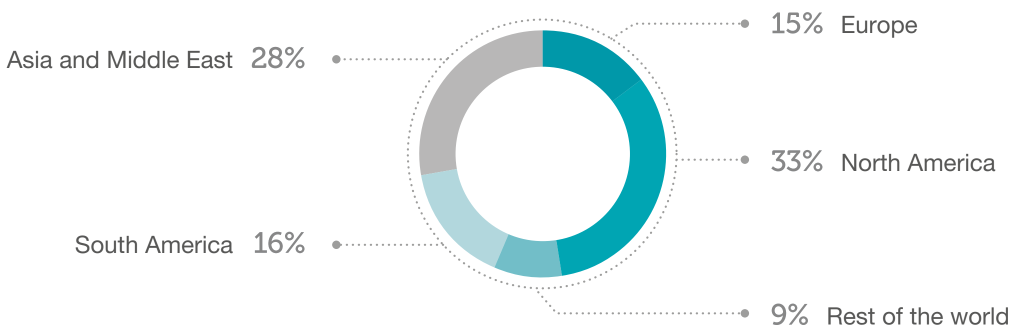
+19,000 employees

6 research and test centers

A transformed industrial footprint with the establishment of new competitive production routes



REVENUE BY REGION

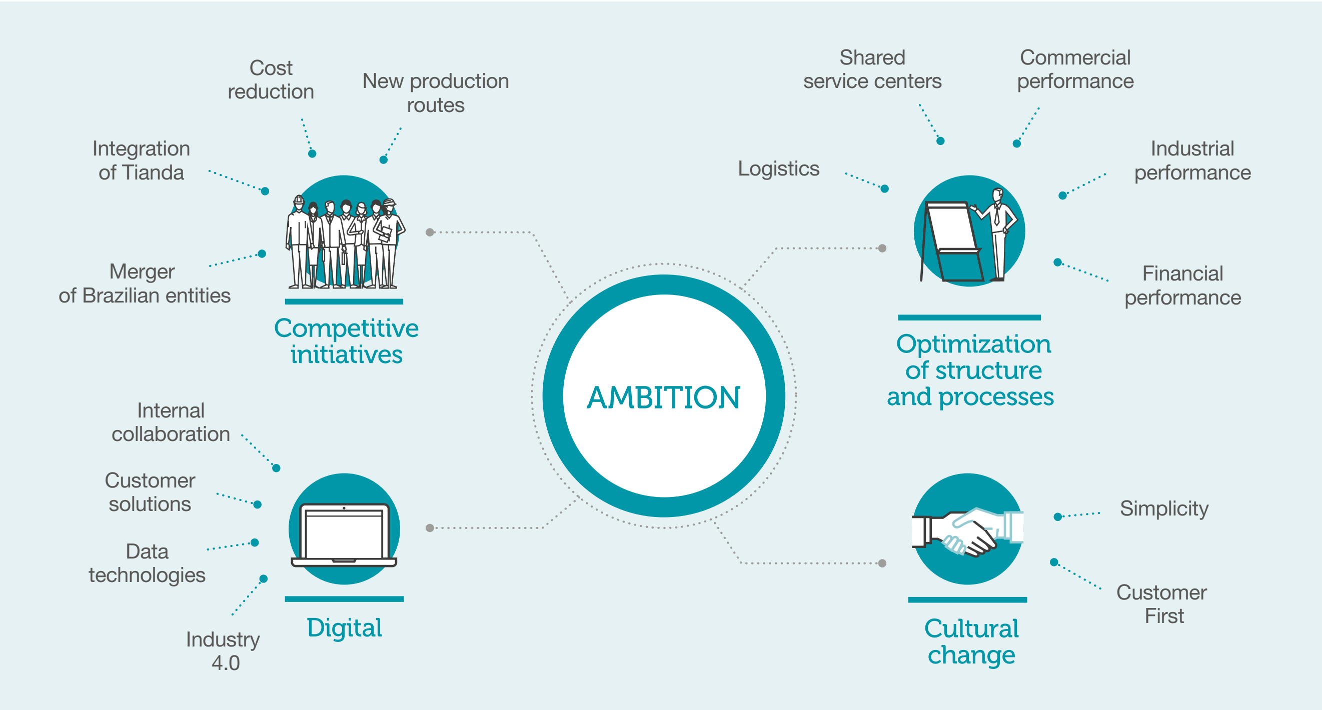


ONE AMBITION: TO BE THE INNOVATIVE AND AGILE PARTNER OF CHOICE FOR SMART AND SUSTAINABLE TUBULAR SOLUTIONS

A partner of choice: a global player with leading regional positions, the Group strives to satisfy each customer in a cost-effective manner thanks to a differentiated offering of products and services with high added value and that are environmentally friendly.

Agile: to respond ever more quickly to its customers' evolving needs, Vallourec has reviewed its innovation policy, to be more responsive and rapidly propose new solutions that meet market expectations. Furthermore, its regional presence allows it to offer its customers delivery periods and services that address their concerns.

To be innovative: innovation is at the heart of the Group's DNA, which features the development of the most advanced products and connections. In an effort to continue to best respond to the expectations of its customers and markets, Vallourec has expanded its innovation strategy to developing new products, services, and business models. Developing digital in its commercial offerings is key, marked by the 2018 launch of the smart services offering Vallourec.smart.



vallourec smart

The launch of a digital and global services approach illustrates Vallourec's innovation mindset, and aims to support its customers across their entire value chain. By enriching its digital offering, Vallourec enables its customers to optimize their construction costs and improve their productivity.

A RESPONSIBLE INDUSTRIAL PLAYER

We have integrated the highest standards of responsibility and excellence into our strategy, in terms of safety, social and environmental policies.

OUR ACHIEVEMENTS

The new industrial landscape has led the Group to continue deploying its best CSR practices to continue to serve as an example in its business sector.

SOCIAL & SOCIETAL

22% female executives

73% of employees satisfied*

€2.45 M allocated to actions to benefit local communities

HEALTH & SAFETY

-41%

The frequency rate of accidents with or without lost time (TRIR) dropped 41% between 2014 and 2018.

-79% of hazardous substances (CMR**) eradicated

ENERGY

38% of energy consumed from a renewable source

40% of production from ISO 50001 sites

ENVIRONMENT

80% of the resources consumed from a renewable source

CIRCULAR ECONOMY

95.5% recovered waste

57% of steel used from recycled scrap

PURCHASES

+1,000 suppliers engaged in the process of evaluating their CSR performance

+85% of transportation to the customer by sea, rail or river

* *2018 Social Barometer.*

** *Carcinogenic Mutagenic Reprotoxic matters.*

FINANCIAL AND ACTIVITY INDICATORS

	Unit	2017	2018	Change 2018/2017
Sales volume	*kt*	2,256	2,364	4.8%
Revenue	*€ million*	3,750	3,921	4.6%
Industrial margin	*€ million*	453	579	27.8%
Industrial margin in % of revenue		*12.1%*	*14.8%*	*+2.7 pts*
EBITDA	*€ million*	2	150	+€148 m
EBITDA margin in % of revenue		*0.1*	*3.8*	*+3.7 pts*
Operating income (Loss)	*€ million*	(483)	(277)	+€206 m
Net income, Group share	*€ million*	(537)	(502)	+€35 m
Net earnings per share	€	(1.2)	(1.1)	+€0.1
Industrial capital expenditure	*€ million*	(152)	(129)	+€23 m
Free cash flow*	*€ million*	(423)	(494)	-€71 m
Net debt	*€ million*	1,542	2,058	+€516 m
Equity	*€ million*	2,885	2,264	-€621 m
Banking covenant**		47%	72%	+25 pts

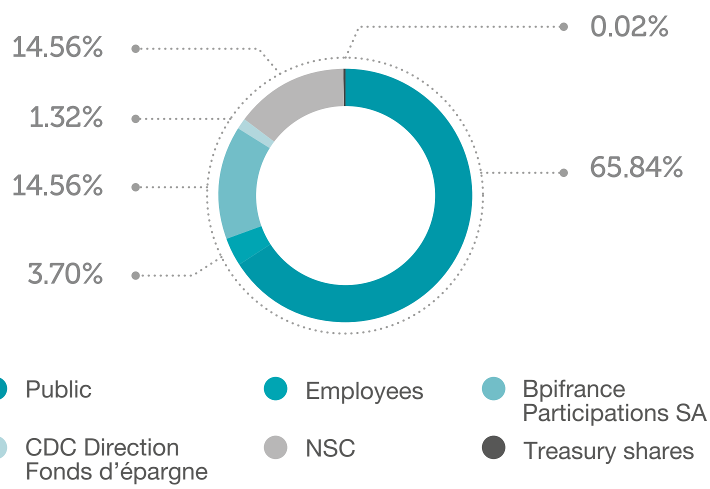
* *Free cash flow (FCF), is a non-GAAP measure and is defined as cash flow from operating activities minus gross capital expenditure and +/- change in operating working capital requirement.*

** *Banking covenant: As defined in the banking agreements, the "banking covenant" is the ratio of the Group's consolidated net debt (including the shareholder loan in Brazil) to the Group's equity, restated for reserves of changes in fair value of financial instruments and foreign currency translation reserve. This indebtedness ratio is tested once a year on 31 December, and must be below a limit of 100% at that date.*

A STABLE SHAREHOLDING STRUCTURE

Vallourec benefits from the support of its two reference shareholders, Bpifrance Participations and Nippon Steel Corporation (NSC, formerly NSSMC), who each hold nearly 15% of the capital.

As at 31 December 2018, employees represented 3.70% of the capital. The free float percentage was 65.8%.



Persons responsible for the Registration Document and financial audit

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1.1 Person responsible for the Registration Document

Mr. Philippe Crouzet

Chairman of the Management Board of Vallourec (hereinafter “Vallourec” or “the Company”)

1.2 Statement by the person responsible for the Registration Document

I certify that, having taken all reasonable care to ensure that such is the case, the information contained in this Registration Document is, to the best of my knowledge, in accordance with the facts and contains no omission likely to affect its import.

I certify that, to the best of my knowledge, the financial statements have been prepared in accordance with applicable accounting standards and give a true and fair view of the assets and liabilities, financial position and results of the Company and all consolidated companies, and that the management report, the various headings of which are provided in the concordance table on page 331 of this Registration Document (Section 8.2.3), presents a true and fair view of the business trends, results and financial position of the Company and all consolidated companies, as well as a description of the main risks and uncertainties to which they are exposed.

I have obtained a completion letter from the Statutory Auditors in which they indicate that they have verified the information relating to the financial position and the financial statements included in this document, and have read the document in its entirety.

Boulogne-Billancourt, 29 March 2019

Chairman of the Management Board

Philippe Crouzet

1.3 Persons responsible for the financial audit

1.3.1 Statutory Auditors

KPMG SA

Represented by:

Ms. Alexandra Saastamoinen

Tour Eqho - 2, avenue Gambetta
92066 Paris-La Défense Cedex – France

Date of first appointment: 1 June 2006
Date of renewal: 25 May 2018

The Ordinary and Extraordinary Shareholders' Meeting of 25 May 2018 reappointed KPMG SA as Statutory Auditor for a term of six (6) years expiring at the close of the Ordinary Shareholders' Meeting called to approve the financial statements for the year ending 31 December 2023.

Deloitte & Associés

Represented by:

Ms. Véronique Laurent

Tour Majunga - 6, place de la Pyramide
92908 Paris-La Défense Cedex - France

Date of first appointment: 1 June 2006
Date of renewal: 25 May 2018

The Ordinary and Extraordinary Shareholders' Meeting of 25 May 2018 reappointed Deloitte & Associés as Statutory Auditor for a term of six (6) years expiring at the close of the Ordinary Shareholders' Meeting called to approve the financial statements for the year ending 31 December 2023.

1.4 Person responsible for the Group's legal affairs

Mr. Rémi Dujon

Group General Counsel

Vallourec

27, avenue du Général-Leclerc
92660 Boulogne-Billancourt Cedex – France

Tel.: +33 (0)1 49 09 37 22
Fax: +33 (0)1 49 09 36 16

E-mail: remi.dujon@vallourec.com

1.5 Person responsible for the communication of financial information

Mr. Jean-Marc Agabriel

Director of Investor Relations

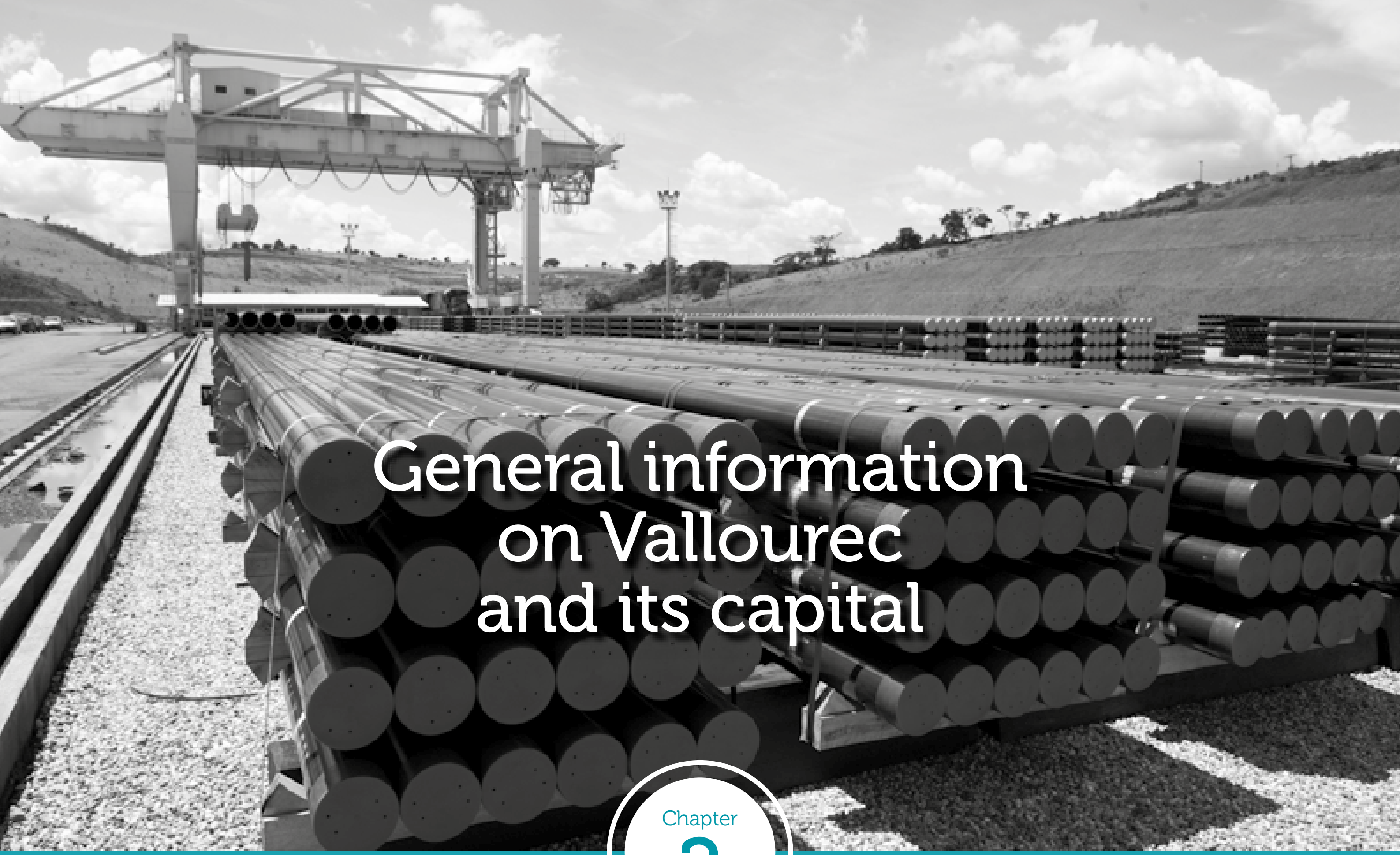
Vallourec

27, avenue du Général-Leclerc
92660 Boulogne-Billancourt Cedex – France

Tel.: +33 (0)1 49 09 39 77

E-mail: jean-marc.agabriel@vallourec.com

Vallourec website: www.vallourec.com



General information on Vallourec and its capital

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2.1 General information on Vallourec

2.1.1 Company name and registered office

Vallourec
27, avenue du Général-Leclerc
92100 Boulogne-Billancourt – France
Tel.: +33 (0)1 49 09 35 00

2.1.2 Legal form – Legislation – Trade and Companies Register

Vallourec is a French corporation *(société anonyme)* that opted on 14 June 1994 for a governance structure comprising a Management Board and a Supervisory Board. The Company is registered in the Nanterre (Hauts-de-Seine) Trade and Companies Register under no. 552 142 200 and recorded under APE Code (Principal Activity Code) 7010Z.

2.1.3 Date of incorporation and term

Vallourec was formed in 1899.

It will be wound up on 17 June 2067, unless its life is extended or it is wound up earlier.

2.1.4 Corporate purpose (Article 3 of the bylaws)

Vallourec's purpose, in any country, acting on its own behalf or for a third party, or directly or indirectly with or through third parties, includes:

- all industrial and commercial transactions relating to all means for the preparation and manufacture, by all processes known or that might be subsequently discovered, of metals and any materials that may replace them in all their applications; and
- in general, all commercial, industrial and financial transactions, and transactions in movable and fixed property, directly or indirectly associated with the above purpose.

2.1.5 Consultation of legal documents

The Company bylaws, minutes of Shareholders' Meetings and other Company documents may be consulted at the registered office.

2.1.6 Fiscal year

The fiscal year is 12 months long. It begins on 1 January and ends on 31 December.

2.1.7 Distribution of profits (Article 15 of the bylaws)

Distributable profit, as defined by law, is allocated by the Shareholders' Meeting.

Unless otherwise required by law, the Shareholders' Meeting decides how net profit is allocated.

The Shareholders' Meeting may also decide to grant each shareholder, for all or part of the dividend to be distributed, the choice of receiving payment of the dividend in cash or in shares [(1)], in accordance with the laws and regulations in force.

2.1.8 Shareholders' Meetings (Article 12 of the bylaws)

Shareholders' Meetings are convened in accordance with the conditions provided for by law.

A Shareholders' Meeting is open to all shareholders, regardless of the number of shares held.

Each shareholder attending the Shareholders' Meeting has as many votes as shares owned or represented, unless otherwise provided for by law. However, fully paid-up shares duly registered in the name of the same shareholder for four (4) consecutive years carry twice as many voting rights as other shares (Article 12, paragraph 4 of the bylaws).

The Shareholders' Meeting of 19 January 1988 resolved to establish double the voting rights for shares that have been duly registered in the name of the same shareholder for four (4) years. The free registered shares awarded to a shareholder in respect of existing shares for which the shareholder has a double voting right also have a double voting right. The double voting right ceases for any share that has been converted to bearer shares or transferred, except for any transferred to another registered shareholder by succession or family bequest. The double voting right may be removed by a decision of the Extraordinary Shareholders' Meeting after ratification by a Special Meeting of the shareholder beneficiaries.

2.1.9 Disclosure of thresholds crossed and identification of shareholders (Article 8 of the bylaws)

Article 8 of the bylaws establishes an additional disclosure obligation in the case of thresholds crossed other than those provided for in the current legal provisions. Consequently:

"In addition to the disclosure of thresholds crossed as expressly provided for in Article L.233-7-I and II of the French Commercial Code (Code de commerce), any individual or legal entity who, directly or indirectly through companies he, she or it controls within the meaning of Article L.233-3 of the French Commercial Code, alone or in concert, acquires a number of bearer shares in the Company equal to or greater than three percent (3%), four percent (4%), six percent (6%), seven percent (7%), eight percent (8%), nine percent (9%) or twelve and a half percent (12.5%) of the total number of shares comprising the share capital shall, within five (5) trading days after crossing said threshold, disclose to the Company the total number of shares thus held, via registered letter with request for acknowledgment of receipt sent to the Company's registered office.

The information mentioned in the previous paragraph shall also be disclosed within the same time frame and under the same conditions when the shareholding falls below the thresholds referred to therein."

The penalties provided for by law for failure to comply with the legal obligation to disclose thresholds crossed under the French Commercial Code shall also apply in case of non-compliance with the obligation set out in the bylaws to disclose the above threshold crossings at the request of one or more shareholders holding at least 5% of the Company's shares, as recorded in the minutes of the Shareholders' Meeting.

In addition, under current regulations, the Company is entitled to request the identification of holders of securities conferring immediate or future voting rights at its Shareholders' Meetings, as well as quantities held.

(1) This power was introduced by the Shareholders' Meeting of 14 June 1994.

2.2 General information on share capital

2.2.1 Conditions in the bylaws for changes in share capital or rights in the Company

An Extraordinary Shareholders' Meeting may, in accordance with the conditions provided for by law, increase or reduce the share capital or delegate to the Management Board the necessary powers to do so.

However, under the Company's internal structure (Article 9, paragraph 3 of the bylaws), the Management Board may not carry out the following transactions without the prior approval of the Supervisory Board:

- any capital increase in cash or by capitalization of reserves authorized by a Shareholders' Meeting;
- any other issue of marketable securities that could later give access to share capital, authorized by a Shareholders' Meeting.

The shares are freely negotiable and transferable in accordance with applicable laws and regulations.

2.2.2 Share capital

As at 1 January 2018, the start of the 2018 fiscal year, subscribed, fully paid-up share capital amounted to €915,975,520, divided into 457,987,760 shares with a par value of €2.00 each.

No capital increases were recorded in 2018; as at 31 December 2018, the subscribed, fully paid-up share capital had remained unchanged and thus amounted to €915,975,520, divided into 457,987,760 shares with a par value of €2.00 each.

2.2.3 Authorized capital not issued

2.2.3.1 Financial authorizations to issue shares and marketable securities providing access to the Company's capital valid as at 31 December 2018

Authorizations to issue shares and marketable securities providing access to the Company's capital valid as at 31 December 2018 were as follows:

	Maximum caps on capital increases *(in € or a percentage of the share capital)*	**Maximum nominal amounts of debt securities** *(in €)*	**Date of the Shareholders' Meeting that authorized the transaction**	**Term of authorization**	**Expiration date**
CAPITAL INCREASES WITH PREFERENTIAL SUBSCRIPTION RIGHTS (PSR)					
Capital increases with PSR (19th resolution)	360.990 million	1.5 billion	25 May 2018	14 months	25 July 2019
Increase in the amount of the initial issue with PSR (17th resolution)	15% of the initial issue (a) (b)	15% of the initial issue (d) (e)	12 May 2017	26 months	12 July 2019
Capital increases through the capitalization of reserves, profits or additional paid-in capital (21st resolution)	270.743 million (a)	N/A	12 May 2017	26 months	12 July 2019
CAPITAL INCREASES WITHOUT PREFERENTIAL SUBSCRIPTION RIGHTS					
Capital increases without PSR through a public offering or offerings (20th resolution)	90.247 million (a)	1.5 billion	25 May 2018	14 months	25 July 2019
Capital increases without PSR through one or more private placements (21st resolution)	90.247 million (a) (c)	1.5 billion	25 May 2018	14 months	25 July 2019
Capital increases without PSR, carried out under the fourteenth and/or fifteenth resolutions adopted by the Shareholders' Meeting of 12 May 2017, at a price to be freely set by the Shareholders' Meeting (16th resolution)	10% of the share capital per year within the limit of 90.247 million over 26 months (a) (b) (c)	1.5 billion	12 May 2017	26 months	12 July 2019
Increase in the amount of the initial issue without PSR (17th resolution)	15% of the initial issue (a) (b) (c)	15% of the initial issue (d)	12 May 2017	26 months	12 July 2019
Capital increases without PSR in consideration for contributions in kind, except in the case of a public exchange offer initiated by the Company (18th resolution)	10% of the share capital (a) (c)	1.5 billion	12 May 2017	26 months	12 July 2019
Capital increases without PSR in consideration for securities contributed in a public exchange offer initiated by the Company (19th resolution)	90.247 million (a) (c)	1.5 billion	12 May 2017	26 months	12 July 2019
Capital increases without PSR, carried out as a result of the issue by the Company's subsidiaries of marketable securities providing access to the Company's share capital (20th resolution)	90.247 million (a) (c)	N/A	12 May 2017	26 months	12 July 2019
EMPLOYEE SHARE OWNERSHIP PLAN					
Capital increase reserved for members of the Company savings plan as part of an employee share ownership plan (22nd resolution)	2% of the share capital (a) (d)	N/A	25 May 2018	26 months	25 July 2020
Capital increase reserved for employees and those with similar rights of Vallourec Group companies outside France as part of an employee share ownership plan (23rd resolution)	2% of the share capital (a) (d)	N/A	25 May 2018	18 months	25 November 2019

	Maximum caps on capital increases *(in € or a percentage of the share capital)*	Maximum nominal amounts of debt securities *(in €)*	Date of the Shareholders' Meeting that authorized the transaction	Term of authorization	Expiration date
Capital increase reserved for lending institutions and all entities whose purpose is to hold, acquire or dispose of shares as part of an employee share ownership plan (24th resolution)	2% of the share capital [(a) (d)]	N/A	25 May 2018	18 months	25 November 2019
Allocation of shares free of charge as part of an employee share ownership plan to replace the employer matching contributions given to French employees (25th resolution)	0.3% of the share capital [(a)]	N/A	25 May 2018	18 months	25 November 2019
SHARE SUBSCRIPTION OR SHARE PURCHASE OPTIONS AND PERFORMANCE SHARES					
Share subscription or share purchase options granted to employees and corporate officers of the Vallourec Group (26th resolution)	3% of the share capital [(a)]	N/A	12 May 2017	38 months	12 July 2020
Performance shares allocated to employees and corporate officers of the Vallourec Group (27th resolution)	3% of the share capital [(a) (e)]	N/A	12 May 2017	38 months	12 July 2020

(a) This amount or this percentage counts towards the total capital increase cap, maintaining the preferential subscription right of €360.990 million.

(b) This percentage is limited by the cap on the authorization pursuant to which the initial issue was made.

(c) This amount or this percentage counts towards the total capital increase cap without preferential subscription right of €90.247 million.

(d) The aggregate amount of capital increases carried out as part of an employee share ownership offer may not exceed 2% of the share capital.

(e) This percentage counts towards the 3% share capital cap at the date of the decision to allot the share subscription or share purchase options.

2.2.3.2 Use of financial authorizations to issue shares and marketable securities providing access to the Company's capital as at 31 December 2018

No capital increase has been planned for 2018.

PERFORMANCE SHARES (twentieth resolution of the Shareholders' Meeting of 12 May 2017)

Under the twentieth resolution relating to performance shares, which was adopted by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017, the Management Board decided on 15 June 2018, in accordance with the Supervisory Board, to allocate, subject to attendance and performance conditions, a target number of 842,630 performance shares [(1)], or 0.18% of the share capital as at 31 December 2018, to benefit 529 managers and two members of the Management Board.

The terms and conditions of these plans are set out in Section 7.3.1.2, "Performance share and free share allocation plans" of this Registration Document.

SHARE SUBSCRIPTION OR SHARE PURCHASE OPTIONS (nineteenth resolution of the Shareholders' Meeting of 12 May 2017)

Under the nineteenth resolution relating to share subscription or share purchase options, which was adopted by the Shareholders' Meeting of 12 May 2017, on 15 June 2018, the Management Board, in agreement with the Supervisory Board, set up a share subscription option plan, subject to continuous service and performance conditions, which provides for the allocation of a target number of 354,220 options [(2)], or 0.08% of the share capital as at 31 December 2018, to eight members of the Executive Committee and two Management Board members.

The terms of this plan are set out in Section 7.3.1.1, "Share subscription and/or share purchase options" of this Registration Document.

2.2.3.3 Potential dilution as at 31 December 2018

On 27 September 2017, Vallourec issued 36,284,470 Bonds Convertible into New Shares and/or Exchangeable for Existing Shares of the Company with a unit par value of €6.89, or a total par value of €249,999,998.30, with a maturity date of 4 October 2022 (the "October 2022 OCEANEs"). The conversion/exchange ratio of the October 2022 OCEANEs is one share per October 2022 OCEANE, subject to subsequent adjustments. Should they exercise their share allocation right, holders of October 2022 OCEANEs will receive new and/or existing Company shares at the Company's discretion. The potential dilution amounts to 7.92% as at 31 December 2018.

Performance share and free share allocation plans (see Section 7.3.1.2 below) are covered by existing shares, so they have no dilutive impact.

Only the award of share subscription options (see Section 7.3.1.1 below) could, if the options came to be exercised, entail a dilution of shareholders. Based on the number of options currently outstanding, net of those canceled or that have lapsed, potential dilution to shareholders as at 31 December 2017 was 0.88%.

(1) I.e. 1,562,840 performance shares based on a maximum performance coefficient of 2, applied to 100% of the allocation to the members of the Executive Committee and Management Board, and to 80% of the allocation to managers not on the Executive Committee.

(2) Based on a target coefficient of 1, or 708,440 options based on the maximum coefficient of 2.

2.2.4 Share buyback

2.2.4.1 Information on transactions under the share buyback program during the 2018 fiscal year

SHARE BUYBACK

As at 1 January 2018, Vallourec held 172,607 Vallourec shares with a nominal value of €2.00, or 0.038% of the share capital at that date, all assigned to cover free share or performance share allocation plans.

From 1 January to 31 December 2018, Vallourec held no share buyback and transferred 81,568 shares under its free share and performance share allocation plans.

Total gross cash flows relating to purchases and disposals/transfers of shares (excluding liquidity contract) from 1 January to 31 December 2018 were as follows:

	Purchases	Transfers/sales
Number of shares	0	81,568
Average unit price (in €)	0	22,0626
AGGREGATE AMOUNT (IN €)	**0**	**1,799,602**

TREASURY SHARES AS AT 31 DECEMBER 2018

As at 31 December 2018, Vallourec held 91,039 Vallourec shares, or 0.019% of the share capital at that date, all assigned to cover free share or performance share allocation plans. The carrying amount of the portfolio as at 31 December 2018 was €2,034,498.71, including a nominal value of €182,078 and a market value on the same date of €147,983.89.

TREASURY SHARES

None.

OPEN DERIVATIVE POSITIONS AS AT 31 DECEMBER 2018

None.

2.2.4.2 Description of the 2018-2019 share buyback program, submitted to the Ordinary and Extraordinary Shareholders' Meeting of 23 May 2019 (15th resolution)

This description of the program's purpose, under Articles 241-1 *et seq.* of the General Regulations of the French securities regulator *(Autorité des Marchés Financiers)*, is to explain the objectives and the terms and conditions of Vallourec's share buyback program, which will be submitted to the Ordinary and Extraordinary Shareholders' Meeting on 23 May 2019.

ALLOCATION OF VALLOUREC SHARES HELD BY THE COMPANY AS AT 28 FEBRUARY 2019

As at 28 February 2019, Vallourec held 706,039 Vallourec shares, or 0.15% of the share capital at that date, all allocated to cover free share or performance share allocation plans.

OBJECTIVES OF THE SHARE BUYBACK PROGRAM SUBMITTED TO THE ORDINARY AND EXTRAORDINARY SHAREHOLDERS' MEETING OF 23 MAY 2019

In accordance with the provisions of European Regulation No. 596/2014 of 16 April 2014 and the market practices accepted by the French securities regulator, the objectives of the share buyback program submitted for the approval of the Ordinary and Extraordinary Shareholders' Meeting of 23 May 2019 are as follows:

1. to implement any Company share purchase options plan or any similar plan, in accordance with the provisions of Articles L.225-177 *et seq.* of the French Commercial Code;
2. to allocate or transfer shares to employees for their investment in the Company's development and/or to implement any Company or Group savings plan (or similar plan) as provided for by law, in particular Articles L.3332-1 *et seq.* of the French Labor Code *(Code du travail)*;
3. to allocate shares free of charge or to allocate performance shares under the provisions of Articles L.225-197-1 *et seq.* of the French Commercial Code;
4. allocation of shares to employees and/or corporate officers of the Group, particularly in the context of international employee share ownership plans or variable compensation;
5. for market making in the secondary market or to increase the liquidity of Vallourec's shares through an investment services provider, under the terms of a liquidity contract that complies with the Code of Conduct *(Charte de déontologie)* issued by the French Association of Financial Markets *(Association Française des Marchés Financiers)*, approved by the French securities regulator and in accordance with the market practices accepted by it;
6. to hold and subsequently deliver shares (in payment, exchange or otherwise) in connection with any later transactions involving acquisitions, and, in particular, mergers, split-offs or contributions;
7. to deliver shares upon the exercise of rights attached to marketable securities giving access to share capital by means of redemption, conversion, exchange, exercise of a warrant or any other means; or
8. to cancel some or all of the shares so repurchased, provided that the Management Board has a valid authorization from the Extraordinary Shareholders' Meeting allowing it to reduce share capital by canceling shares acquired as part of a share buyback program.

TERMS OF THE SHARE BUYBACK PROGRAM SUBMITTED TO THE SHAREHOLDERS' MEETING ON 23 MAY 2019

The table below shows the maximum percentage of capital, the maximum number, and the characteristics of the shares that the Company could acquire under its share buyback program as submitted to the Ordinary and Extraordinary Shareholders' Meeting of 23 May 2019, as well as the maximum unit purchase price:

Share characteristics	Maximum percentage of capital [(a)]	Maximum number of shares [(b)]	Maximum unit purchase price *(per share)*
Ordinary shares	10%	45,798,776	€15

(a) *It is noted that this percentage applies to capital that will be adjusted, where applicable, to take account of any transactions affecting share capital that may occur after the Shareholders' Meeting of 23 May 2019, and that, in all circumstances, the number of shares that the Company holds at any given time may not exceed 10% of the shares comprising the Company's capital on the date in question.*

(b) *This number corresponds to the theoretical number of ordinary shares that the Company could acquire, calculated based on the share capital as at 28 February 2019, i.e. €915,975,520, divided into 457,987,760 shares. Based on the number of ordinary shares owned by Vallourec at that date (i.e. 706,039 shares), Vallourec could acquire 45,092,737 of its own shares.*

TERM OF THE SHARE BUYBACK PROGRAM SUBMITTED TO THE SHAREHOLDERS' MEETING OF 23 MAY 2019

The authorization given to the Management Board to implement the share buyback program will be granted for a term of 18 months from the date of the Shareholders' Meeting of 23 May 2019, i.e. until 23 November 2020, subject to the program's approval by the Ordinary Shareholders' Meeting.

2.2.5 Changes in share capital over the past five years

Transaction date	Exercise of subscription options	Number of shares subscribed in cash	Total number of shares after transaction	Nominal amount of capital increase *(in €)*	Paid-in capital *(in €)*	Total share capital after transaction *(in €)*
25/06/2014	–	518,416	128,678,016	1,036,832	17,465,435	257,356,032
16/12/2014	–	1,919,959	130,597,975	3,839,918	45,325,754	261,195,950
25/06/2015	–	3,090,460	133,688,435	6,180,920	53,774,004	267,376,870
15/12/2015	–	1,999,997	135,688,432	3,999,994	13,647,426	271,376,864
03/05/2016	–	217,101,488	352,789,920	434,202,976	45,591,312	705,579,840
03/05/2016	–	30,282,564	383,072,484	60,565,128	108,737,646	766,144,968
20/06/2016	–	61,565,565	444,638,049	123,131,130	221,067,653	889,276,098
14/12/2016	–	6,599,956	451,238,005	13,199,912	13,118,608	902,476,010
14/12/2017	–	6,749,755	457,987,760	13,499,510	13,486,494	915,975,520

No transactions impacting capital were performed in 2018.

2.2.6 Non-equity instruments

Marketable securities entitling the allocation of debt securities

As at 31 December 2018, the Management Board has not decided to issue any marketable securities entitling their bearers to be allocated debt securities.

Plan to issue negotiable short-term securities

On 12 October 2011, Vallourec established a commercial paper issue program to meet its short-term financing requirements. This program, updated on 11 September 2018, has the following main characteristics:

Maximum cap on the program	€1 billion
Duration	> 1 day < 365 days
Minimum unit amount	€150,000
Currency of issue	Euros (€), US dollars ($)
Paying agent	Crédit Industriel et Commercial
Underwriters	Aurel BGC BNP Paribas BRED Banque Populaire CM – CIC Crédit du Nord GFI Securities Limited HPC ING Bank NV Kepler Capital Markets Natixis Newedge Group Société Générale CIB TSAF OTC
Short-term rating (Standard & Poor's)	B

The financial prospectus for the commercial paper issue program and the outstanding amounts of the issues are available on the websites of the Company (www.vallourec.com) and the Banque de France (www.banque-france.fr).

Bond issues

Vallourec successfully issued:

- on 30 July 2012, a €55 million fixed-rate bond issue maturing on 2 August 2027 (the "August 2027 Bonds"). The August 2027 Bonds have a unit par value of €100,000 and bear interest at an annual fixed rate of 4.125%, payable in arrears on 2 August each year;
- on 3 August 2012, a €400 million fixed-rate bond issue maturing on 2 August 2019 (the "August 2019 Bonds"). The August 2019 Bonds have a unit par value of €100,000 and are admitted to trading on the Euronext Paris stock market. They bear interest at an annual fixed rate of 3.25%, payable in arrears on 2 August each year, and are rated B- by Standard & Poor's;
- on 30 September 2014, a €500 million fixed-rate bond issue maturing on 30 September 2024, (the "September 2024 Bonds"). The September 2024 bonds have a unit par value of €100,000 and are admitted to trading on the Euronext Paris stock market. They bear interest at an annual fixed rate of 2.25%, payable in arrears on 30 September each year, and are rated B- by Standard & Poor's;
- on 27 September 2017, a €250 million fixed-rate bond issue, consisting of Bonds Convertible into New Shares and/or Exchangeable for Existing Shares of the Company ("OCEANEs"), reaching maturity on 4 October 2022 (the "October 2022 OCEANEs"). The October 2022 OCEANEs have a unit par value of €6.89 and are admitted to trading on the free Euronext Paris stock market ("Euronext Access"). They bear interest at the annual fixed rate of 4.125%, payable semi-annually in arrears on 4 April and 4 October of each year;
- on 11 October 2017, a €400 million fixed-rate bond issue maturing on 15 October 2022, (the "October 2022 Bonds"). The October 2022 Bonds have a unit par value of €100,000 and are admitted to trading on the Euro MTF stock market of the Luxembourg Stock Exchange. They bear interest at an annual fixed rate of 6.625%, payable semi-annually in arrears on 15 April and 15 October of each year, and were rated "B-" by Standard & Poor's. On 23 October 2017, this bond issue was matched for €150 million under the same conditions;
- on 12 April 2018, a €400 million fixed-rate bond issue maturing on 15 October 2023, (the "October 2023 Bonds"). The October 2023 Bonds have a unit par value of €100,000 and are admitted to trading on the Euro MTF stock market of the Luxembourg Stock Exchange. They bear interest at an annual fixed rate of 6.375%, payable in arrears on 15 April and 15 October each year, and are rated B- by Standard & Poor's.

The nominal value and interest on the August 2027 Bonds, August 2019 Bonds, September 2024 Bonds, October 2022 Bonds, October 2022 OCEANEs, and the October 2023 Bonds (the "Bonds") represent direct, unconditional, unsubordinated liabilities, not backed by Vallourec assets, ranked pari passu, without preference among them, with the other present and future unsubordinated Vallourec bonds not backed by assets. Throughout the Bonds' maturity period, Vallourec has undertaken not to grant any security or guarantee (mortgage, lien, pledge, real surety, etc.) on its assets, income or rights, present or future, to holders of bonds, warrants or marketable securities listed or traded (or that may be listed or traded) on a regulated market, multilateral trading system, over-the-counter market or any other market, unless the same ranking or same surety or guarantee is granted to the Bonds.

These six bond issues specifically include a change-of-control clause that would trigger the mandatory prepayment of the bonds at the request of each bondholder in the event of a change of control of the Company (in favor of a person or a group of people acting in concert) leading to a downgrade of Vallourec's financial rating.

In addition, prepayment of the Bonds may be requested by the bondholder or the Company, depending on the case, should any of the common default scenarios for this type of transaction arise or in respect of a change in the Company's position or in tax regulations.

The October 2022 OCEANEs may be subject to prepayment at the discretion of the Company, at any time as of 20 October 2020, under the conditions described in the terms and conditions of the October 2022 OCEANEs. The October 2022 Bonds and the October 2023 Bonds may be subject to prepayment at the Company's discretion under the conditions described in the document entitled "Offering Memorandum" as of 15 October 2020.

The prospectuses for listing the August 2019 Bonds and the September 2024 Bonds on the Euronext Paris stock market may be consulted on the websites of the Company (www.vallourec.com) and the French securities regulator (www.amf-france.org). The terms and conditions of the October 2022 OCEANEs and the main characteristics of the October 2022 Bonds and the October 2023 Bonds appearing in the document entitled "Offering Memorandum" may be consulted on the Company's website (www.vallourec.com).

Rating

As at 1 January 2018, the opening date of the 2018 fiscal year, Vallourec's debt was rated B/negative/B by Standard & Poor's. On 26 November 2018, this agency downgraded Vallourec's rating to B-/negative/B. Consequently, as at 31 December 2018, Vallourec's debt had a rating of B-/negative/B from Standard & Poor's.

2.3 Distribution of share capital and voting rights

2.3.1 Changes in the distribution of the share capital in the last three years

FY 2016 (as at 31 December)

Shareholders	Number of shares	% of share capital	Number of theoretical voting rights	% of theoretical voting rights	% of exercisable voting rights at Shareholders' Meetings
Public [(a) (b) (c)]	291,644,528	64.63%	293,944,782	63.53%	63.92%
Group employees	15,778,550	3.50%	16,516,708	3.57%	3.59%
Bpifrance Participations SA [(d) (g) (l) (o)]	66,695,708	14.78%	73,166,786	15.81%	15.91%
CDC Savings Fund Department [(e) (f) (h) (j)]	7,585,658	1.68%	7,585,658	1.64%	1.65%
GROUP SUBTOTAL, CDC [(n)]	**74,281,366**	**16.46%**	**80,752,444**	**17.45%**	**17.56%**
Nippon Steel Corporation [(i) (k) (e) (o)]	66,695,715	14.78%	68,668,849	14.84%	14.93%
Treasury shares [(m)]	2,837,846	0.63%	2,837,846	0.61%	0.00%
TOTAL	**451,238,005**	**100.00%**	**462,720,629**	**100.00%**	**100.00%**

(a) *The "Public" part includes the Deutsche Bank AG position. According to a letter received by the AMF on 12 February 2016, Deutsche Bank AG declared that it had exceeded the 5% voting rights threshold on 5 February 2016 after acquiring Vallourec shares on the market, holding 8,760,261 shares representing the same number of voting rights, or 6.46% of the capital and 5.96% of the voting rights. On 8 March 2016, following a transfer of Vallourec shares on the market, Deutsche Bank AG declared that it had fallen below the 5% capital and voting right thresholds, holding 6,333,453 shares representing the same number of voting rights, or 4.67% of the capital and 4.31% of the voting rights.*

(b) *The "Public" part includes the UBS AG position. According to a letter received by the AMF on 23 February 2016, UBS AG declared that it had directly and indirectly exceeded Vallourec's 5% capital threshold on 17 February 2016 after acquiring Vallourec shares off the market, holding 6,984,791 Vallourec shares representing the same number of voting rights, or 5.15% of the capital and 4.75% of the voting rights. On 18 February 2016, UBS AG directly and indirectly dropped below the 5% capital threshold after transferring Vallourec shares off the market, holding 5,798,449 shares representing the same number of voting rights, or 4.27% of the capital and 3.95% of the voting rights. On 31 August 2016, UBS AG directly and indirectly exceeded the 5% capital and voting right thresholds after acquiring Vallourec shares off the market, holding 27,785,481 shares at that date representing the same number of voting rights, or 6.25% of the capital and 6.09% of the voting rights. On 1 September 2016, UBS AG directly and indirectly dropped below the 5% capital and voting right thresholds after transferring Vallourec shares off the market, holding 7,849,806 shares representing the same number of voting rights, or 1.77% of the capital and 1.72% of the voting rights.*

(c) *The "Public" part includes the Crédit Agricole SA position. According to a letter received by the AMF on 15 April 2016, Crédit Agricole SA declared that it had indirectly exceeded Vallourec's 10% capital threshold on 11 April 2016, through Crédit Agricole Corporate and Investment Bank (CACIB), which it controls, holding 14,101,204 Vallourec shares representing the same number of voting rights, or 10.39% of the capital and 9.59% of the voting rights. On 3 May 2016, following a capital increase by Vallourec, Crédit Agricole SA declared that it had indirectly, through Crédit Agricole Corporate and Investment Bank (CACIB), which it controls, dropped below the 10% capital and 5% capital and voting right thresholds, holding 14,814,587 Vallourec shares representing the same number of voting rights, or 3.87% of the capital and 3.76% of the voting rights.*

(d) *In a letter that the AMF received on 29 February 2016, Bpifrance ("EPIC Bpifrance") declared that it had indirectly, on 23 February 2016, following an acquisition by Bpifrance Participations SA of Vallourec shares on the market, exceeded Vallourec's 6% capital and 10% voting right thresholds, indirectly holding 9,112,462 shares representing 15,583,540 voting rights, or 6.72% of the capital and 10.60% of the voting rights.*

(e) *In a letter that the AMF received on 1 March 2016, Caisse des dépôts et consignations (CDC) declared that it had exceeded, on 25 February 2016, directly and indirectly through Bpifrance Participations SA, a company it controls through Bpifrance SA, Vallourec's 10% capital threshold following an acquisition of Vallourec shares on the market, holding 13,682,200 Vallourec shares representing 20,153,278 voting rights, or 10.08% of the capital and 13.71% of the voting rights (with Bpifrance Participations SA holding 10,764,638 Vallourec shares at that date, representing 7.93% of the capital and 11.72% of the voting rights).*

(f) *In a letter that the AMF received on 8 March 2016, Caisse des dépôts et consignations (CDC) declared that it had exceeded, on 3 March 2016, directly and indirectly through Bpifrance Participations SA, Vallourec's 15% voting rights threshold, holding 15,614,207 shares representing 22,085,285 voting rights, or 11.51% of capital and 15.03% of voting rights, following an acquisition of Vallourec shares on the market (Bpifrance Participations SA, holding 12,696,645 Vallourec shares at that date, representing 9.36% of the capital and 13.04% of the voting rights).*

(g) *In a letter that the AMF received on 10 March 2016, Bpifrance ("EPIC Bpifrance") declared that it had indirectly, on 7 March 2016, following an acquisition by Bpifrance Participations of Vallourec shares on the market, exceeded Vallourec's 10% capital threshold, indirectly holding 13,583,965 shares representing 20,055,043 voting rights, or 10.01% of the capital and 13.65% of the voting rights.*

(h) *In a letter that the AMF received on 9 May 2016, Caisse des dépôts et consignations declared that it had directly and indirectly exceeded, on 3 May 2016, through Bpifrance Participations SA, the 15% capital and 20% voting right thresholds following the capital increase of 3 May 2016, holding 74,281,365 Vallourec shares representing 80,752,443 voting rights, or 19.39% of capital and 20.47% of voting rights, noting that Bpifrance ("EPIC Bpifrance") simultaneously declared that it had exceeded, on 3 May 2016, indirectly through Bpifrance Participations SA, the 15% capital and voting right threshold, indirectly holding 66,695,707 shares representing 73,166,785 voting rights, or 17.41% of capital and 18.55% of the voting rights.*

(i) *In a letter received on 21 June 2016, Nippon Steel Corporation (NSC, formerly NSSMC) declared that it had exceeded, on 20 June 2016, following a redemption of bonds redeemable in new Vallourec shares, the 5%, 10% and 15% capital and voting right thresholds, holding 66,695,715 shares representing 68,668,849 voting rights, or 15.00% of the capital and 15.06% of the voting rights.*

(j) *In a letter that the AMF received on 24 June 2016, Caisse des dépôts et consignations (CDC) declared that it had dropped below, on 20 June 2016, directly and indirectly through Bpifrance Participations SA, the 20% voting right threshold, holding 74,281,366 Vallourec shares representing 80,752,444 voting rights, or 16.71% of capital and 17.71% of voting rights (Bpifrance Participations SA, holding 66,695,708 Vallourec shares at that date, representing 15.00% of the capital and 16.05% of the voting rights).*

(k) *In a letter that the AMF received on 20 December 2016, Nippon Steel Corporation (NSC, formerly NSSMC) declared that it had dropped below Vallourec's 15% capital and voting right thresholds on 14 December 2016, holding 66,695,715 Vallourec shares representing 68,668,849 voting rights, or 14.78% of the capital and 14.84% of the voting rights. These thresholds were crossed following the completion on 14 December 2016 of a capital increase that was reserved for employees of the Vallourec Group (Value 16).*

(l) *In a letter that the AMF received on 20 December 2016, Bpifrance ("EPIC Bpifrance") declared that it had dropped below the 15% capital threshold on 16 December 2016, indirectly through Bpifrance Participations, indirectly holding 66,695,708 Vallourec shares representing 73,166,786 voting rights, or 14.78% of the capital and 15.81% of the voting rights. These thresholds were crossed following the completion on 14 December 2016 of a capital increase that was reserved for employees of the Vallourec Group (Value 16).*

(m) *Treasury shares held directly include the shares shown on the balance of the liquidity contract managed by Rothschild & Cie Banque and the shares held by the Company on its own account to cover its plans to allocate performance shares and free shares. As a result, the number of treasury shares is subject to change at any time.*

(n) *Bpifrance Participations, jointly with Caisse des dépôts et consignations (CDC). By letter received by the French securities regulator on 30 April 2014, CDC and Bpifrance Participations SA clarified that they were each acting alone, and CDC declared that there was no collaboration with Bpifrance Participations SA.*

(o) *As of 1 February 2016, Bpifrance Participations on the one hand and Nippon Steel Corporation (NSC, formerly NSSMC) on the other must respect a 15% cap on their voting rights for a 15-year period, subject to certain reservations.*

FY 2017 (as at 31 December)

Shareholders	Number of shares	% of share capital	Number of theoretical voting rights	% of theoretical voting rights	% of exercisable voting rights at Shareholders' Meetings
Public	297,640,888	64.99%	299,971,735	63.87%	63.90%
Group employees [(a)]	19,197,184	4.19%	20,044,743	4.27%	4.27%
Bpifrance Participations SA [(b)]	66,695,708	14.56%	73,166,786	15.58%	15.59%
CDC Savings Funds Department	7,585,658	1.66%	7,585,658	1.62%	1.62%
GROUP SUBTOTAL, CDC [(c)]	**74,281,366**	**16.22%**	**80,752,444**	**17.20%**	**17.20%**
Nippon Steel Corporation [(b)]	66,695,715	14.56%	68,668,849	14.62%	14.63%
Treasury shares [(d)]	172,607	0.04%	172,607	0.04%	0.00%
TOTAL	**457,987,760**	**100.00%**	**469,610,378**	**100.00%**	**100.00%**

(a) The stake of Group employees as at 31 December 2017 includes all of the shares subscribed via company mutual funds under the international employee share ownership plans that have been implemented by the Group over the last 10 years, which include allocated shares at that date. Recall that under the leveraged formula of these plans, the performance multiple on the Vallourec shares is obtained thanks to a transfer of the discount on dividends and other financial rights related to ownership of the shares to the bank structuring the transaction through a swap contract. As at 31 December 2017, 15,966,628 non-allocated shares appeared in the assets of the company mutual funds, an employee stake of 3.40% in capital and 3.58% in voting rights at that date.

(b) As of 1 February 2016, Bpifrance Participations on the one hand and Nippon Steel Corporation (NSC, formerly NSSMC) on the other must respect a 15% cap on their voting rights for a 15-year period, subject to certain reservations.

(c) Bpifrance Participations, jointly with Caisse des dépôts et consignations (CDC). By letter received by the French securities regulator on 30 April 2014, CDC and Bpifrance Participations SA clarified that they were each acting alone, and CDC declared that there was no collaboration with Bpifrance Participations SA.

(d) Treasury shares included the shares appearing in the balance of the liquidity contract handled by Rothschild & Cie Banque. This contract, which had been in effect since 26 June 2012 and concerned 2,481,000 shares, was terminated on 18 December 2017 after the closing of the Euronext Paris market.

FY 2018 (as at 31 December)

Shareholders	Number of shares	% of share capital	Number of theoretical voting rights	% of theoretical voting rights	% of exercisable voting rights at Shareholders' Meetings
Public [(a) (b)]	301,544,617	65.84%	304,017,150	64.65%	64.66%
Group employees [(c)]	16,930,023	3.70%	17,824,140	3.79%	3.79%
Bpifrance Participations SA [(d)]	66,695,708	14.56%	73,654,348	15.66%	15.66%
CDC Savings Funds Department	6,030,658	1.32%	6,030,658	1.28%	1.28%
GROUP SUBTOTAL, CDC [(e)]	**72,726,366**	**15.88%**	**79,685,006**	**16.94%**	**16.95%**
Nippon Steel Corporation [(d)]	66,695,715	14.56%	68,668,849	14.60%	14.60%
Treasury shares [(f)]	91,039	0.02%	91,039	0.02%	0.00%
TOTAL	**457,987,760**	**100.00%**	**470,286,184**	**100.00%**	**100.00%**

(a) The "Public" part includes the JP Morgan Chase & Co. position, which as at 31 December 2018 amounted to 123,003 Vallourec shares, i.e. 0.03% of the capital and voting rights. During 2018, JP Morgan Securities plc, a company controlled by JP Morgan Chase & Co, exceeded and dropped below the 5% capital and voting right thresholds on several occasions. The JP Morgan Securities plc shares were primarily held under cash-settled equity swaps, to be settled in 2023.

- In a letter that the AMF received on 19 April 2018, JP Morgan Securities plc declared that it had exceeded Vallourec's 5% capital and voting right thresholds on 13 April 2018, holding 24,025,598 Vallourec shares representing the same number of voting rights, or 5.25% of the capital and 5.11% of the voting rights. On 20 April 2018, JP Morgan Securities plc declared that it had dropped below Vallourec's 5% capital and voting right thresholds on 17 April 2018, holding 21,609,877 Vallourec shares representing the same number of voting rights, or 4.72% of the capital and 4.60% of the voting rights. On 30 May 2018, JP Morgan Securities plc declared that it had exceeded Vallourec's 5% capital and voting right thresholds on 24 May 2018, holding 25,106,662 Vallourec shares representing the same number of voting rights, or 5.48% of the capital and 5.34% of the voting rights. On 31 May 2018, JP Morgan Securities plc declared that it had dropped below Vallourec's 5% capital and voting right thresholds on 25 May 2018, holding 22,313,337 Vallourec shares representing the same number of voting rights, or 4.87% of the capital and 4.75% of the voting rights. On 11 June 2018, JP Morgan Securities plc declared that it had exceeded Vallourec's 5% capital and voting right thresholds on 7 June 2018, holding 23,905,415 Vallourec shares representing the same number of voting rights, or 5.22% of the capital and 5.09% of the voting rights. On 27 June 2018, JP Morgan Securities plc declared that it had dropped below Vallourec's 5% capital and voting right thresholds on 21 June 2018, holding 23,268,017 Vallourec shares representing the same number of voting rights, or 5.08% of the capital and 4.95% of the voting rights. On 13 July 2018, JP Morgan Securities plc declared that it had exceeded Vallourec's 5% capital and voting right thresholds on 10 July 2018, holding 24,123,728 Vallourec shares representing the same number of voting rights, or 5.27% of the capital and 5.13% of the voting rights. On 7 August 2018, JP Morgan Securities plc declared that it had dropped below Vallourec's 5% capital and voting right thresholds on 2 August 2018, holding 22,188,834 Vallourec shares representing the same number of voting rights, or 4.84% of the capital and 4.72% of the voting rights. On 29 August 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% capital and voting rights thresholds on 24 August 2018, through JP Morgan Securities plc and JP Morgan Chase Bank, National Association, which it controls, indirectly holding 23,726,653 Vallourec shares, representing the same number of voting rights, i.e. 5.18% of the capital and 5.05% of the voting rights. On 4 September 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital and voting rights thresholds on 30 August 2018, through JP Morgan Securities plc and JP Morgan Chase Bank, National Association, which it controls, indirectly holding 23,240,716 Vallourec shares, representing the same number of voting rights, i.e. 5.07% of the capital and 4.94% of the voting rights. On 5 September 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital threshold on 31 August 2018, through companies it controls, indirectly holding 22,883,969 Vallourec shares, representing the same number of voting rights, i.e. 4.99% of the capital and 4.87% of the voting rights. On 10 September 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% capital threshold on 4 September 2018, through JP Morgan Securities plc, which it controls, indirectly holding 23,223,504 Vallourec shares representing the same number of voting rights, or 5.07% of the capital and 4.94% of the voting rights. On 13 September 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% voting rights threshold on 10 September 2018, through JP Morgan Securities plc, which it controls, indirectly holding 23,646,149 Vallourec shares, representing the same number of voting rights, i.e. 5.16% of the capital and 5.03% of the voting rights. On 20 September 2018, JP Morgan Securities plc declared that it had dropped below Vallourec's 5% voting right threshold on 18 September 2018, holding 23,429,010 Vallourec shares representing the same number of voting rights, or 5.12% of the capital and 4.98% of the voting rights. On that occasion, JP Morgan Chase & Co. did not cross any threshold indirectly through companies it controls. On 25 September 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% voting right threshold on 19 September 2018, through companies it controls, indirectly holding 23,064,795 Vallourec shares, representing the same number of voting rights, i.e. 5.04% of the capital and 4.91% of the voting rights. On 26 September 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital threshold on 20 September 2018, through companies it controls, indirectly holding 22,202,606 Vallourec shares, representing the same number of voting rights, i.e. 4.85% of the capital and 4.72% of the voting rights. On 22 October 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% capital and voting right thresholds on 17 October 2018, through companies it controls, indirectly holding 23,850,357 Vallourec shares, representing the same number of voting rights, i.e. 5.21% of the capital and 5.07% of the voting rights. In the same letter, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital and voting right thresholds on 18 October 2018, through companies it controls, indirectly holding 21,753,351 Vallourec shares, representing the same number of voting rights, i.e. 4.75% of the capital and 4.63% of the voting rights. On 30 October 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% capital and voting right thresholds on 25 October 2018, through companies it controls, indirectly holding 27,648,952 Vallourec shares, representing the same number of voting rights, i.e. 6.04% of the capital and 5.88% of the voting rights. On 13 December 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% voting right threshold on 10 December 2018, through companies it controls, indirectly holding 23,485,630 Vallourec shares, representing the same number of voting rights, i.e. 5.13% of the capital and 4.99% of the voting rights. On 20 December 2018, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital threshold on 18 December 2018, through companies it controls, indirectly holding 68,003 Vallourec shares, representing the same number of voting rights, i.e. 0.01% of the capital and voting rights. On 27 December 2018, JP Morgan Chase & Co. declared that it had indirectly exceeded Vallourec's 5% capital threshold on 20 December 2018, through companies it controls, indirectly holding 23,175,482 Vallourec shares, representing the same number of voting rights, i.e. 5.06% of the capital and 4.93% of the voting rights. On this occasion, JP Morgan Securities plc independently exceeded the same threshold. On 2 January 2019, JP Morgan Chase & Co. declared that it had indirectly dropped below Vallourec's 5% capital threshold on 31 December 2018, through companies it controls, indirectly holding 123,003 Vallourec shares, representing the same number of voting rights, i.e. 0.03% of the capital and voting rights.

(b) The "Public" part includes the Crédit Agricole SA position. The following thresholds were crossed as a result of cash-settled total return swaps (TRS) concerning Vallourec shares:

- According to a letter received by the AMF on 30 May 2018, Crédit Agricole SA declared that it had indirectly exceeded Vallourec's 5% capital and voting right thresholds on 24 May 2018, through Crédit Agricole Corporate and Investment Bank, and CACEIS, which it controls, holding 25,874,217 Vallourec shares representing the same number of voting rights, or 5.65% of the capital and 5.51% of the voting rights. On 31 August 2018, Crédit Agricole SA declared that it had indirectly dropped below Vallourec's 5% capital and voting right thresholds on 28 August 2018, through Crédit Agricole Corporate and Investment Bank, and CACEIS, which it controls, holding 21,159,186 Vallourec shares representing the same number of voting rights, or 4.62% of the capital and 4.50% of the voting rights. On 23 October 2018, supplemented by a letter received on 24 October 2018, Crédit Agricole SA declared that it had indirectly exceeded Vallourec's 5% capital and voting right thresholds on 17 October 2018, through Crédit Agricole Corporate and Investment Bank, and CACEIS, which it controls, holding 27,852,849 Vallourec shares representing the same number of voting rights, or 6.08% of the capital and 5.92% of the voting rights.

The following thresholds were crossed as a result of returns from Vallourec securities loans by Crédit Agricole Corporate and Investment Bank:

- According to a letter received on 4 December 2018, Crédit Agricole Corporate and Investment Bank, a company controlled by Crédit Agricole SA, declared to have independently dropped below Vallourec's 5% voting right threshold on 29 November 2018, independently holding 22,938,931 Vallourec shares representing the same number of voting rights, i.e. 5.01% of the capital and 4.88% of the voting rights. On this occasion, Crédit Agricole SA did not cross any threshold and as at 29 November 2018 held, indirectly through Crédit Agricole Corporate and Investment Bank, and CACEIS, which it controls, 24 323 926 Vallourec shares representing the same number of voting rights, i.e. 5.31% of the capital and 5.17% of the voting rights.

- According to a letter received by the AMF on 6 December 2018, Crédit Agricole SA declared that it had indirectly dropped below Vallourec's 5% capital and voting right thresholds on 30 November 2018, through Crédit Agricole Corporate and Investment Bank and CACEIS, which it controls, holding 1,384,995 Vallourec shares representing the same number of voting rights, or 0.30% of the capital and 0.29% of the voting rights.

(c) The stake of Group employees as at 31 December 2018 includes all of the shares subscribed via company mutual funds under the international employee share ownership plans that have been implemented by the Group since 2007, which include allocated shares at that date. Recall that under the leveraged formula of these plans, the performance multiple on the Vallourec shares is obtained thanks to a transfer of the discount on dividends and other financial rights related to ownership of the shares to the bank structuring the transaction through a swap contract. As at 31 December 2018, 8,045,023 non-allocated shares appeared in the assets of the company mutual funds, an employee stake of 1.76% in capital and 1.90% in voting rights at that date.

(d) As at 1 February 2016, Bpifrance Participations on the one hand and Nippon Steel Corporation (NSC, formerly NSSMC) on the other must respect a 15% cap on their voting rights for a 15-year period, subject to certain reservations.

(e) Bpifrance Participations, jointly with Caisse des dépôts et consignations (CDC). By letter received by the French securities regulator on 30 April 2014, CDC and Bpifrance Participations SA clarified that they were each acting alone, and CDC declared that there was no collaboration with Bpifrance Participations SA.

(f) Treasury shares include the shares held by the Company on its own account to cover its free share and performance share allocation plans. As a result, the number of treasury shares is subject to change at any time.

To the best of the Company's knowledge, there are no other shareholders who, directly or indirectly, alone or together, hold more than 5% of the share capital or voting rights.

As at 31 December 2018, Vallourec's free float percentage was 65.84%.

2.3.2 Other persons exercising control over Vallourec

None.

2.3.3 Shareholders' agreements

On 1 February 2016, the Company entered into two shareholders' agreements with Bpifrance and Nippon Steel Corporation (NSC, formerly NSSMC), which were intended to regulate the shareholdings of Bpifrance and NSC. These shareholders' agreements were entered into for a 15-year term beginning on 1 February 2016 and may be extended for successive five-year periods, with each party having the option of terminating the agreement by giving written notice to the other party no less than six months before the expiration date.

A description of the main provisions of these shareholders' agreements appears in the declarations submitted to the French securities regulator regarding the communication of agreements between shareholders, as required by Article L.233-11 of the French Commercial Code *(Code de commerce)*. These declarations are available on the AMF website: http://www.amf-france.org/.

The cross-shareholding agreement entered into on 26 February 2009 between Vallourec and Nippon Steel Corporation (NSC, formerly NSSMC) was terminated in light of Vallourec's disposal of its stake in the capital of NSC.

2.3.3.1 Shareholders' agreement with Bpifrance

Governance: under the shareholders' agreement, Bpifrance has the right to request the appointment (and, where necessary, the renewal) of a representative to the Company's Supervisory Board, as long as Bpifrance holds more than 5% of the Company's capital and voting rights. Bpifrance has moreover committed to vote, when the Shareholders' Meeting decides on the appointment of an NSC representative to the Company's Supervisory Board, in favor of this appointment.

Commitments relating to ordinary shares: the shareholders' agreement prohibits the transfer of shares to a competitor of the Company and sets out orderly disposal clauses for the sale of shares on the market by Bpifrance or a selected investment service provider. These restrictions are not applicable, subject to certain conditions, in the event of a tender offer or a transfer to an affiliate.

Standstill: the shareholders' agreement is accompanied by a commitment from Bpifrance to limit its stake, individually or in concert, to 15% of the Company's voting rights as from 1 February 2016 and until the expiration date of the shareholders' agreement. Notwithstanding this standstill undertaking, under the shareholders' agreement Bpifrance may continue to benefit, for a four-year period starting on 1 February 2016, from the double voting rights attached to the Company's shares owned by Bpifrance, but it shall not use voting rights in excess of the 15% threshold at any Shareholders' Meeting of the Company. This standstill undertaking shall not apply upon the occurrence of a tender offer or if a third party comes to hold, acting alone or in concert, directly or indirectly, more than 15% of the Company's share capital or voting rights.

Right of first offer: Bpifrance has committed to inform the Company in writing in case it intends to transfer its shares to a third party. The Company will then have the right to purchase (or cause another party to purchase) the shares offered under the same conditions.

2.3.3.2 Shareholders' agreement with Nippon Steel Corporation (NSC, formerly NSSMC)

Governance: under the shareholders' agreement, NSC is entitled to request the appointment of one representative on the Supervisory Board of the Company at the first Shareholders' Meeting following the redemption of the mandatory convertible bonds into ordinary shares, as long as it holds more than 10% of the share capital and voting rights of the Company. The Company has undertaken to present and recommend a resolution at this Shareholders' Meeting to the effect of appointing an NSC representative as a member of the Supervisory Board. This member will be subject to information barriers to prevent the exchange of any competitively sensitive information.

Commitments relating to ordinary shares: the shareholders' agreement prohibits the transfer of shares to a competitor of Vallourec and sets out orderly disposal clauses for the sale of shares on the market by NSC or a selected investment service provider. These restrictions are not applicable, subject to certain conditions, in the event of a tender offer or a transfer to an affiliate.

Standstill: this shareholders' agreement is accompanied by a commitment from NSC to limit its stake, individually or in concert, to 15% of the Company's voting rights as from 1 February 2016 and until the expiration date of the shareholders' agreement. This standstill undertaking shall not apply upon the occurrence of a tender offer or if a third party comes to hold, acting alone or in concert, directly or indirectly, more than 15% of the Company's share capital or voting rights.

Right of first offer: NSC has committed to inform the Company in writing in case it intends to transfer its shares to a third party. The Company will then have the right to purchase (or cause another party to purchase) the shares offered under the same conditions.

Industrial agreements: in the event of a termination of the Joint Venture Agreement (shareholders' agreement) in Brazil, the R&D Contract or the trademark license agreement (entered into on 1 April 2007) signed between the Company and NSC (and/or their respective subsidiaries):

- due to the fault of NSC, the latter shall transfer all the Company's shares it holds within six months of the occurrence of the termination, subject to the contractual transfer restrictions applicable to the transfer of shares. NSC shall not exercise any voting rights relating to its shares during any Shareholders' Meeting held after the occurrence of the termination; and
- due to the fault of the Company, NSC shall either file a tender offer for the securities of the Company (by exception to the standstill undertaking), or transfer its shares without applying the restrictions applicable to transfers of shares (subject only to the prohibition to sell the shares to a competitor, which will remain applicable).

2.4 Market for Vallourec's shares

2.4.1 Stock market

The Company's shares are listed in Sub-Fund A of the Euronext Paris regulated market (ISIN code: FR0000120354-VK). They are eligible for deferred settlement and are a qualifying investment under French laws on equity savings plans *(Plan d'Épargne en Actions – PEA)*.

The Vallourec share is one of the shares traded on the following indexes: SBF 120 and Next 150.

The August 2019 Bonds and September 2024 Bonds are admitted to trading on the Euronext Paris stock market under ISIN codes FR0011302793 and FR0012188456 respectively. The October 2022 OCEANEs (Bonds Convertible into New Shares and/or Exchangeable for Existing Shares) are admitted for trading on the Euronext Access market in Paris under ISIN code FR0013285046. The October 2022 Bonds are admitted for trading on the Euro MTF stock market of the Luxembourg Stock Exchange under the code XS1700480160. The October 2023 Bonds are admitted for trading on the Euro MTF stock market of the Luxembourg Stock Exchange under the code XS1807435026 (see Section 2.2.6, "Non-equity instruments" above).

2.4.2 Other potential markets

In October 2010, Vallourec set up a sponsored Level 1 American Depositary Receipt (ADR) program in the United States. This initiative demonstrates the Group's intention to broaden its investor base by enabling a larger number of US-based investors to participate in its future development.

An ADR is a US-dollar-denominated marketable security representing shares in a non-US company, which allows American investors to hold shares indirectly and to trade them on securities markets in the United States. Vallourec's ADRs may be traded on the US over-the-counter (OTC) market.

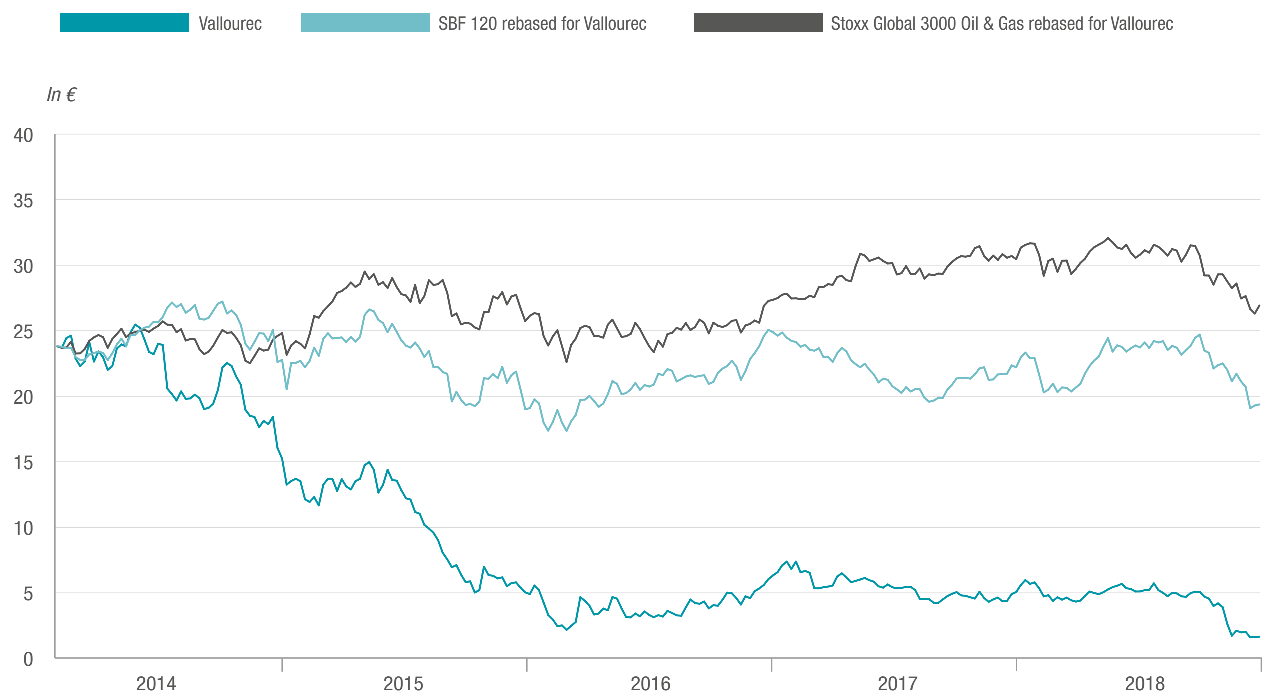
JPMorgan is the custodian bank responsible for administering the ADR program. Technical information about the ADR program is available on the Group's website under the ADR heading. For further information, ADR holders may contact JPMorgan services, as follows:

- by phone: (800) 990-1135 (general) or (651) 453-2128 (if calling from outside the USA);
- by e-mail: jpmorgan.adr@wellsfargo.com, or by mail at the following address:

  JPMorgan Service Center
  JPMorgan Chase & Co.
  P.O. Box 64504
  St Paul, MN 55164-0504
  USA

2.4.3 Movements in the share price and market capitalization in the last five years

Vallourec share price performance in the last five years compared to the SBF 120 index and the Stoxx Global 3000 Oil & Gas



Movements in share price and market capitalization in the last five years

In euros	2014	2015	2016	2017	2018
Number of shares outstanding (as at 31 December)	130,597,975	135,688,432	451,238,005	457,987,760	457,987,760
Highest price	43.26	26.79	6.65	7.47	6.08
Lowest price	21.23	7.63	1.93	4.02	1.56
Average (closing) price for the year	34.80	16.43	3.92	5.40	4.60
Year-end price	22.75	8.60	6.55	5.04	1.63
Market capitalization (year-end price)	2,971,103,931	1,166,920,515	2,955,608,933	2,305,968,372	744,459,104

Source: Euronext.

2.5 Dividend policy

Vallourec's dividend policy, as approved by the Supervisory Board at its meeting on 17 April 2003, is, over the long term, to distribute on average 33% of its consolidated net income, Group share.

Given the negative result in the 2018 fiscal year, it will be proposed at the Shareholders' Meeting of 23 May 2019 (third resolution) not to pay any dividend for the 2018 fiscal year.

The average payout ratio over the last five years is 8.86%.

Based on the par value of the Vallourec share as at 31 December 2018, the dividends per share paid for the last five years are as follows:

In euros per share	Gross earnings	Tax credit	Net dividend	Payout ratio (a)
2014	0.81	None	0.81 (b)	44.3%
2015	0	None	0	–
2016	0	None	0	–
2017	0	None	0	–
2018 (c)	0	None	0	–

(a) The payout ratio is calculated based on the total number of shares outstanding as at 31 December.

(b) Note that the Ordinary and Extraordinary Shareholders' Meeting of 28 May 2015 gave each of the Company's shareholders the option to receive payment of the dividend in cash or in shares, in accordance with the laws and regulations in force.

(c) Submitted for the approval of the Shareholders' Meeting of 23 May 2019.

2.6 Financial disclosure policy

The Group's priority is to maintain lasting, trustworthy relations with all its shareholders, whether individual or institutional, French or foreign. The role of the Investor Relations team is to facilitate shareholders' access to accurate and precise information that faithfully reflects the Group's activities, results, outlook and strategic developments.

Accordingly, and with ongoing concern for clarity and transparency, numerous dedicated communications media are available, and regular meetings are arranged throughout the year.

2.6.1 Information available to all shareholders

Financial information and communications media are electronically available to all shareholders on the Group's website (www.vallourec.com) under the Investors heading, which is an authoritative Group financial communications database.

This media includes:

- the activity report, Vallourec at a glance brochure and letters to shareholders;
- all financial and strategic information issued to the financial markets, including quarterly results, press releases, financing, presentations and audio broadcasts of the annual results, and video broadcasts of the Shareholders' Meeting;
- all the regulated information disclosed under the European Transparency Directive of 15 December 2004 as amended, which specifically comprises:
  - the Registration Document, including the annual financial report, the half-year report and the management report of the Management Board, filed with the French securities regulator *(Autorité des marchés financiers)*,
  - documents relating to the Shareholders' Meeting (Notice of Meeting, draft resolutions, voting form, meeting brochure);
- all Group press releases, presentations and publications, which are available under the Media heading.

This information may be sent by mail following a request made on the Group website or addressed to the Investor Relations Department by e-mail, telephone or letter.

Annual Shareholders' Meeting

The Annual Shareholders' Meeting, which in 2018 was held at Maison de la Mutualité, is a key opportunity for dialog about the Group's performance over the year between shareholders and the Group's executive management. The Investor Relations team is also available to assist shareholders in their efforts to vote and participate in the Shareholders' Meeting.

Newsfeed

When disseminating its publications, Vallourec provides its shareholders and stakeholders with the possibility of subscribing to a Group newsfeed via the Internet at www.vallourec.com (Investors heading), through a simple online registration process. The newsfeed allows press releases on the Group's financial results and activities to be received electronically, along with notifications of financial publications and letters to shareholders.

2.6.2 Relations with institutional investors and financial analysts

On a regular basis and in accordance with best business practices, the Investor Relations Department organizes, along with various members of the Group's executive management, meetings with institutional investors and financial analysts, including SRI (socially responsible investment) specialists, in France and abroad:

- **each quarter, a conference call is organized** when the financial results are released. Members of the Management Board present the results and answer questions from analysts and investors. The conference call is broadcast live and rebroadcast on the Group's website;
- **each year, a face-to-face meeting is held in Paris,** upon release of the Group's annual results;
- **Vallourec regularly participates in events on socially responsible investment (SRI).** These meetings with investment funds and SRI analysts contribute to the Group's progress in the field of sustainable development;
- **an Investor Day is regularly organized,** where a presentation is made to the financial community on the Group's strategy, products and operations. Accessible to everyone in the form of a video broadcast that is available on the Group's website, the Investor Day allows investors and analysts to have detailed discussions with the Management Board and the operational supervisors on a wide range of topics, outside of the periods for reporting results.

Moreover, **many events are organized throughout the year between the Group's executive management and the financial community.** In 2018, Vallourec's executive management and the Investor Relations team took part in nearly 240 meetings and conference calls, and devoted some 35 days to roadshows and conferences, which were mainly dedicated to the oil and gas sector, at the world's leading financial centers, mainly in Europe and the United States.

2.6.3 Relations with individual shareholders

The Group seeks to promote a sustained dialog with its individual shareholders and strengthen the trusting, close relationships it has built with them. This dialog also helps Vallourec better understand the concerns of its individual shareholders, and to meet their expectations.

To that end, and through various additional media, specific communications methods were developed:

- an Individual Shareholders' section under the Investors heading of the Group's website (www.vallourec.com);
- the posting of financial notices in conformity with the current regulations (release of results, Notice of Shareholders' Meetings);
- specific communications media such as letters to shareholders;
- a dedicated toll-free number for individual shareholders (0800 505 110, free from any landline in mainland France), which allows them to access information such as the financial agenda, as well as to hear a commentary on the most recent publication of the Group's results. The toll-free number also allows shareholders to get in touch with the Investor Relations team, or BNP Paribas Securities Services, if the shareholder has registered shares or is interested in acquiring such shares;

- a newsfeed which allows press releases, notifications of financial publications as well as letters to shareholders to be received electronically, simply by registering online at www.vallourec.com (Investors heading);
- a presence at the Actionaria Exhibition on 22 and 23 November 2018. The Investor Relations team, along with the business line experts, was thus able to present or reintroduce business lines, know-how and solutions of the Group, and to speak with the individual shareholders;
- a Shareholders' Club allowing members to participate in meetings dedicated to presenting financial results and to having more regular exchanges with Vallourec in order to gain a better knowledge and understanding of its activities. The Shareholders' Club and the conditions for joining and registering are accessible online at www.vallourec.com (Investors/Shareholder corner heading);
- lastly, an Investor Relations team is always available to answer shareholders' questions.

Directly registered shares

Vallourec offers its shareholders direct registration of their shares, which includes the following benefits:

- **free management:** direct registered shareholders are totally exempt from custody fees as well as other fees associated with the routine management of their shares such as:
  - conversion to bearer shares and share transfers,
  - changes to legal status: transfers, gifts, inheritance, etc.,
  - securities transactions (capital increases, share allocations, etc.),
  - dividend payments;
- **brokerage fees** of 0.25% of the amount of the transaction up to €200,000 and 0.15% above €200,000 (with a minimum of €4.10);
- **a guarantee of receiving personalized information:** the direct registered shareholder will receive personalized information on:
  - invitations to Shareholders' Meetings, with systematic sending of the Notice of Meeting, an individual form for postal voting or voting by proxy, and, upon request, the sending of an admission card and legal documentation,
  - securities management (purchase and sale orders, etc.), securities transactions organized by Vallourec, etc. To this effect, as well as for other information, a team of dedicated operators is continuously available to shareholders from 8:45 a.m. to 6:00 p.m. (Paris time), Monday to Friday, on +33 (0)1 40 14 80 17;
- **easy access to the Shareholders' Meeting:** all registered shareholders are automatically invited to Shareholders' Meetings, and are not required to first request a certificate of shareholding to vote;
- **a dedicated website,** Planetshares, can be accessed at: https://planetshares.bnpparibas.com. This site allows you to:
  - manage your assets,
  - issue orders,
  - participate in the Shareholders' Meeting,
  - directly download all communications relating to assets (portfolio trading, transaction notices, etc.).

Further information about direct registration and registration forms may be obtained from BNP Paribas Securities Services:

- by mail at the following address:

  BNP PARIBAS SECURITIES SERVICES
  Corporate Trust Services
  Relations Actionnaires Vallourec
  9, rue du Débarcadère
  93761 Pantin Cedex – France
- by telephone at: +33 (0)1 40 14 80 17
- by fax at: +33 (0)1 55 77 34 17

2.6.4 Contact for Investor Relations and Financial Communications

Investor Relations Department

- Address: 27, avenue du Général-Leclerc – 92100 Boulogne-Billancourt – France
- Telephone: +33 (0)1 49 09 39 76
- E-mail: investor.relations@vallourec.com or actionnaires@vallourec.com

2.6.5 2019 Financial calendar (dates subject to change)

16 May 2019	Release of results for Q1 2019
23 May 2019	Shareholders' Meeting
24 July 2019	Release of results for Q2 and H1 2019
14 November 2019	Release of results for Q3 and 9M 2019

Presentation of Vallourec and its Group

Chapter 3

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3.1 History and development of Vallourec and its Group

The Vallourec Group is over 100 years old, with some Group companies having been established in the last decade of the 19th century. Vallourec originated in two regions of France, both with long manufacturing traditions, where the Group still has a significant presence: the Hauts-de-France region, around Valenciennes and Maubeuge, and the Burgundy region around Montbard, on the Côte-d'Or. Since the end of the 1990s and the creation of the joint venture between Vallourec and Mannesmann, the Group has also been widely established in the Düsseldorf region in North Rhine-Westphalia (Germany) and in the region of Belo Horizonte in the state of Minas Gerais, Brazil. In the first decade of the new millennium it strongly developed its positioning in North America and established itself in Asia. Also present in Africa and the Middle East, Vallourec is now an international group, operating close to its customers.

1886-1930: INVENTION OF THE SEAMLESS STEEL TUBE ROLLING PROCESS

In 1886, the Mannesmann brothers filed a patent that revolutionized the tube industry: thanks to a rolling mill with an oblique cylinder piercer, they were able to produce seamless steel tubes.

In the late 19th century, in France, tube manufacturers began to adopt the seamless tube manufacturing process that had been perfected by the Mannesmann brothers in Germany. The Société Métallurgique de Montbard was created in 1899 to take over Société Française de Fabrication des Corps Creux, which had operated a plant in Montbard since 1895. Listed on the Paris Stock Exchange since its founding in 1899, in 1907 it was renamed Société Métallurgique de Montbard-Aulnoye, which changed to Louvroil-Montbard-Aulnoye in 1937 after the takeover of Louvroil et Recquignies, itself a company resulting from a merger between Société Française pour la Fabrication des Tubes de Louvroil, founded in 1890, and Société des Forges de Recquignies, established in 1907.

1930: BIRTH OF VALLOUREC

The economic crisis prompted French tube manufacturers to join forces. The name Vallourec appeared for the first time as the name of a management company for tube plants in Valenciennes, Denain, Louvroil and Recquignies.

1957: LISTING OF VALLOUREC ON THE PARIS STOCK EXCHANGE

The Société des Tubes de Valenciennes and Société Louvroil-Montbard-Aulnoye merged. This Group became the second biggest manufacturer of steel tubes in France, and was listed on the Paris Stock Exchange under the name Vallourec.

1965: LAUNCH OF THE VAM® CONNECTION

A major innovation, the VAM® connection (named for Vallourec and Alexandre Madrelle, the engineer who developed the connection) revolutionized the oil industry. Thanks to unique mechanical features, it ensures complete sealing of the strings inside the well.

1976: INDUSTRIAL PARTNERSHIP WITH SUMITOMO

The development of the oil market prompted Vallourec to build industrial partnerships in order to meet its customers' demand worldwide. In 1976, Vallourec signed a licensing agreement with the Japanese group Sumitomo (the third largest producer of steel tubes worldwide) and created a joint venture with it in 1984 to produce and market VAM® connections in America. These agreements were the starting point for an ongoing collaboration.

1997: CREATION OF THE JOINT VENTURE BETWEEN VALLOUREC & MANNESMANN TUBES

Created in 1890, shortly after the Mannesmann brothers' revolutionary discovery of the seamless steel tube rolling process, Mannesmannröhren-Werke AG quickly became a world benchmark. The formation of Vallourec & Mannesmann Tubes, a joint subsidiary of Vallourec (55%) and the German company Mannesmannröhren-Werke (45%), allowed the two companies to offer their customers the widest range of tube sizes in the world.

2000: DEVELOPMENT IN BRAZIL

Vallourec & Mannesmann Tubes acquired the Brazilian subsidiary Mannesmannröhren-Werke, now known as Vallourec Soluções Tubulares do Brasil.

2002: STRENGTHENING OF THE GROUP'S PRESENCE IN THE UNITED STATES

Established since 1984 in the United States, the reference market for tubes for oil and gas well equipment (Oil Country Tubular Goods – OCTG), Vallourec has significantly strengthened its presence in the United States through the acquisition of the seamless steel tube activity of North Star Steel Company (North Star Tubes), which includes an electric steel mill and a tube mill in Youngstown (Ohio), along with a heat treatment and threading unit in Houston (Texas). Now called Vallourec Star, this company is 80.5% controlled by Vallourec Tubes and 19.5% controlled by Sumitomo Corporation.

2005: ACQUISITION BY VALLOUREC OF COMPLETE CONTROL OF VALLOUREC & MANNESMANN TUBES

Vallourec gained full control of Vallourec & Mannesmann Tubes through the acquisition of the 45% stake held by Mannesmannröhren-Werke for €545 million. This major transaction gave Vallourec full control over implementing the strategy of the joint venture.

2005-2006: STRENGTHENING OF THE DRILLING TUBE ACTIVITY

Vallourec acquired the assets of the Omsco Division of ShawCor in the United States (Houston). This acquisition allowed Vallourec to become the second largest drilling tube operator for the Oil & Gas market in the world. This position was strengthened in 2006 with the acquisition of SMFI (Société de Matériel de Forage International) in France. The activities were combined under the name Vallourec Drilling Products.

2006-2011: EXPANSION TO CHINA

In an effort to pursue its growth in the area of tube production for the Power Generation market, in 2006 Vallourec opened a subsidiary, Vallourec Changzhou Co., Ltd [(1)], which was established in Changzhou, China, specialized in the cold-finishing of large-diameter seamless alloy steel tubes, produced in Germany for power plants.

In the same year, VAM Changzhou Oil & Gas Premium Equipments was created to operate a mill in Changzhou for threading tubing to equip oil and gas wells. Production began in mid-2007.

In an effort to further strengthen its presence on the Chinese market, in 2011 the Group acquired 19.5% of Tianda Oil Pipe Company Limited (TOP), a Chinese manufacturer of seamless tubes, listed on the Hong Kong Stock Exchange. Under the terms of a cooperation agreement with TOP, VAM Changzhou Oil & Gas Premium Equipments threads premium tubes manufactured locally by TOP for the Chinese premium OCTG market.

(1) Since 18 August 2017, this company has been called Vallourec (China) Co., Ltd.

2008: ACQUISITIONS IN THE UNITED STATES

To strengthen its positions in products with high added value, Vallourec acquired Atlas Bradford® Premium Threading & Services, TCA® and Tube-Alloy from Grant Prideco. These companies are specialized, respectively, in the production of premium connections, the heat treatment of high-grade alloy steel tubular products, as well as the production and repair of accessories used inside oil and gas wells, and in complex threading operations. In 2009, Atlas Bradford® Premium Threading & Services and TCA® merged with VAM USA LLC and Vallourec Star respectively.

2009-2010: NEW TUBE PRODUCTION CAPACITIES FOR NUCLEAR POWER PLANTS

Valinox Nucléaire, a Vallourec subsidiary specialized in the manufacturing of steam generator tubes, invested in new production capacities in Montbard (Côte-d'Or, France) to meet the growing needs of the nuclear energy market. In order to assist in the strong growth of the Chinese nuclear fleet, Valinox Nucléaire also invested in a new production unit in Guangzhou, in the southeast of China.

2009-2010: DEVELOPMENT IN THE MIDDLE EAST

In 2009, Vallourec acquired DPAL FZCO, a drill pipe supplier established in Dubai (UAE). This acquisition allowed Vallourec Drilling Products to increase its presence in the Middle East and to supply local and international customers of the Group. In 2010, the Group acquired the Abu Dhabi (UAE)-based Protools, the biggest drill pipe accessories producer in the Middle East, thus enabling it to offer comprehensive solutions for the whole drill string.

2010: CONSOLIDATION OF THE PREMIUM SOLUTIONS OFFER

Vallourec acquired Serimax, the world leader in welding solutions for offshore line pipes. This acquisition supplemented Vallourec's activities in the area of offshore line pipes and allowed the Group to offer its customers integrated solutions.

2011: STRENGTHENING OF THE GROUP'S INDUSTRIAL PRESENCE IN BRAZIL AND THE MIDDLE EAST

In 2011, the new integrated joint industrial site for Vallourec & Sumitomo Tubos do Brasil was commissioned at Jeceaba, in the state of Minas Gerais, Brazil. This premium industrial site includes a steel mill, a tube mill, and a group of heat treatment, threading and finishing lines.

In the same year, Vallourec acquired Saudi Seamless Pipes Factory Company Ltd, the leading processing and finishing company for seamless OCTG tubes in Saudi Arabia. Vallourec thus became the leading player in the OCTG market to have local access to integrated heat treatment and threading facilities, to which it added a new threading line of VAM® connections.

2012: PARTICIPATING IN THE DEVELOPMENT OF UNCONVENTIONAL HYDROCARBONS IN THE UNITED STATES

Vallourec began operating a new premium small-diameter tube mill in Youngstown (Ohio), thereby covering a full range of products and services necessary for the production of all hydrocarbons, especially those relating to shale oil and gas.

2013: VALLOUREC, THE SINGLE BRAND FOR ALL COMPANIES OF THE GROUP

Since the formation of the joint venture Vallourec & Mannesmann Tubes, numerous entities of the Group operated under the V&M brand. In 2013, in an effort to contribute to strengthening its world leadership and assisting its growth strategy, Vallourec combined all of its entities under the same name: Vallourec, attesting to the complete consolidation of the numerous companies the Group has acquired worldwide.

2014: VALLOUREC IS BOOSTING ITS SALES IN AFRICA

Having established a presence in Angola via a service center since 2007, Vallourec opened a sales office in Nigeria and a premium tube threading plant in 2009. This presence led to the signing in 2014 of three major contracts in Africa for the supply of subsea line pipes and premium tubular solutions for use in highly complex deepwater offshore projects in Ghana, Nigeria and Angola.

2015: VALLOUREC DEPLOYS VALENS, ITS TWO-YEAR COMPETITIVENESS PLAN

At the beginning of 2015, Vallourec announced that it had launched "Valens," a two-year competitiveness plan aimed at cost reduction and cash flow optimization.

In parallel, Vallourec launched a streamlining process for its European steel tube production units.

2016: VALLOUREC ACCELERATES ITS TRANSFORMATION AND ANNOUNCES MAJOR STRATEGIC INITIATIVES

On 1 February 2016, Vallourec announced major strategic initiatives to transform its operational set-up, improve its competitiveness in the short and longer term, and reinforce its financial structure to secure long-term profitable growth and create value for its shareholders. Vallourec is thus streamlining its industrial footprint in Europe and Brazil, acquiring control of Tianda Oil Pipe in China, and has raised nearly €1 billion through a capital increase. These strategic initiatives are described in Section 3.6 "Transformation Plan" of this Registration Document.

2017: VALLOUREC IS CONTINUING ITS TRANSFORMATION

Throughout the period, Vallourec continued its transformation, notably through the establishment of a new organization structured around four regions and two central departments, and the rollout of new production. Vallourec also strengthened its liquidity profile by raising €800 million on the bond and convertible bond markets.

2018: DEPLOYMENT OF NEW COMPETITIVE ROUTES

In 2018, the deployment of the new production routes from China and Brazil allowed the Group to win a number of tenders in all geographic areas. In Brazil, the Group also renewed its long-term contract (three years) with Petrobras for the supply of premium OCTG tubes and services. The disposal of Vallourec Drilling Products, announced in late 2017, was finalized. Lastly, the Group also strengthened its liquidity with a €400 million bond issue in April. The significant events of fiscal year 2018 are described in detail in Section 3.5 "Significant events in 2018 and early 2019" of this Registration Document.

3.2 Description of the Group's business model and activities

3.2.1 Valllourec's economic model

3.2.1.1 General introduction to the Group

Vallourec is a world leader in premium tubular solutions, primarily aimed at the Oil & Gas, Industry, and power generation markets. With nearly 19,200 employees in late 2018, integrated production sites, state-of-the-art Research and Development (R&D) and a presence in over 20 countries, the Group offers its customers innovative global solutions tailored to the energy challenges of the 21st century.

Originally based in France and Germany, Vallourec now has frontline positions in the United States, Brazil, Europe, the Middle East and Asia. With more than 50 production units and finishing lines around the world, Vallourec has integrated sites combining steel mills and tube mills in the United States and Brazil.

The Group provides a wide range of premium tubular solutions – high-performance solutions whose manufacture requires significant technological and industrial expertise – in addition to related specialized services that provide customers with a complete range of innovative solutions to meet their strictest requirements.

The Group's offer includes:

- a range of seamless tubes that is among the most extensive in the world in terms of sizes and proportions (length, diameter, thickness) going up to 1,500 millimeters in outside diameter, with a variety of more than 250 grades of steel (high-grade and low-grade carbon steel alloys, stainless steels, nickel alloys, etc.);
- specialty tubes; and
- connections, including VAM® and accessories; and
- innovative and connected services.

The Group offers products and services for the following three markets:

- Oil & Gas: tubes, connections and connected services for exploration and operation of oil and gas fields, including the most complex ones. Vallourec offers a full range, which allows it to make use of all oil extraction options: shale, onshore and offshore;
- Industry (mechanical, automotive, and construction): lightweight and resistant tubes for a wide range of applications, hollow sections, tubes, and hollow bars for the automotive, mechanical or construction markets;
- Power generation: a wide range of tubes needed to build conventional and nuclear power plants.

Developments in these three markets in 2018, and the outlook for these markets going forward, are presented in Section 3.4 of this Registration Document.

AMBITION: TO BE THE INNOVATIVE AND AGILE PARTNER OF CHOICE FOR ITS CUSTOMERS

Vallourec's ambition is to be the innovative and agile partner of choice for smart and sustainable tubular solutions for its customers.

A partner of choice: a world player with leading regional positions, the Group aims to satisfy each customer at the lowest cost, thanks to a differentiated offer of products and services with high added value.

Agile: to respond to its customers' needs more and more quickly, Vallourec has reviewed its innovation policy to become more responsive and rapidly offer new solutions that meet market expectations. Furthermore, its regional presence allows it to offer its customers delivery and service time frames that address their concerns as much as possible.

Innovative: innovation is at the core of the Group's DNA, and is marked by the development of the most advanced products and connections. In order to continue to best respond to the expectations of its customers and markets, Vallourec's innovation strategy was expanded to the development of new products, services, as well as new business models. Developing digital in commercial offers is a key axis, marked by the launch of the smart services offering, Vallourec.smart, in 2018. This offering brings together the Group's physical and digital services.

To help it achieve this ambition, Vallourec has deployed a Transformation Plan since 2016, which involves:

- strengthening the Group's competitiveness thanks to a cost reduction program and to the rollout of new, very competitive production routes;
- optimizing its organization and processes;
- pursuing growth by developing a differentiated offer with high added value that meets its customers' needs; and
- increasing its presence in markets by offering the highest potential for growth in the Oil & Gas market: North America and South America, Middle East, and Southeast Asia.

In order to conduct its initiatives and successfully optimize the Group's process and organization, the Vallourec Transformation Office (VTO) team is in charge of implementing the tools for managing performance.

A DIVERSIFIED PRODUCT AND SERVICES OFFER AND A GEOGRAPHICAL FOOTPRINT THAT SERVE ITS CUSTOMERS

In order to be as close as possible to its customers and assist them in all of their development projects, in 2017 Vallourec established a regional organization around four main hubs: Europe/Africa, Middle East/Asia, North America, and South America.

The Group has a diversified customer portfolio and a global presence that allows growth opportunities to be achieved in each of its markets. Vallourec benefits from a balanced distribution of its revenue. The Group's top ten customers represented 37% of the total revenue in 2018 and the extremely balanced geographical distribution of the revenue demonstrates the Group's strong positions in its strategic markets. The distribution of revenue by market is presented in Section 3.2.2.1 of this Registration Document.

INNOVATION AT THE CORE OF THE GROUP'S DNA

Vallourec benefits from patented technology that gives it a strong competitive advantage: the VAM® connection, which ensures perfect sealing for tube columns in the equipment areas, makes the Group a leading manufacturer of seamless tubes.

Vallourec intends to maintain its technological progress, which allows it to anticipate its customers' needs. Innovation is at the heart of its growth strategy:

- Vallourec's customers want assistance in optimizing and securing their facilities. Vallourec responds to their expectations with full offers that have high added value, which integrate connected tubes and services;
- the Group innovates in the following areas: manufacturing processes, the development of new products, and the improvement of the performance of existing products, as well as rolling out new customer solutions and services.

The digital revolution has resulted in new possibilities for optimizing operations and making them more efficient, for the entire value chain, and in an increased demand from Vallourec's customers in all sectors for smart solutions of this type. Vallourec has already proposed connected solutions and is working to develop this offer to address its customers' concerns as closely as possible.

Vallourec is moreover preparing for energy transition by exploring how its products can be used in this context. Some of its products have already been incorporated into concrete applications, for example for geothermal plants, which require tubes with very demanding properties (corrosion, extreme heat conditions).

A RESPONSIBLE PLAYER

Vallourec has always integrated the highest standards of responsibility and requirements into its strategy, in terms of safety, quality, social or environmental policy: its process and the corporate social responsibility objectives it has set for itself are formalized in the Sustainable Development Charter and are described in the consolidated statement of non-financial performance, which was included in Chapter 4 of this Registration Document.

Vallourec is part of the Ethibel Sustainability (ESI) Excellence Europe index.

The Vallourec Group intends to play a part in energy transition. Its products and services are already in numerous applications for energy transition, and the Group participates in research onshore and offshore wind, solar, and hydrogen energies. The Group is studying development opportunities to meet the future needs of rapidly changing markets. The Group intends to support its customers as part of this transformation.

3.2.1.2 Products and services for the Oil & Gas market

Vallourec has expanded its offer to serve its customers thanks to the combination of standard and highest-performing products, enabling it to meet both the requirements of the least demanding environments as well as those of the most sophisticated applications in terms of pressure, temperature, and corrosion. The Group is developing a service offer associated with these products to improve operators' costs, ease product implementation, and increase the lifetime of facilities.

PRODUCTS FOR THE OIL & GAS MARKET

Vallourec offers a line of tubular solutions to the oil and gas industry that satisfies the strictest requirements and covers the entire chain of production, from exploration to production and transport of oil and gas.

The standard product ranges meet the API international standards and contribute, thanks to Vallourec's competitive offer, to reducing operators' costs.

The Group's premium product lines are adapted to the most challenging extreme and increasingly complex environments, such as:

- deep wells;
- corrosive environments;
- deviated and horizontal wells; and
- HP/HT (high pressure/high temperature).

The Group's products and services cover the entire production chain of the Oil & Gas sector: exploration, development and production, transport and processing:

- **OCTG:** Vallourec OCTG (Oil Country Tubular Goods) products are seamless threaded tubes that are found in a large number of oil and gas wells throughout the world (casing and tubing). The tubes are generally connected using premium threaded VAM® connections, which are trademarked by Vallourec;
- **transport and processing:** gas and oil are transported from the well to the processing units, whether offshore or onshore, using Vallourec tubes and accessories. Its stainless steel, super duplex welded tubes for umbilical applications connect seabed equipment to the control station at the surface.

Tubes and accessories for the Oil & Gas market

For production phases, the Group offers OCTG products, which are threaded tubes designed for oil and gas well equipment. The OCTG products produced by the Group include casing, which consists of tubes that are assembled using sealed connections to form a column supporting the walls of an oil or gas well. The Group also offers tubing, consisting of steel tubes, smaller in diameter, assembled using leak-tight connections to form a production string used to lift the fluids produced from the bottom of the well towards the surface.

The sealed assembly of OCTG premium tubes relies on VAM® connections offered by the Group (described below in the section on VAM® Connections). These connections have technical characteristics that enable them to withstand the strong forces that the OCTG products are subjected to under extreme conditions.

OCTG activities are being developed in Europe, Africa, the Middle East and Asia, as well as in North America and South America. Each region integrates tube rolling, heat treatment and threading facilities.

VAM connections®

VAM® connections, used for Oil & Gas activities, are premium threaded connections invented and patented by Vallourec. They provide tubes with connections that are resistant to pressure and compression and ensure a perfect seal.

The development of the VAM® connections is a joint activity of Vallourec and Nippon Steel Corporation (NSC, formerly NSSMC). This cooperation, which has allowed the VAM® brand to become a world leader on the OCTG market, is still as dynamic as ever and allows it to offer solutions that are best adapted to oil and gas operators' needs.

Since the first VAM® patent, which Vallourec filed in 1965, more than 30 VAM® product lines have been put on the market; specific developments have been added, which meet the most varied requirements. This offer particularly includes:

- VAM® 21: available in diameters of $3^{1/2}$ to 14 inches (approximately 10 to 35 centimeters). This innovative connection has become the new leading product. As resistant as the tube itself, it was the first to offer performance meeting the CAL IV standard defined in the most recent changes to ISO 13679 and API RP 5C5, two technical specifications required by oil customers. The product line is constantly being supplemented by other versions that meet operators' specific needs: higher torque capacity, development of thick tubes, etc.;
- VAM® HTTC (High Torque Threaded and Coupled): designed for strongly deviated wells with long horizontal sections, the VAM® HTTC premium connection for casing and tubing resists extreme torques and compressions when the column is installed and maintains a perfect seal during production phases. Available in various dimensions, the premium VAM® HTTC connection is a high value-added product that makes the most complex horizontal drilling both possible and secure; In 2018, VAM HTTC performance was demonstrated in a critical project in Saudi Arabia ("Extended Reach Drilling" application);
- VAM® SG and VAM® EDGE SF: the Group is very involved with non-conventional oil and gas deposits in the United States and has developed connections to address these highly specific needs. VAM® SG is a premium connection for wells with average length horizontal sections (2,000 to 5,000 feet). VAM® EDGE SF, qualified in 2013, is a premium connection adapted to longer horizontal sections (up to 10,000 feet). Its technical characteristics are perfectly tailored to this type of drilling, in particular boasting better resistance to tension and to high torque, as well as gas tightness in compliance with the strictest ISO standards;
- VAM® BOLT is a premium integral connection for large-diameter casing. Its mechanical integrity and seal make it especially well-suited to high-pressure, high-temperature deepwater offshore wells, which are common in the Gulf of Mexico, off the Brazilian coast and in the Gulf of Guinea, as well as in North Africa and the Asia Pacific region;
- Vallourec has expanded its high-performance integral connections offerings with the development of the VAM® SLIJ 3, which was successfully used for the first time in the Gulf of Mexico;
- in 2018, the Group pursued an ambitious research and industrialization program on Cleanwell®, a dry coating applied to VAM® connections, which provides grease-free lubrication and protects the threading from corrosion during transport and storage. The second generation of Cleanwell® technology, launched on the market in 2016, was used in 2018 in several regions in the world (North sea, West Africa, and Egypt), with great success by the various users: improved safety conditions on drilling platforms, shorter installation time, and decrease in waste. To meet the demand, the construction of an industrial line capable of producing the third generation of Cleanwell®, which is even more high-performing, in larger quantities, was initiated in France for a 2019 launch.

To make the VAM® range a leader in premium joints, Vallourec consolidated coordination of the Research and Development Departments involved with this product line under Vallourec Oil & Gas France, with R&D branches close to the major OCTG markets in the United States (VAM USA in Houston) and Brazil (VSB in Belo Horizonte). Support for the VAM® product lines worldwide is provided by a broad network of local licensees close to our customers' operations.

The Group also continued to develop its site services network, which provides worldwide coverage from service centers based in Scotland, the United States, Mexico, Singapore, China, Angola, Nigeria and the Middle East. Since 2008, Vallourec has also produced petroleum accessories related to the VAM® joint through its subsidiary Vallourec Tube-Alloy, LLC (USA). This expertise is deployed in Mexico, Brazil, France, Singapore and Indonesia to provide, as a complement to its network of licensed partners, global coverage for accessory requirements to meet customer needs for the VAM® joint.

Development of high-performance steels for OCTGs

To combat corrosion in oil and gas wells, major research programs are underway to create high-tensile carbon steels resistant to H_2S (hydrogen sulfide) corrosion. A program is also underway to develop CRAs (Corrosion-Resistant Alloys) and chrome alloys for the most critical corrosive conditions. These developments require significant testing resources, which the Group has doubled over the last three years.

Tubes and accessories for transportation of oil & gas

The Group's product line for transportation includes the following:

- rigid subsea line pipes (production and injection lines known as flowlines, which are pipes that rest on the seabed for the transport of production or injection fluids, and risers, which bring fluids up from the wellhead to the surface and then connect them to processing units);
- onshore rigid line pipes;
- specialized tubes for umbilicals, through its subsidiary Vallourec Umbilicals – France, which manufactures and sells super duplex welded (stainless steel) tubes for umbilicals, which are structures comprising tubes, cables and/or optical fibers that are used to connect seabed equipment to a control station at the surface for applications in the offshore oil industry; and
- process tubes.

Tubes for the processing of industrial fluids and hydrocarbons

The Group offers a wide range of carbon steel and steel alloy tubes, as well as hollow bars (semi-finished tubes for later processing into a product that meets the needs of a specific market) and connections adapted to the needs of each project.

In particular, for petrochemicals, the Group is a supplier of seamless tubes for refineries, petrochemical facilities, floating liquefied natural gas (LNG) plants, and production, storage and offloading units (FPSO).

SERVICES FOR THE OIL & GAS MARKET

To respond to the needs of its customers (operators, engineering firms, and distributors) in terms of efficiency, cost and integrity, Vallourec services has increased its offerings to include innovative solutions tailored to specific project needs, such as on-site offshore and onshore welding, coating, bending, and complex project management.

As a result, Vallourec offers a series of services to its customers through "Vallourec Global Solutions," which assists customers and provides them with the benefit of Vallourec's know-how throughout the lifetime of the facility. They include:

- the VAM® Field Service offering, which includes more than 160 technicians and engineers in 17 locations throughout the world, available 24 hours per day at the well site to assist customers in lowering tubes, inspecting connections, and supervising assembly. Furthermore, the Group has entered into partnerships with more than 200 licensees to repair Vallourec products and thread tubes with VAM® on all oil accessories;
- inventory management, in which Vallourec's logistics engineers can manage, at the customer's request, their tubular product inventory and coordinate the preparation of tubes to be sent to the platform;
- advisory services in which Vallourec provides guidance including with respect to well design. Vallourec experts recommend the best tailored tubing and casing (in terms of sizing and steel grade) to customers and the connections that best respond to the requirements of the well;
- training sessions in which "Tubular Essentials" are provided by the Group's experts to teach operators best practices for optimal use of tubes and connections, handling, and inventory management.

The Group proposes a series of tailored services grouped within the Vallourec™.smart offering, adapted to the customer's needs including tube inspection, maintenance and repair, on-site services, preparation for drilling operations, and well coordination and supply based on the drilling plan. For example, Vallourec has delivered deepwater offshore projects in which it managed execution of all of the tube production, coating, welding, and manufacture of the line pipe to be installed in the water.

The Group also offers specific integrated solutions for the subsea line pipe market, including welding, coating, insulation, logistics and service agreements that may be specifically entered into depending on the customer's needs. In partnership with a thermal insulation specialist, Vallourec provides line pipes using pipe-in-pipe technology, in which the line pipe is covered with an insulating, high-performance material and then inserted into another tube. This technology keeps oil and gas at the proper temperature to ensure that it flows properly during transport from the wellhead to the production platform.

In addition, the Group offers tube coating and welding services on site, primarily through the following subsidiaries:

- Serimax – France, a global leader in integrated welding solutions for offshore line pipes, with an international presence consisting of service units close to project sites. Serimax relies on its new welding research centers in order to develop joint research programs with its customers and to respond to projects' increasing technical requirements;
- Serimax Field Joint Coating – UK, which carries out coating activities on the end-to-end welded section of line pipes both onshore and offshore on installation vessels, complementing the welding solutions offered by Serimax.

3.2.1.3 Products and services for other markets

The Group offers complete solutions for the power generation market and for the industrial market (mechanical, automotive and construction).

PRODUCTS AND SERVICES FOR THE POWER GENERATION MARKET

Vallourec's tube portfolio for the Power Generation market is one of the largest in the world. For conventional thermal power plants, new generation "ultra-supercritical" coal-fired powered plants, or nuclear power plants, Vallourec responds to the different needs of power producers.

The Group offers its customers seamless tubes for boilers and steam generators, in all sizes and all grades, from carbon steel to nickel alloy, through high alloy steel. The tubes cover all the carbon steel grades required in power plants and the entire size range, from small diameters for boiler tubes to very large diameters for steam pipes.

Vallourec's products respond to the challenges of power producers, and the Group's services support their performance, from logistics to risk assessment and customer-specific training.

The reduction in the number of thermal power plants under development in Asia in 2018 led to a drop in the demand for tubes for these applications. Given this long-term drop, the Group announced on 20 February 2019 that it had initiated a plan to sell assets dedicated to conventional coal-fired power plants. The Group is looking for a partner for the Power Generation activities devoted to conventional coal-fired power plants, which includes the plants of Reisholz (Germany) and VCHA (China).

Vallourec also participates in various innovation projects concerning renewable energies, such as, for example, offshore wind, solar or hydrogen energy.

PRODUCTS AND SERVICES FOR THE INDUSTRIAL MARKET

Products offered to customers in the industrial market are designed for highly varied mechanical, automotive and construction uses. The Group produces tubes, hollow bars (semi-finished tubes for subsequent processing into products meeting the needs of a specific market), and sections (circular, square, rectangular or octagonal sections for a vast array of applications), in all sizes and grades of steel. Its offerings respond to the needs of the most varied and demanding industrial applications with special grades of steel.

Vallourec's premium tubular solutions are found in much infrastructure construction: bridges, stadiums, industrial and logistics buildings, airports and other ambitious architectural projects. The mechanical industry uses Vallourec's tubes and rings to manufacture cranes, construction machinery, agricultural machinery, and hydraulic cylinders. Automotive manufacturers equip their heavy-weight and light-weight vehicles with the tubes and axles produced by the Group.

IRON ORE PRODUCTION

In Brazil, the Group extracts iron ore in its Pau Branco mine, in Minas Gerais State, 30 kilometers south of Belo Horizonte. Its annual production capacity is around 4.5 million tons of iron ore, and an expansion of this capacity is being studied. The mine supplies the blast furnaces and the pellet plant of its affiliates and also markets it production.

3.2.2 Markets and customers

3.2.2.1 Vallourec's markets

The Group's principal market is the Oil & Gas and Petrochemicals market, representing 71.7% of the Group's revenue in 2018. The table below shows the breakdown of the Group's revenue by market in 2017 and 2018.

In € million	2017	% of revenue	2018	% of revenue
Oil & Gas	2,299	61.3%	2,469	62.9%
Petrochemicals	268	7.2%	344	8.8%
Total Oil & Gas and Petrochemicals	**2,567**	**68.5%**	**2,813**	**71.7%**
Mechanicals	368	9.8%	469	11.9%
Automotive	144	3.8%	148	3.8%
Construction & other	263	7.0%	202	5.2%
Industry	**775**	**20.6%**	**819**	**20.9%**
Power Generation	**408**	**10.9%**	**289**	**7.4%**
TOTAL	**3,750**	**100.0%**	**3,921**	**100.0%**

For an analysis of changes in the market, see Section 3.4 "Market environment" and for an analysis of the variation in the Group's revenue by market, see Section 3.7, "Results of operations" of this Registration Document.

The distribution of revenue by receiving geographic area in 2018 is presented in Section 3.7 "Results of activities" of this Registration Document.

3.2.2.2 Principal customers

The Group's largest customers include:

- in the Oil & Gas market, international oil companies (such as Total, Chevron, ExxonMobil and Shell), national companies (such as Saudi Aramco, Adnoc, Petrobras or Sonatrach), private independent companies, American distributors (such as B&L Pipeco, Premier Pipe, Champions, Pyramid or MRC Global), oil service companies (such as Halliburton, Baker Hughes and Schlumberger), as well as engineering and construction companies (such as Subsea 7 and TechnipFMC);
- in the Power Generation market, European and Asian suppliers of boilers and equipment (for example Dong Fang, Doosan, Valmet and Framatome); and
- in the Industry market, European and international distributors and manufacturers of industrial equipment (for example ThyssenKrupp, Hoberg & Driesch, Salzgitter, Van Leeuwen and Buhlmann).

In certain geographical markets, and in particular in the United States and in Germany, the Group's principal customers are distributors. In the rest of the world, the Group's customers are end-users.

In 2018, the Group's ten largest customers represented 37% of consolidated revenue, and the five largest customers represented 25% of consolidated revenue.

3.2.3 Information on the competitive position of the Company

The information below is broken down into the various markets in which Vallourec participates. It is based on the Group's internal analyses and constitutes its own estimates.

See paragraph "Risks related to competition" of Section 5.1.1 of this Registration Document.

3.2.3.1 Oil & Gas

Vallourec operates in two markets: threaded seamless tubes for the equipment of oil and gas wells used for exploration and production (OCTG), and the offshore and onshore line pipes for oil and gas transportation:

- in the OCTG market, Vallourec is among the world's leading suppliers of premium products in terms of volumes delivered:
  - in the market for premium connections that satisfy demanding technical performance criteria, the VAM® ranges produced in cooperation with Nippon Steel Corporation (NSC, formerly NSSMC), is the world leader,
  - the Group's main competitors in the OCTG market are Tenaris, NSC, JFE, US Steel Tubulars, TMK, TPCO and Voest Alpine Tubulars;

- Vallourec is one of the three major players in the offshore line pipe market for premium seamless tubes, with Tenaris and NSC:
  - the Group has a strong position in deep water (over 500 meters) projects, which require high-tech products,
  - Vallourec also has a presence on the onshore line pipe segment,
  - through its subsidiary Serimax, Vallourec has also positioned itself as the world leader in welding and coating solutions for both offshore and onshore line pipes,
  - moreover, Vallourec is offering a premium line of welded super duplex steel tubes that can be fitted into umbilicals at offshore oil and gas fields. The first tubes were successfully assembled in 2016 for a project in the North Sea (Glenlivet project, Scotland). In 2018, tubes were delivered for a project along the Angola coast (project Block 15/06, Angola), in the Okhotsk sea (project Kirinskoye, Russia) and in the Gulf of Mexico (project Who Dat, United States).

3.2.3.2 Petrochemicals

Vallourec is a supplier for several applications: seamless tubes for refineries, petrochemical facilities, floating liquefied natural gas (LNG) plants, and production, storage and offloading units (FPSO): Vallourec is a significant market player, its main competitors being Tenaris, ArcelorMittal, NSC (formerly NSSMC) and Chinese groups.

3.2.3.3 Power Generation

Vallourec is a global leader in this segment, offering a large range of tubes, product sizes and steel grades (including patented grades). The Group is a supplier for several applications:

- seamless carbon and alloy steel tubes, mainly for thermal power plants: water panels, header pipes, economizers, evaporators, superheaters, reheaters and piping. Its main competitors are Baosteel, Changbao, Hengyang and Norinco;
- nickel-alloy seamless tubes for steam generators at nuclear power plants: in these very technically demanding markets, Vallourec's market share significantly outdistances those of its two main competitors, NSC and Sandvik.

3.2.3.4 Industry and Other

MECHANICALS

Vallourec is one of the European leaders in seamless tubes for mechanical engineering applications. This market is characterized by:

- a wide range of applications: tubes for hydraulic cylinders, construction and civil engineering cranes, agricultural machinery, construction and mine exploitation machinery, industrial building frames, public facilities, and oil rigs, etc.;
- competition from numerous technical alternatives: welded tubes, drilled steel bars, cold-drawn tubes, forged and formed tubes, etc.

AUTOMOTIVE

Vallourec provides a wide range of products for the automotive industry, such as axle tubes and gearbox applications. Thanks to its subsidiary Vallourec Bearing Tubes, Vallourec is a leader in the European market for ball-bearing rings manufactured from seamless tubes.

In Brazil, Vallourec Soluções Tubulares do Brasil is the market leader for seamless hot-rolled, cold-formed, forged or drawn tube manufacturing. The products from Vallourec Soluções Tubulares do Brasil have numerous industrial applications for various market segments such as light and heavy vehicles, and two-wheel vehicles, primarily for transmission and steering systems, as well as for construction and agricultural equipment and machinery.

CONSTRUCTION

Vallourec is an important supplier of seamless and streamlined tubes for construction projects. It provides solutions for civil constructions such as concourses, stadiums, museums, or other infrastructure such as bridges, as well as solutions for offshore projects, in particular offshore oil and gas platforms.

In Brazil, Vallourec Soluções Tubulares do Brasil also offers standard or formed seamless tubes for the construction of bridges, stadiums, airports, power lines, foundations for walkways, and other infrastructure projects.

3.2.4 The Group's facilities

The teams and production of premium Vallourec solutions are positioned where the customers are. The Group thus has more than 50 production units throughout the world. As at 31 December 2018, its facilities included:

- 4 steel mills, including two in Europe in which the Group holds a minority interest (40% of Ascoval [1] in France and 20% of HKM in Germany), one in the United States and one in Brazil;
- 14 tube mills in Europe, the United States, Brazil and Asia;
- 6 Research and Development centers, described in Section 3.3 below;
- 25 finishing units;
- numerous sales offices and service centers located near our customers; and
- a group of forest assets and an iron mine in Brazil.

(1) *The assets of the Ascoval steel mill (40% held by Vallourec and 60% by Asco Industries) were the subject of a bid by the Altifort Group. The takeover plan was approved by a court decision dated 19 December 2018, effective 1 February 2019. It was then cancelled by a subsequent decision on 27 February 2019. The company Ascoval is currently awaiting the outcome of the insolvency procedure.*

The Group benefits from rolled tube production capacities of nearly 3 million metric tons, relatively balanced across its four operating regions:

Rolled tube production capacities by region

Europe	~25%
North America	~25%
Brazil	~30%
China	~20%

3.2.5 Procurement

3.2.5.1 Raw materials and purchasing

The Group's purchases for production activities are broken down as follows:

- raw materials (ferrous alloys, electrodes, refractories, scrap steel, etc.);
- pre material (roundbars, flat products, etc.);
- manufacturing consumables and supplies (mechanical and electrical supplies, cutting tools, lubricants, thread protectors, etc.);
- maintenance (services and spare parts); and
- energy (electricity, natural gas, etc.).

Purchases consumed for the production in fiscal years 2017 and 2018 included the following:

In € thousand	As at 31/12/2018	As at 31/12/2018
Scrap metal and ferrous alloys	409,470	483,663
Rounds/billets	605,383	504,343
Flat parts	4,227	-
Tubes	91,786	112,626
Miscellaneous [(a)]	501,957	591,704
TOTAL [(b)]	**1,612,823**	**1,692,336**

(a) Including changes in inventories.

(b) Including €1,485 million (2018) and €1,369 million (2017) of raw materials classified under Cost of raw materials consumed. The balance is composed of miscellaneous purchases (consumables, tools, etc.) classified in Other industrial costs.

The purchase of rounds and billets represented 30% of the Group's consumed purchases in 2018, and the purchase of tubes represented 7%.

Other purchases include the following purchases:

- non-production:
  - external services (engineering, temporary labor, waste treatment, industrial cleaning, etc.),
  - IT (software, hardware, network, professional services, etc.), and
  - logistics (sea, air, road, rail, warehousing, etc.);
- solutions:
  - major equipment infrastructure and investments, and
  - customer-specific solutions.

For a description of the risks related to changes in the prices of raw materials, see Chapter 5, "Risk and risk management" of this Registration Document.

3.2.5.2 Sourcing policy

The Group has implemented a structured, consistent purchasing strategy providing a balance between central management and local guidance:

- use and continued improvement of effective, formalized purchasing processes to optimize the Group's performance in terms of quality, cost, and delivery times;
- together with the Group's internal customers, selection of the best suppliers on the basis of business line needs, purchasing strategies by area, supplier risk analysis and criteria approved before the calls for tender are launched;
- sharing a solid contractual approach with all of the Vallourec entities that takes local characteristics into account to limit risks, ensure compliance with global directives and improve visibility;
- sharing a common and global approach and monitoring suppliers to continuously improve the Group's performance in terms of quality, cost and delivery times, as well as social and environmental responsibility;
- identifying and minimizing the supplier risks borne by the Group under its ongoing responsible purchasing policy;
- the purchasing function is centralized regionally or globally according to purchasing family, whenever pertinent. Supply is primarily managed locally and has gradually merged into the regional shared services centers.

3.2.6 Organization of the Group

3.2.6.1 Valloure c Group organization chart as at 31 December 2018

VALLOUREC

100%

VALLOUREC TUBES

EUROPE / AFRICA (EA)

FRANCE

100%	Vallourec Bearing Tubes
100%	Vallourec Oil and Gas France
100%	Vallourec Tubes France
51%	Vallourec Umbilicals
80%	Serimax Holdings

REST OF EUROPE

100%	Vallourec Deutschland GmbH (Germany)
100%	Vallourec Oil & Gas UK (United Kingdom)
100%	Vallourec Rus (Russia)
50.1%	Vallourec Niko Tube Holding GmbH (Germany)
20%	Hüttenwerke Krupp Mannesmann (Germany)

AFRICA

100% (1)	VAM Field Service Angola, LDA (Angola)
100%	Vallourec Nigeria Limited (Nigeria)
100%	Vallourec Oil and Gas Kenya Limited (Kenya)
100% (1)	Vallourec O & G Nigeria Limited (Nigeria)
100%	Vallourec Oil and Gas Uganda (Uganda)

MIDDLE EAST / ASIA (MEA)

MIDDLE EAST

75%	Vallourec Al Qahtani LLC (Saudi Arabia)
100%	Vallourec Middle East FZE (United Arab Emirates)
80%	Vallourec Saudi Arabia LLC (Saudi Arabia)

CHINA

99.6%	Vallourec Tianda (Anhui) Co., Ltd (2)
100%	Vallourec (Beijing) Co., Ltd
100%	Vallourec (China) Co., Ltd
100%	Vallourec Oil & Gas (China) Co., Ltd
100% (1)	VAM Changzhou Oil & Gas Premium Equipments Co., Ltd
51%	VAM Field Service Beijing Co., Ltd

REST OF ASIA

81.7% (1)	PT Citra Tubindo TBK (Indonesia)
100%	Vallourec Asia Pacific Corp. Pte Ltd (Singapore)
51%	VAM Far East (Singapore)

SPECIALTY TUBES

100%	Valinox Nucléaire (France) (3)
100%	Valinox Nucléaire Tubes Guangzhou Co., Ltd

NORTH AMERICA (NA)

OCTG

100%	Vallourec Canada Inc. (Canada) (4)
100%	Vallourec Oil & Gas Mexico, SA de CV (Mexico)
80.5% (1)	Vallourec Star, LP (United States)
100% (1)	Vallourec Tube-Alloy, LLC (United States)
51% (1)	VAM USA LLC (United States)

MARKETING COMPANIES

100 %	Vallourec Canada Inc. (Canada) (4)
100 % (1)	Vallourec USA Corp. (United States)

SOUTH AMERICA (SA)

BRAZIL

84,6% (1)	Vallourec Soluções Tubulares do Brasil S.A.		
100%	Vallourec Tubos do Brasil Ltda		
		100% (1)	Tubos Soldados Atlântico Ltda
		100%	Vallourec Florestal Ltda
		100%	Vallourec Mineração Ltda
		100%	Vallourec Transportes e Serviços Ltda

OTHERS

100%	Vallourec Trading South America (Uruguay)

(1) Percentage of Group's direct and/or indirect interest.
(2) Formerly Anhui Tianda Oil Pipe Co. Ltd.
(3) Valinox Nucléaire is associated with the Middle East/Asia Region.
(4) Vallourec Canada Inc. performs both OCTG and marketing activities.

3.2.6.2 Organization of Group activities

Following the establishment of its Transformation Plan and to best serve its customers worldwide, since April 2017 the Group has adopted and deployed a new organization with two central departments – Development & Innovation (D&I) and Technology & Industry (T&I) – and with four main Regions: Europe/Africa (EA), Middle East/Asia (MEA), North America, and South America:

- the Regions are responsible for all of the sales and industrial operations located within their geographic scope;
- the Development & Innovation Department (D&I) is responsible for defining and implementing the development strategy for product lines. It is also responsible for innovation and R&D;
- the Technology & Industry (T&I) Department is responsible for defining the Group's industrial strategy, with the aim of continuing to improve its cost base. It is in charge of technology and manages the Group's supplies, as well as central planning.

The goal of this organization is to strengthen the Group's local presence and proximity to its customers, to optimize overall use of its resources, and stimulate its development.

In addition to its operating entities, the Group also includes holding and marketing companies.

TECHNOLOGY & INDUSTRY

The Technology and Industry Department (T&I) includes the various business lines of the Industrial Division in charge of the Group's strategy and performance with respect to safety, quality, customer service, know-how and performance in key technologies, production cost optimization, procurement and logistics. T&I is in charge of the Group's industrial strategy and with the Regions determines changes in its industrial system. It manages the investment portfolio and makes sure investments are properly carried out from a technical standpoint, within the prescribed time limits and economics conditions.

It is structured in eight "business line" departments that interact with one another and coordinate the activities of the Regions defined in the industrial plan:

- the **Safety/Quality Department** defines the policy, objectives and methodologies of the Group in terms of improving Safety performance (accident frequency rate), the Quality perceived by the customer (number and processing of claims), approval/certifications and regulatory requirements;
- the **Lean Management & Maintenance Department** coordinates the establishment of competitiveness improvement plans for the Regions through the "CAP20" Group initiative, and prepares and deploys the Group's Operational Excellence guidelines, relying on lean management methodologies. It is also in charge of the Group's industrial equipment maintenance policy, and the associated improvement processes;
- the **Industrial Layout/Masterplanning Department** conducts strategic studies that are associated with the Group's industrial plan, along with the transformation studies of the industrial system. It is also in charge of strategy, and of deploying the industrial digital plan ("Industry 4.0");
- the **CAPEX/Projects/Engineering Department** manages the investment portfolio under the strategic plan and the annual budget process, and is in charge of the process of qualifying and authorizing investment projects. It is also in charge of project and engineering management methods for the Group as a whole, as well as for the development of know-how concerning automated technologies. It participates in the operations of major investment or M&A projects;
- the **Sourcing Department** is in charge of all of the Group's purchasing. It defines and coordinates purchase policies, and the operational teams based in the Region that relate to it from a hierarchical standpoint;
- the **Supply Chain Department** is operationally in charge of preparing the medium-term production and of determining allocations of orders and management of production capacities at the Group level (Sales & Operation planning). It defines the policies, objectives and methodologies for improving delivery performance (punctuality, lead times) and logistics (service, costs);
- the **Technology & Performance Upstream Department** is in charge of monitoring and improvement of the technical performance of production tools, and of their technological development (Research and Development on processes) in the areas of steel manufacturing, rolling, heat treatment and non-destructive testing. It is also in charge of the industrialization methods and plan for tubular products, and for promoting digital industry ("Industry 4.0") among the Regions and their industrial sites;
- the **Technology & Performance Downstream Department** is in charge of monitoring and improvement of the technical performance of production tools, and of their technological development (Research and Development on processes) in the areas of tube finishing, threading and "Dopefree" (Cleanwell®) technologies applied to VAM® connections. It is in charge of the industrialization of VAM® products for all of the Group's threading sites.

DEVELOPMENT AND INNOVATION

The Development and Innovation Department (D&I) comprises the Group's various Product Line departments and the various businesses serving to develop them: marketing, sales, technical promotion and innovation, Research & Development, industrial property.

D&I is in charge of the strategy of developing product lines and defines the Group's objectives with the regions for developing new markets, optimizing the product portfolio, the customer portfolio and in particular major accounts, Research & Development, innovation to expand Vallourec's cornerstones for differentiating itself and creating value in customer solutions (including digital).

D&I manages the product development and services portfolio and makes sure they are put on the market within the time limits and at the performance levels expected to successfully create the expected value.

It is structured in three product lines that interact with the regions and coordinate development activity across the Company. The product line directors are supported by the Innovation and Research and Development Department. The action plan is defined by Product Line and supported by several cross-company roadmaps which cover the various areas of Commercial Excellence and excellence in Innovation.

The Product Line Departments cover all of the Group's markets, *i.e.*:

I. OCTG and Accessories

- **OCTG** (Oil Country Tubular Goods), which comprises the casing and production tubes used to construct onshore or offshore Oil or Gas production wells. This segment includes the VAM® range of joints, as well as the entire VAM® system, which includes: teams of construction engineers capable of assisting our customers with their rigs 24/7 (VAM® Field Services International); the network of approximately 200 VAM® licensees, audited annually, who provide maintenance and repair services for VAM® joints worldwide as close as possible to the operating areas; the VAM® Global Solutions engineer teams providing assistance in well design, product training, and assistance in supply chain optimization for our customers until the service contracts have been implemented.

- **Accessories** comprise all products, mainly Oil & Gas, that are designed and manufactured by Vallourec, integrated into the production strings and necessary for optimizing production of oil or gas wells.

II. Line Pipe Project

- The **Line Pipe Project** linked to EPCI (Engineering, Procurement and Construction, and Installation) markets comprises the tubes, expertise and integrated solutions used to connect all of the offshore and onshore facilities of an oil field from the wellhead to the platform or production vessel, as well as the tubes needed to connect these production facilities to the onshore refining and treatment facilities.

III. Specialties

- The **Line Pipe Process** comprises the tubular products in which the hydrocarbons are transported or transformed, both in offshore operations (FPSO: Floating Production Storage and Offloading/ Floating Liquefied Natural Gas (FLNG)) and onshore (Liquefied Natural Gas (LNG), refining, petrochemical).
- **Industry** comprises a wide variety of industrial applications: agricultural machinery, cylinders, cranes, construction (offshore, bridges, stadiums, etc.), mechanical industries.
- The **Conventional Thermal Power Plant Market** (1) using carbon or gas in a combined cycle comprises all of the tubes provided for the construction of boilers, exchangers and tubes for the circulation of steam up to the turbines.
- The **Thermal Power Plant Market using nuclear energy** concerns tubes of steam generators for the primary circuit, as well as the tubes for supplying steam to the turbines.
- **Renewables** comprises all of the applications for which we market our products (geothermal, biomass, etc.) and/or for which we are seeking development opportunities (in addition to the previous applications, this concerns solar, biofuels and hydrogen).

The functions supporting the Product Line Departments include:

- the **Marketing Strategy Department,** which is in charge of anticipating the development of our markets to help the Group's Product Lines adapt their offers and evaluate opportunities to diversify;
- the **Key Accounts Department,** which is in charge of optimizing the commercial development of the Group's key accounts for all of the regions and all of the product lines;
- the **Research and Development Department,** which includes all of the Group's resources and laboratories in France, Germany, Brazil and the United States. It is in charge of developing the high-performing products and processes needed to develop Vallourec's customer offerings within the prescribed time limits and budgets. It takes steps to capitalize on the Group's know-how in Research and Development of internal skills. It also develops partnerships with companies or universities that are able to provide us additional expertise and participates in numerous Joint Industry Programs (JIPs) to develop adapted solutions with our customers;
- the **Innovation Department,** which is in charge of accelerating the diversification of Vallourec's offer by helping product lines to expand proposed value to services, thanks to the evaluation of new business models, particularly in relation to Digital. It is in charge of identifying the growth catalysts that can be envisaged beyond the heart of the Group's current business;
- the **Industrial Property Department,** which is in charge of technical oversight, the filing of patents, and defending the industrial property of the Group. In 2018, the Group filed 23 patents.

EUROPE/AFRICA REGION

The historical and technological cradle of the Group, the Europe/Africa Region serves all of Vallourec's markets from its production and service units. The industrial activity includes the rolling mills, heat treatment plants, finishing and specialties units.

The business activities of the Europe/Africa Region aim to ensure the satisfaction of its customers by providing them with a wide range of products that meet their expectations at a competitive price. The Region also supplies Vallourec's other Regions and can sell their products in its own geographic area to help develop the Group's global activities in its various markets.

The business relies among other things on the complementarity between Vallourec Tubes France – France (100%), which operates heat treatment plants in Déville-lès-Rouen (Seine-Maritime), Saint-Saulve (Haut-de-France) and a forge in Aulnoye-Aymeries (Haut-de-France), and Vallourec Deutschland GmbH – Germany (100%), which operates four tube mills in Mülheim, Düsseldorf-Rath and Düsseldorf-Reisholz (North Rhine-Westphalia). The tube mills are equipped with continuous-process, plug and pilger rolling mills and Erhardt presses, allowing them to manufacture, with the Aulnoye-Aymeries (Haut-de-France) forge and the Montbard (Côte-d'Or) rolling mill, products with one of the world's widest range of diameters, thicknesses and grades of steel, in addition to offering finishing operations.

All of the European rolling mills are primarily supplied with raw materials from European steel mills, and in particular, as concerns ordinary steels, by the Huckingen mill in Hüttenwerke Krupp Mannesmann (HKM), in which Vallourec Tubes has a 20% stake in the capital.

In addition to continuing to implement the Group's Transformation Plan launched in 2016, for which one of the major components was streamlining production capacities in the Europe/Africa Region, at the end of 2018 Vallourec began a major savings plan to restore the competitiveness and profitability of its German activities. The new program includes a significant reduction in staff, a reduction in costs (raw materials, industrial, administrative and sales) and the optimization of production flows.

See Section 3.6 "Transformation Plan" below.

(1) The number of coal-fired thermal power plant products under development was reduced in Asia in 2018, leading to a drop in the demand for tubes for these applications. Given this long-term drop, the Group announced on 20 February 2019 that it had initiated a plan to sell dedicated assets to conventional coal-fired power plants. The Group is seeking a partner for the Power Generation activities dedicated to the conventional coal-fired power plants, including the Reisholz (Germany) and VCHA (China) plants.

Oil Country Tubular Goods (OCTG)

Coordinated globally at the Region level, the industrial and commercial activities of OCTG Europe/Africa are carried out through the following subsidiaries:

- Vallourec Oil & Gas France (VOGFR) – France (100%) which produces standard threaded connections and the full VAM® range of products. It has a production unit in Aulnoye-Aymeries, which includes several Oil and Gas tube threading lines that allow all of the dimensions and connections of the VAM® product line to be made as well as a line to apply the multifunctional Cleanwell® coating on certain products, which was especially designed for VAM® connections as a substitute for storage and assembly greases;
- Vallourec Deutschland GmbH – Germany (100%) has threading and finishing lines for the production of standard joints and all premium VAM® products at its Düsseldorf-Rath industrial site;
- Vallourec Oil & Gas UK Ltd. – United Kingdom (100%) combines facilities specializing in threading, in Clydesdale Bellshill (Scotland), and service bases in Scotland and Norway to satisfy, in particular, the market needs of the North Sea;
- Vallourec Nigeria Ltd – Nigeria (100%); operates a tube threading and finishing plant for line pipes located in the Onne free-trade zone at Port Harcourt (Rivers State, Nigeria). In operation since December 2009, it supplies the local market.

Onshore Line Pipe/process

The Onshore Line Pipe business is dedicated to the transportation needs of the Oil & Gas market, with a dual strategic position in the production sectors (upstream oil) and in downstream activities. It groups together all the products and services used by engineering and oil companies, from the wellhead to the refineries, petrochemical and gas treatment plants.

The Onshore Line Pipe Project activities are exercised through Vallourec Tubes France and Vallourec Deutschland GmbH through strong synergies with the Group's Services subsidiaries, such as Serimax – France (80%) for welding, and with Serimax Field Joint Coating – United Kingdom (a 100%-held subsidiary of Serimax).

Powergen/ST&P

In the past few years, the accessible markets in Europe for Vallourec in the coal-fired thermal power plant segment have dropped considerably. The demand for new power plants has shifted to Asia, and in particular China, where Chinese electricity producers have qualified Chinese suppliers for their critical tube needs. In addition, energy policies increasingly favor the development of renewable energies.

In 2018, as the Group is no longer able to provide a satisfactory load for its plants in this market on its own, it decided to close the finishing line for small-diameter tubes for boilers at the Saint-Saulve tube mill and to begin the search for a strategic partner to take over its Reisholz (Germany) and Changzhou (China) plants, which specialize in the production of large-diameter tubes for boilers.

Industry

The Group markets hollow sections, tubes and bars manufactured in its European industrial units for mechanical markets (cranes, hydraulic cylinders, agricultural machines, OCTG mechanical parts, etc.), automotive markets (bearing tubes, bars to be drawn, etc.) and construction (bridges, stadiums, offshore jack-up platforms, airport terminals, exhibition halls, etc.) The Industry sales and industrial activities are carried out through Vallourec Tubes France, Vallourec Deutschland GmbH, and Vallourec Bearing Tubes.

Vallourec and Interpipe, a Ukrainian producer of seamless tubes, created a joint venture, Vallourec Niko Tube – Ukraine (50.1%) to cooperatively produce non-OCTG carbon seamless tubes for the European market. These products, mostly for mechanical applications, are rolled by Interpipe before being conditioned and controlled in a common finishing unit, which is managed by Vallourec and located in Nikopol (Ukraine). These tubes have been sold in Europe since late 2018 under the Vallourec brand.

Specialty Activities

Vallourec Bearing Tubes – France (100%), a historical European leader in seamless tubes and rings for the manufacture of bearings. In addition to the bearing tube activities, Vallourec Bearing Tubes produces and supplies made-to-measure tubes for Mechanicals and tubular hollow bars for the Oil & Gas markets. Vallourec Bearing Tubes has a plant in Montbard (Côte-d'Or), which is equipped with heat treatment and a hot rolling mill.

Vallourec Umbilicals – France (100%), located in Venarey-lès-Laumes (Côte-d'Or, France), manufactures welded stainless steel super duplex tubes for umbilicals for the offshore Oil & Gas market.

MIDDLE EAST/ASIA REGION

Oil Country Tubular Goods (OCTG)

The activities of OCTG Middle East/Asia are carried out through the following subsidiaries:

- VAM Changzhou Oil & Gas Premium Equipments Co., Ltd. – China (100% held directly or indirectly by the Group), was created in September 2006 for the operation of a premium connection threading plant for oil and gas well equipment;
- Vallourec Oil & Gas (China) Co., Ltd. – China (100%), created in April 2010. The company sells Vallourec premium OCTG products on the Chinese domestic market, along with Vallourec Tianda (Anhui) Co., Ltd. (formerly Tianda Oil Pipe Company Limited (TOP)) "API" product exports, and provides technical support and quality control services;
- Vallourec Asia Pacific Corp. Pte Ltd. – Singapore (100%), operates in the OCTG tubes and accessories market in the Asia-Pacific region;
- PT Citra Tubindo TBK – Indonesia (81.7% held directly or indirectly by the Group), which has carried out heat treatment on tubes and threading of API, NS® and VAM® joints since 1985;
- Vallourec Saudi Arabia Ltd. – Saudi Arabia (80% held directly or indirectly by the Group). In November 2011, the Group acquired Saudi Seamless Pipes Factory Company Limited, the leading processing and finishing company for seamless OCTG tubes in Saudi Arabia (located in Dammam), from the Zamil group. This acquisition brought Vallourec heat treatment and premium threading facilities;
- Vallourec Tianda (Anhui) Co., Ltd. (formerly Tianda Oil Pipe Company Limited (TOP)) – China (99.6% held directly and/or indirectly by the Group). This company operates in particular a PQF® continuous rolling mill to produce seamless tubes for the Oil & Gas market. Since 2011, Vallourec has owned 19.5% of Vallourec Tianda (Anhui) Co., Ltd. (formerly Tianda Oil Pipe Company Limited (TOP)). At the end of 2016, Vallourec acquired 79.6% of the domestic shares of this company, then went on to purchase shares from individual shareholders during 2017. This acquisition allows Vallourec to develop an expanded offer of highly competitive solutions that combine the VAM® connections with the Vallourec Tianda tubes.

Powergen/ST&P

Powergen's activities are notably exercised through Vallourec China, formerly known as Vallourec Changzhou Co., Ltd. (China).

Vallourec (Changzhou) Co., Ltd was created in 2005 in order to increase the Group's machining capacity for large-diameter hot-rolled tubes produced in Europe for the Chinese Power Generation market. The plant at Changzhou, in the province of Jiangsu, began production in July 2006. On 13 September 2012, a new hot-forging and heat treatment unit was inaugurated that enables manufacturing operations for seamless large-diameter pipes to be integrated locally.

As indicated above, the Group decided in 2018 to begin the search for a strategic partner to take over its Reisholz (Germany) and Changzhou (China) plants, which specialize in the production of large-diameter tubes for boilers.

Specialty Tubes ("Specialty Products")

The Specialty Products activity brings together companies specialized in the manufacture and processing of seamless tubes in stainless steel and special alloys, primarily for the nuclear energy markets.

The Specialty Products Division principally involves the following companies:

- Valinox Nucléaire – France (100%) specializes in nuclear island tubes. The production unit in Montbard (Côte-d'Or, France) is the original site of Valinox Nucléaire;
- Valinox Nucléaire Tubes Guangzhou Co. Ltd. – China (100%), specialized in nuclear island tubes, was formed in November 2010 in Guangdong Province, China, and opened on 6 June 2013.

NORTH AMERICA REGION

Oil & Gas

The activities in North America are carried out through the following subsidiaries:

- Vallourec Star, LP – United States (80.5% held directly or indirectly by the Group) is an integrated manufacturer of seamless tubes for the oil and gas industry. Its facilities include an electric steel mill, two rolling mills equipped with the latest technology and heat treatment and threading units. It dedicates 80% of its production range to the OCTG market. Sumitomo Corporation is a partner, with a 19.5% stake in Vallourec Star, LP.

  The company's production units are located in Youngstown (Ohio), Houston (Texas) and Muskogee (Oklahoma);
- VAM USA LLC – United States (51% held directly or indirectly by the Group). Partnering with NSC with a 34% stake, and with a 15% stake in Sumitomo Corporation, this company works in the threading of premium VAM® joints and the provision of services.

  The VAM® and Atlas Bradford® brands complement Vallourec's product offering, providing significant expertise in the field of flush connections for the industry's most demanding applications;
- Vallourec Oil & Gas Mexico SA de CV – Mexico (100%), which specializes in premium VAM® connections and provides the Mexican Oil & Gas industry with the complete range of VAM® products;
- Vallourec Canada Inc. – Canada (100%) has production units in St. John's (Newfoundland), as well as sales offices in Calgary (Alberta);
- Vallourec Tube-Alloy, LLC – United States (100% directly held by the Group), produces and repairs accessories used inside oil and gas wells. It specializes in complex threading operations and in machining bespoke parts for both oil operators and component manufacturers. Its production units are located in Houma (Louisiana) and Houston (Texas).

SOUTH AMERICA REGION

Brazil

In 2018, Brazil continued to roll out the Transformation Plan that was launched on 1 October 2016, creating a new subsidiary as a result of the merger of the assets and activities of Vallourec Sumitomo Tubos do Brasil Ltda. and Vallourec Tubos do Brasil S.A. The newly created company, Vallourec Soluções Tubulares do Brasil S.A. (VSB), was designed to strengthen the industrial base in Brazil and optimize the competitiveness of the Brazilian production base. Under the Transformation Plan, in July 2018, the blast furnace of the Barreiro plant was stopped to promote synergies and optimize industrial production. Still under the Transformation Plan, the majority of activities are now geared toward exports to foreign markets.

The activities of the South America Region are carried out through the following companies, which are held by Vallourec Tubos do Brasil S.A. (VBR) (100%), a holding company for Brazilian entities since 1 October 2016:

- Vallourec Soluções Tubulares do Brasil S.A. VSB (VBR, 84.6%) in partnership with Nippon Steel Corporation (NSC, formerly NSSMC, 14 %) and Sumitomo Corporation (0.4%) is the result of the above-mentioned merger of assets and activities, which combine the Jeceaba, Barreiro (Minas Gerais state) and Serra (Espirito Santo state) industrial sites:
  - the Jeceaba industrial site is located 120 kilometers south of Belo Horizonte. It consists of a premium rolling mill and also includes a pelletization unit whose pellets are used by the Jeceaba blast furnaces and the local Brazilian market, a steel mill (with a blast furnace and electrical furnace), for the Barreiro production and the Jeceaba plant, an innovative rolling mill, and finishing lines. The Jeceaba site performs all types of API and premium threading types, in particular the VAM® product range,
  - the Barreiro site has been located in the Belo Horizonte district for more than 60 years and occupies an area of more than 300 hectares. This integrated unit combines production equipment and hot rolling equipment for the tube finishing lines. The Barreiro site in particular provides tubular products for ultra-deep water projects, notably the pre-salt reservoirs. Since 2015, the site has housed the Vallourec Research Connections Center Brazil (VRCC Brazil), which tests that all the new exclusive threaded connections comply with industry standards, and guarantees the level of performance needed for difficult pre-salt environments,
  - VSB also participates as an industrial supplier of all Vallourec entities, primarily for the international Oil & Gas markets. Semi-finished products are exported to Vallourec's finishing plants throughout the world,

- the seamless tubes of VSB do Brasil S.A. are intended for the following applications:
  - the Oil & Gas market, delivering seamless steel tubes for oil production and exploration (casing, tubing, accessories, and premium VAM® connections) and the transport of oil and gas (line pipes, columns, flow lines, etc.) The VSB tubes offer not only resistance to high pressures and high temperatures, but also resistance to corrosion by carbon dioxide and sulfates,
  - the Industry market (Petrochemicals, Power Generation, Mechanicals, etc.), a market that is mainly served by distributors working closely with Vallourec Soluções Tubulares do Brasil S.A. to guarantee quality and technical assistance,
  - the Automotive industry (light vehicles, trucks and agricultural equipment), with precision parts like tubes for diesel injectors, bearing rings and forged parts such as transmission shafts and axles, and
  - the Civil Engineering and construction sector: tubes for infrastructure and industrial foundations, structural tubes for commercial assets, capital goods, ancillary machines and materials;
- Vallourec Florestal Ltda. – Brazil (100%) plants and operates eucalyptus forests for the production of charcoal from wood. Charcoal is one of the principal necessary components in the production of liquid crude iron by blast furnaces. Vallourec Florestal Ltda. owns 230,000 hectares of agricultural land in the north of the State of Minas Gerais and currently has approximately 113,000 hectares of eucalyptus forest. The production process can be broken down into the following activities: forest planting, forest harvesting, charcoal production, and delivery on a just-in-time basis for the blast furnaces of VSB;
- Vallourec Mineração Ltda. – Brazil (100%) has been extracting iron ore at its Pau Branco mine since the early 1980s. The mine is located in the city of Brumadinho in the State of Minas Gerais, 30 kilometers south of Belo Horizonte. Its annual production capacity totals approximately 4.5 million metric tons of iron ore, and it is looking at extending the production capacity. The mine supplies the blast furnaces and the pellet plant of its affiliated companies. It also sells its production on the market;
- Tubos Soldados Atlântico Ltda. (TSA) – Brazil (100%), provides anticorrosion coatings (triple-layer polypropylene, or polyethylene) applied to seamless, welded tubes;
- Vallourec Transportes & Serviços Ltda. – Brazil (100%) offers tube inspection and repair services, premium accessories for the Oil & Gas market, as well as a vast array of operational assistance services for the same sector.

Uruguay

- Vallourec Uruguay S.A. – Uruguay (100%) was formed on 13 July 2017 to market the tubes produced by the Group for OCTG and Process applications in South America.

ACTIVITIES OF THE HOLDING COMPANIES

Vallourec is a holding company that:

- manages its shareholdings. Its income is mainly financial, including dividends, interest on long-term loans to subsidiaries and investment income from cash and cash equivalents. It also bears the cost of its debt;
- owns its trademark and the Group image, of which it entrusted management to Vallourec Tubes in 2014;
- has no industrial activity.

Vallourec Tubes is a sub-holding company, wholly owned by Vallourec, that manages its shareholdings and has no industrial activities. Its income is mainly financial, including dividends, interest on long-term loans to subsidiaries, provisions for subsidiaries and investment income from cash and cash equivalents.

MARKETING COMPANIES

In the United States, Vallourec USA Corporation (100% held American subsidiary) markets all of the tubular goods produced by Vallourec Tubes' various subsidiaries. It also carries a stock of tubes intended for US oil and gas distributors, which usually thread the tubes themselves according to the end-customer's requirements. Its offices are located in Houston, Texas, and Pittsburgh, Pennsylvania.

In addition, sales and marketing companies reporting to Vallourec Tubes are established in:

- Canada;
- the United Kingdom;
- China;
- Russia;
- Dubai;
- Singapore;
- Italy; and
- Sweden.

3.3 Innovation, Research and Development

A key factor for competition and growth, innovation has always been at the heart of Vallourec's strategy, and has largely contributed to its leading position in premium tubular solutions. In a very competitive global environment, the Group intends to continue to detect and foresee the technological challenges faced by its customers. It must respond to the radical and rapid evolution of their needs by offering them tailored solutions that are simultaneously safe, reliable and environmentally friendly, and that create value, in line with its premium position.

3.3.1 Organization of innovation and Research and Development

3.3.1.1 Information and key figures

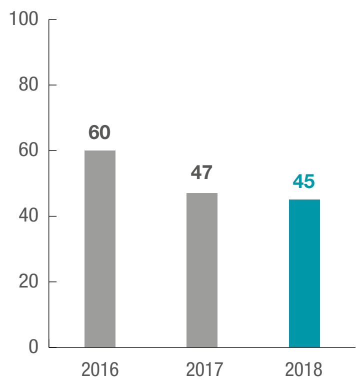
Research and innovation are at the heart of the Group's business focus. Innovation is a key priority for the Group in maintaining its technological leadership and anticipating its customers' needs.

The three cornerstones of the Group's research are:

- manufacturing processes;
- new products and improving the performance of existing products; and
- services and solutions.

In 2018, Research and Development (R&D) expenses totaled €45 million. The following chart represents the R&D expenses amount during the past three years. Between 2016 and 2017, the level of expenses was in part altered by a lower number of qualification tests requested by our Oil & Gas customers. Moreover, the Group maintained a significant effort with respect to the development of new products and new solutions:

In € million



Since April 2017, Vallourec's expertise in R&D, Marketing and Innovation have been coordinated within a new department: the Development & Innovation (D&I) Department. This central department also includes the product lines. Thanks to this structure, the R&D and Innovation teams have been established in close proximity to the markets. A total of some 500 researchers and technicians were involved in research and development in the Group in 2018.

The Group's key technological challenges include the following:

- for the Oil & Gas market, the Group must address the growing complexity of the fields and the transport of oil and gas (onshore and offshore) and assist the EPCI (Engineering, Procurement, Construction and Installation) operators in finding solutions to reduce their total cost of ownership (TCO);
- for the renewable energy market, the Group must measure the contribution of characteristics from its range of products and solutions for power generation, as well as the storage of energy and mobility, to assist in energy transition;
- for the Industry market, the Group has to reduce the weight of mechanical engines, by designing lighter structures and increasing the useful load of the existing designs.

3.3.1.2 Research centers and expertise: global presence

Vallourec has six research centers throughout the world specializing in specific products, processes or technologies.

In Aulnoye-Aymeries, France:

- the Group's historic research complex, the Vallourec Research Center France, specializes in metallurgy, non-destructive testing, corrosion resistance, surface treatments, product and process digital simulations, particularly for Oil & Gas applications. It also provides technical assistance to the Group's plants and divisions;
- the Vallourec Research Center Connections develops and validates the range of VAM threaded connections. For more than 50 years, its team of experts have developed the range of threaded connections and assisted with their commercial production throughout the worldwide network of licensees. Whatever the needs of the oil and gas company operators, the performance of the solution developed is validated through tests on real-sized samples. These tests, which are conducted at one of Vallourec's three test laboratories worldwide, aim to subject our products to all operating constraints (make-and-break operations initially, followed by combined loads simulation at various temperatures). The expertise of the Vallourec Research Center Connections have expanded in the past few years to meet the growing demand of our customers to eliminate assembly grease through the Cleanwell® solution.

In Düsseldorf and Riesa, Germany:

- the Vallourec Research Center Germany is dedicated to designing and developing steel tubes for power plants, mechanical infrastructures, and oil and gas pipelines. Its fields of competence are mainly steel design, creep strength, and resistance to oxidation or corrosion occurring at high temperature (above 400°C). It also houses a welding lab. In addition, it provides technical assistance to the Group's plants and divisions;
- the Vallourec Research Center Technology is in charge of research on hot forming for seamless steel tube production. This long-established center had made innovations in Vallourec's core processes by relying on the expertise of external partners, including universities. It operates alongside the "Vallourec Competence Center Riesa," a

laboratory containing the most modern equipment, which allows Vallourec to increase the pace of development of innovations in process methodologies and equipment. Its versatile piercing, rolling and forging facilities will push back the current limits of steel and alloy hot-forming within the Group. They are also used as training tools and pilot units for the Industry 4.0 developments.

In Belo Horizonte and Rio de Janeiro, Brazil:

- the Vallourec Research Center Brazil research units have teams of experts and test laboratories, adapting the Group's solutions to the specific needs of its Brazilian customers, as well as developing new solutions. Vallourec Competence Center Rio is located in the Industrial Park of the University of Rio de Janeiro in close proximity to CENPES, the Petrobras research center, and academic laboratories. It takes part in technical partnerships that use the mature technologies of today and tomorrow. Lastly, Vallourec Florestal, Vallourec's subsidiary, which operates the Group's eucalyptus forest in Brazil, conducts research work on forestry, the transformation of wood into charcoal and the preservation of the environment.

In Houston, Texas (USA):

- the Vallourec Competence Center USA, coordinating with the Vallourec Research Center Connections in Aulnoye-Aymeries, is dedicated to specific developments in VAM® for the American market. Its design and testing capacities have allowed it to put specifically refined connections on the market for the exploitation of shale deposits (VAM® SG, VAM® EDGE SF) and Deep Offshore wells (VAM® BOLT, VAM® 21, VAM® HP).

As concerns the threading of connections, the VAM Threading Competence Center industrializes all production methods of the VAM® connections and provides assistance to the operations at the Group's plants. It provides plants with the equipment standards to invest in, tools, as well as with critical maintenance and operating methods. This competence center has a dedicated production line to optimize threading operations and test solutions industrially before the R&D developments phase.

The Group also performs R&D activities in other regions of the world, notably in Indonesia, through its subsidiary P.T. Citra Tubindo, and in Japan, with its longstanding partner NSC (formerly NSSMC).

3.3.1.3 A collaborative approach to innovation with customers and markets

Innovation is at the source of numerous advances, which allow Vallourec's customers to push back technological borders, tap into unused resources until then unexplored, and improve the performance of their facilities. As Innovation is a process of ongoing dialog with customers, the Group works in close collaboration with some of these customers to develop solutions that meet their operational needs.

With Petrobras, the Group develops innovative tubular solutions for exploration and production in hard-to-access oil and gas deposits (ultra-deep water, pre-salt fields, corrosive environments with H_2S, CO_2). The Group estimates that approximately 80% of the products developed with Petrobras to operate complex fields did not exist in 2009.

With Total, the Group develops connections delivering unmatched performance in difficult High Pressure/High Temperature (HP/HT) type wells or tubes for umbilicals.

With Saudi Aramco, the Group has developed, qualified, and delivered some of the most technical products (VAM® HTTC), combining excellent sealing performance with unequaled torsional resistance.

With Chevron, the Group pushed back the limits of the existing integral connections by refining a new generation of products to replace the VAM SLIJ-II.

With TechnipFMC, SubSea 7 and Saipem, the Group is working on optimization solutions (high-grade mechanics, resistance to sour gases and welding) allowing oil and gas to be transported in increasingly deep environments.

With General Electric (GE) Power and Doosan, the Group develops high-performance products and solutions for ultra-supercritical power plants. With European power producers (RWE, UNIPER, EDF) the Group develops solutions to allow it to use different fuels in the existing plants (coal and biomass, waste).

With its traditional customers diversifying into renewable energies (offshore wind, solar, hydrogen, etc.), the Group is thinking about the necessary transformations for its portfolio.

With new customers from renewable energy, the Group is continuing its innovation processes to explore new solutions together.

The Group is also developing R&D programs in all countries where it is established, in association with institutions with leading positions in their field. This is the case with NSC in particular, with which a collaboration has been in place since 1976 in the area of VAM® connections for the Oil & Gas market.

The Group also participates in the most essential research work with numerous university laboratories in Europe and around the world.

3.3.2 A strengthened culture of innovation

The Group's innovation strategy is to differentiate ourselves with our premium product range, while developing new solutions linked to the use of our products as well as new markets. In line with this strategy, the Development & Innovation Department (D&I) is strengthening the innovation expertise and capacities of the Group's teams, both by developing deeper knowledge and sharing it on our markets, and by establishing agile and efficient innovation methods.

3.3.2.1 Innovation methods and culture

In order to optimize the generation and selection of ideas that will be the innovations of tomorrow, D&I organizes training sessions to better understand its customers' needs and generate ideas.

These training sessions and workshops enable the Group to deploy and share a common language of innovation, to reinforce and disseminate market knowledge to the teams contributing to innovation, and to successfully use Vallourec-specific creativity tools. All departments that take part in innovation participate in these workshops: R&D and Marketing, as well as Sales and Commercial Production.

This process, based on collaboration and collective intelligence, the sharing of knowledge and experiences, the generation of ideas in groups, allows effective results to be achieved while strengthening the Group's culture of innovation.

Since 2017, the workshops have taken place in collaboration with our customers. They allow us to discuss with them any issues they have had using our products, so that we can better understand their needs, and respond more effectively. The workshops also allow Vallourec's image as a partner and provider of solutions beyond premium products to be strengthened.

At the same time, with respect to projects already in development, D&I helps the project teams to effectively apply Vallourec's project management methods to ensure that products are brought to market as rapidly as possible.

The product line project portfolio is reviewed regularly to verify its value, identify synergies and define priority projects and next steps.

Furthermore, the initiatives launched in 2016 to strengthen collaboration with start-ups, schools, and industrials (Open Innovation Efforts) to speed up our innovations, continued. These initiatives were even expanded with the Open Innovation Challenge in September 2017 on the topic of “intelligent tubes”.

The partnerships launched with the start-ups selected at the time of these initiatives allow Vallourec to integrate the most recent and innovative technologies, accelerate development projects and deepen discussions between teams.

The experts, the process communities, project teams and R&D teams are developing and participating in online collaborative spaces and tools, which allow them to share information across the Group.

3.3.2.2 The Expert Career program

Vallourec established the Expert Career program to enhance the value of technical expertise and individual career paths within the Group’s key sectors. This program allows engineers and scientists to be offered new career opportunities in the areas of Technology and R&D. Links between management responsibilities and technical expertise were established under the coordination of the Human Resources Department, guaranteeing the same level of recognition.

3.3.2.3 Innovation Challenges

Organized by the Innovation Department, the first Vallourec Innovation Challenge allowed all departments and divisions of the Group to contribute to innovation in 2016. The Innovation Challenge was carried out using the Group’s front-end innovation methodology, for a period of three months. More than 30 teams took part, coming up with interesting and innovative proposals to reduce our customers’ costs. The two winning ideas, selected by employees and the Official Jury, have been developed. All of the ideas proposed were reviewed and expanded upon. Some of them are under development.

The Open Innovation Challenge launched in September 2017 was on “smart tubes.” More than 40 start-ups and companies from all continents presented their offers. Development of innovative solutions is underway with the best companies selected.

3.3.3 State-of-the-art manufacturing processes

3.3.3.1 Forest and blast furnaces

In Brazil, Vallourec operates eucalyptus forests to produce charcoal to fuel its blast furnaces. The Group is pursuing its efforts to improve performance in this area. The main thrusts of this research include: scientific tree selection, improving forest nutrition programs and industrializing the continuous charcoal-making process.

3.3.3.2 Steel production

The development and production of steels with a high level of chrome (up to 13%) using continuous-casting processes forms the basis of the Group’s range of high-tech solutions, and is the purpose of much of its work. Research on the cleanliness of steel is a cornerstone of research on the manufacture of premium products. Innovations made in continuous casting processes also allow the capacity and quality of the steel to be improved, thereby strengthening the Group’s autonomy in terms of premium steel supply.

3.3.3.3 Hot-process seamless tube production

The hot-process production of seamless steel tubes, invented in 1886 by the Mannesmann brothers, is a fundamental technology for Vallourec, and is constantly being improved thanks to research.

The Group has developed other processes, including the Premium Forged Pipes (PFP®) patented process to produce very wide, thick tubes, in particular for the mechanical and energy sectors. It has been used industrially in Europe since 2008, and in China since 2012.

Developments are underway for the most modern hot-rolling processes (PQF, FQM, etc.).

3.3.3.4 Non-destructive testing

Non-destructive tests, which enable the assessment of the integrity of structures or materials with no degradation at various stages of life, are being developed to ensure that the Group’s products are extremely reliable. Innovations in this sector are major differentiating factors. Cutting edge non-destructive test benches, capable of detecting imperfections independently of direction, are used on a daily basis to inspect premium products.

3.3.3.5 Heat treatment

A large share of the Group’s premium products is heat-treated to reach exceptional levels of performance. The heat treatment process is continually being improved, in order to meet the needs of the Group’s customers, in particular in terms of respect for the environment, deformation resistance or breaking strength, corrosion resistance and tube weldability.

3.3.3.6 Process communities

Process communities rolled out within the Group allow rapid and ongoing progress to be achieved, through the sharing of best practices and available technologies for the main processes of the Group: production and continuous casting of steel, heating rounds, hot rolling, forging, heat treatment, non-destructive testing, threading and tube finishing (coating, marking, machining, etc.). Benchmarks are regularly reviewed to ensure that Vallourec’s practices and technologies remain compliant with best practices and best available techniques. We continually improve our processes through the significant internal efforts in Research and Development. The SHALYN Industry 4.0 internal platform was established to manage and control manufacturing processes. The cutting edge level 2 systems and applications are connected to continuously improve the performance of our products and services.

3.3.4 Standards applicable to the Group's projects

3.3.4.1 Standards applied by the Group

The Group complies with regulations, standards and certifications in the countries in which it markets its products. These standards vary by geographic region, by product and by its use. The Group also carried out a monitoring process to ensure that its products comply with applicable regulations, standards and certifications.

The Group is subject to two types of standards: the mandatory standards set by law, and the non-mandatory standards that the Group voluntarily chose to apply in response to customer demand.

Mandatory standards generally require certification by laboratories and/or independent organizations, and are provided by the government. Their principal purpose is to protect user health and safety by demonstrating that the product complies with regulatory requirement. They relate principally to the properties of fire resistance and slip resistance and to limits on toxic emissions. Non-mandatory standards are required by the Group's customers, who include compliance with these standards in their specifications.

3.3.4.2 Standards organizations and the standards applied in different geographical regions

Standards organizations define the technical characteristics and performance required of a product, as well as the tests to be used. At the international level, the main organization that promulgates standards applicable to the Group is the International Standardization Organization ("ISO"). ISO standards, which are established based on principles of the World Trade Organization, are in theory voluntary, but compliance is often required by the Group's customers.

The Group relies on the Vallourec Management System (the VMS), whose fundamental objective is to improve the Group's performance in the fields of quality, health, safety, the environment and logistics, which are grouped under an ambitious program known as Index and run by one of the Management Board's members. This system ensures that the requirements for managing quality (ISO 9001, ISO/TS 16949, API, ASTM and ASME), health and safety (OHSAS 18001), the environment (ISO 14001) and energy (ISO 50001) are taken into account.

3.3.5 Industrial property

The strengthening of the Group's organization in the area of industrial property continued with the monitoring of major Research and Development projects and the holding of sessions to heighten industrial property awareness among Research and Development teams, in France and abroad, and the development of expertise in the Group's new areas of innovation.

The Group's patent filing activity remained very sustained in 2018. The Group thus filed 23 new basic patents and proceeded with 500 geographical extensions of patents. Individual patent protection has been maintained at a very high and stable level with more than 4,100 patents worldwide and a successful and sustained defense of Group patents under dispute. The budget dedicated by the Group to protecting inventions via patents remained stable in 2018, as compared to 2017.

In 2018, Vallourec also continued its efforts to protect its trademarks, through registrations, renewals, and opposition procedures. In particular, the Vallourec trademark was refiled to cover new services being developed within the Group.

3.4 Market environment

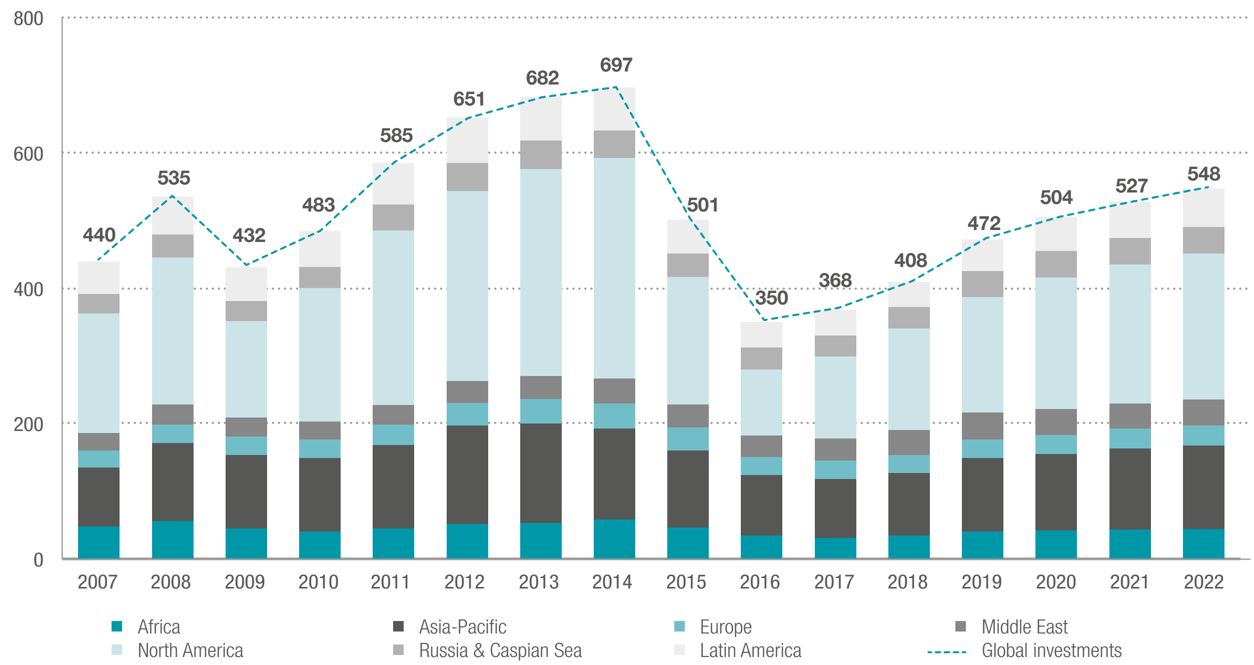
3.4.1 Oil & Gas

3.4.1.1 World oil and gas market

Demand for seamless tubes primarily depends on the level of investments from Oil & Gas market players. According to forecasts published by IHS in December 2018 (graph below) investments in exploration and production (E&P) have steadily increased since 2016: they increased by approximately 11% in 2018 compared to 2017, and are expected to increase by approximately 16% in 2019.

Development of exploration and production investments by geographic area

In USD billion



Source: IHS – Global Upstream Spending – December 2018.

The balance between supply and demand as well as the price variations determine the development of the Oil & Gas market.

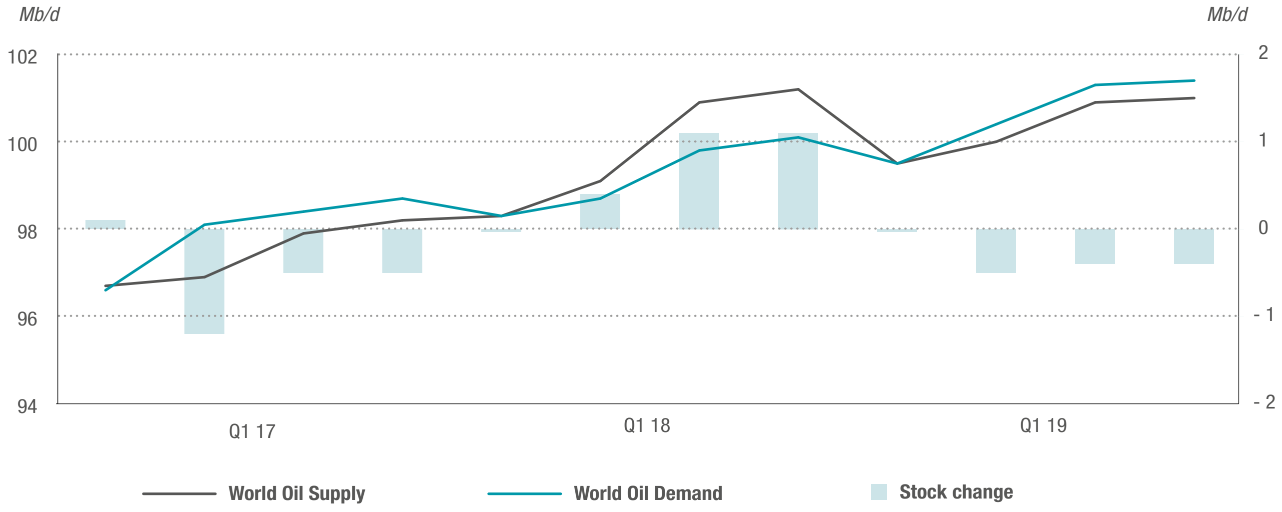
Since 2017, supply and demand have been balanced, despite short-term volatility.

World demand for oil increased by 1.3 million barrels/day in 2018. The 2019 forecasts indicate a slight increase in demand to 1.4 million barrels/day. Nevertheless, the world economic environment is uncertain, and trust indicators are slipping in several major world economies.

The world supply reached record production at 100 million barrels/day in 2018. The abundant supply produced during these last few months by the three biggest producers worldwide, combined with the American decision to temporarily authorize Iranian exports, created a situation of excess supply. Production in 2018 thus consisted of 2.8 million additional barrels/day compared to 2017. In order to rebalance the market, OPEC, Russia, and the nine other non-member countries of OPEC decided in 2018 to cut production by 1.2 million barrels/day, starting in January 2019. The markets should thus find restored balance in the first half of 2019, if we consider (i) OPEC's and its partners' compliance with the reduction agreement signed, and (ii) the ongoing decline in Venezuelan and Iranian production.

The graph below shows the updated forecasts from the IEA (International Energy Agency) in relation to the supply/demand balance for oil and gas, expressed in millions of barrels/day (mb/d), and the development of stocks worldwide.

Balance between oil supply and demand



Source: IEA Oil Market Report – January 2019 & Vallourec Marketing.

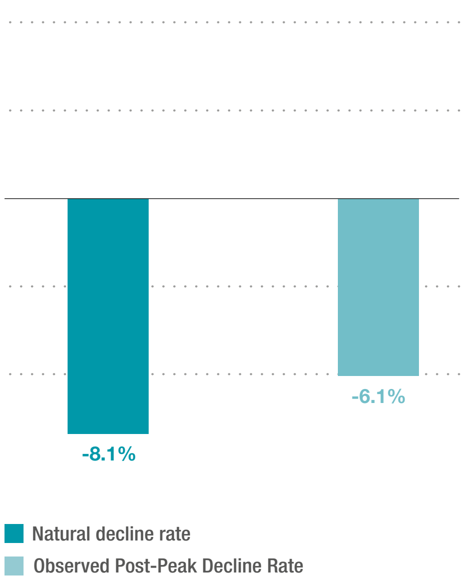
Field depletion is a key driver of **demand for oil and gas products.** Over time, oil fields begin to produce less and less oil, until their production rates decline to a point where their oil production is no longer profitable. This is what is called **"the natural decline rate."** As production gradually falls, the Group's customers must accordingly develop new exploration and production projects to replace these volumes, thereby creating demand for Vallourec's tubular solutions.

The "observed post-peak decline rate" corresponds to the annual decline in production of conventional wells for which the maximum level of production was achieved, even if investments were made in these same wells to support production. The post-peak decline rate is currently approximately 6% per year. In order to maintain a stable oil production level in standard oil, it is thus necessary to produce an additional 3 million barrels/day [(1)] each year (*i.e.*, the equivalent of total production from the North Sea). In the event that no investment is made, the "natural decline rate" of the currently active wells would drop 8%.

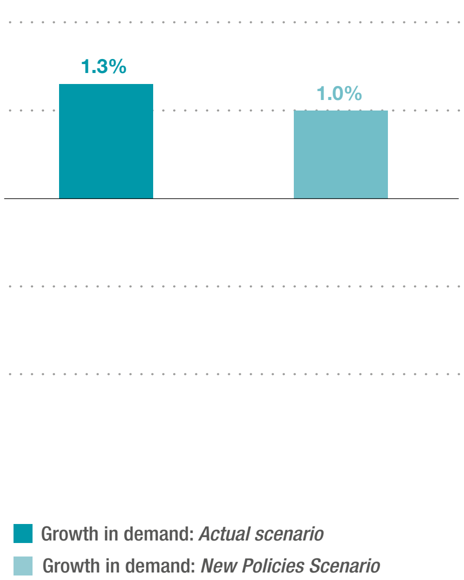
It is interesting to emphasize that the decline rates observed for the non-conventional oil wells (tight oil) are still higher. According to the IEA, nearly 70% of the 8,500 "tight oil" production wells completed in 2017 in the United States matched the only compensation of depletion of the existing wells.

The graphs below show the annual decline rates forecast, as well as the annual growth rates in oil demand expected until 2025 (source: IEA). These are pertinent indicators that allow us to monitor how supply, and thus investments in exploration and production, should evolve to (i) offset depletion and (ii) be able to meet the growing demand for oil and gas.

Rate of decline in production: 2017-2025



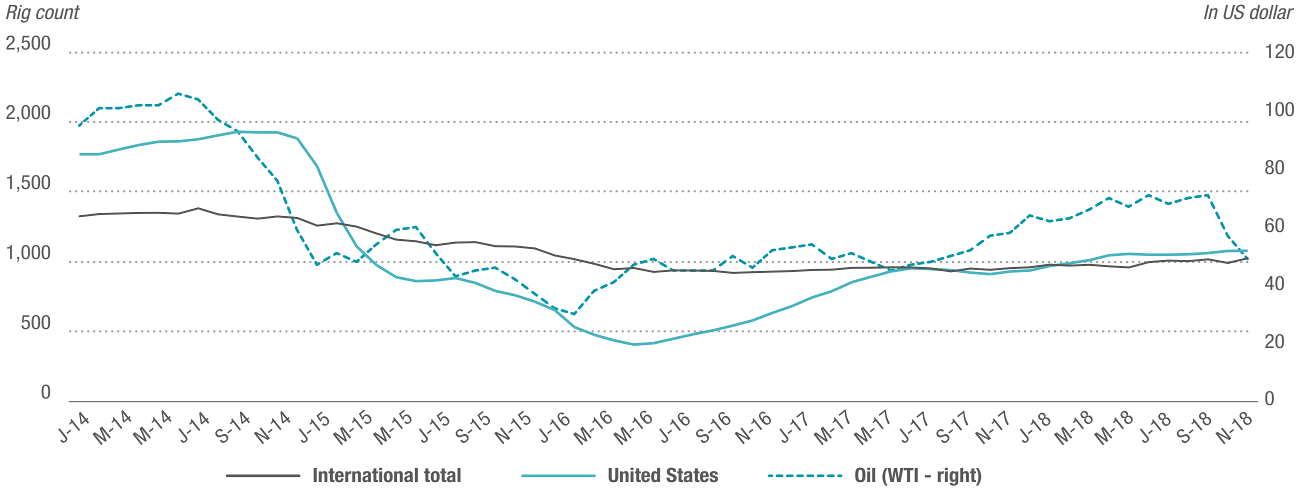
Annual growth rates in oil demand 2017-2025



Source: International Energy Agency, "World Energy Outlook" – November 2018.

(1) *IEA: Market Report Series – Oil 2018 Analysis and forecasts to 2023.*

As with other indicators on the state of the market, Vallourec monitors changes in the number of active rigs, as well as their productivity. Rig counts in the United States have increased strongly since the low point of May 2016. The graph below shows the number of rigs in the United States and worldwide for the past five years, together with the change over time in WTI prices:



Source: Baker Hughes and Thomson Reuters – January 2019.

The average prices of WTI [(1)] and Brent [(2)] in 2018 were USD 65 and USD 71 respectively, compared with average prices of USD 51 and USD 54 respectively in 2017.

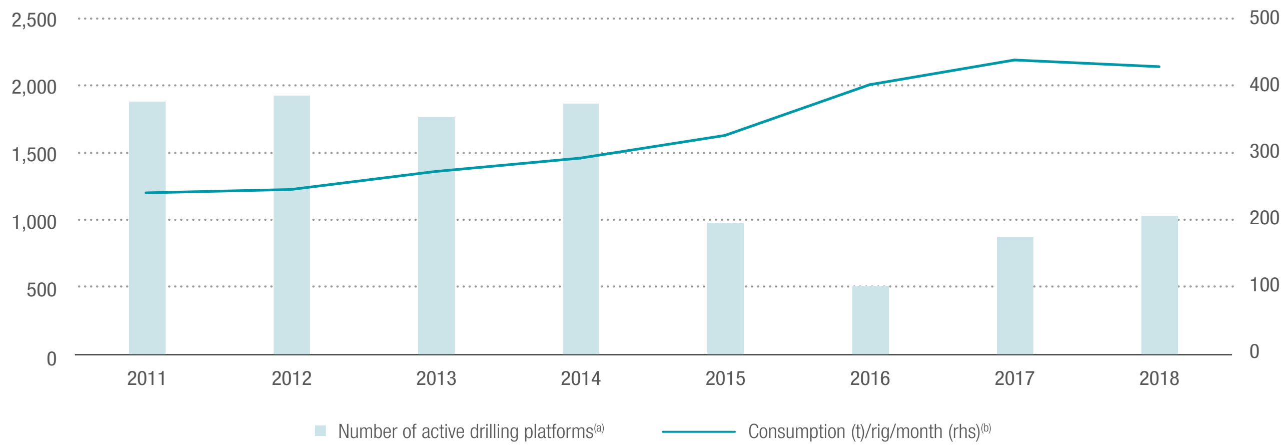
The average price of gas [(3)] remained stable in 2018 compared to 2017, *i.e.*, USD 3.1/Mbtu compared with USD 3.0/Mbtu in 2017.

3.4.1.2 Oil & Gas market in the United States

This market has increased considerably since 2017 and shows solid activity.

The average number of active rigs [(4)] in 2018 was 1,032 units, *i.e.*, an 18% increase from 2017. In late 2018, the rig count was 1,078 units, compared to 930 at the end of 2017.

US OCTG consumption is also being driven by improved rig efficiencies and a higher usage rate of horizontal rigs compared to vertical rigs. The graph below illustrates this trend, and we see that OCTG consumption in the United States per rig has increased and, since 2017, has maintained levels that are well above those previously recorded:



Sources: (a) Baker Hughes (January 2019).
(b) Preston US OCTG consumption (January 2019).

In the Gulf of Mexico, the number of drilling platforms stood at 24 units at end-2018 [(4)], a six-unit increase compared to end-2017.

(1) Price of WTI: US Energy Information Administration – January 2019.
(2) Price of Brent: Energy Information Administration – January 2019.
(3) Price of gas (Henry Hub): US Energy Information Administration – January 2019.
(4) Source: Baker Hughes – January 2019.

3.4.1.3 Oil & Gas Rest of the World Market

BRAZIL: OUTLOOK OF DYNAMIC GROWTH STARTING IN 2020

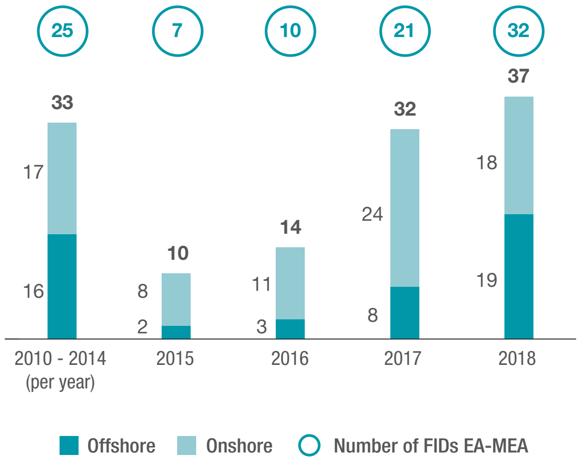
Petrobras revised its exploration and production program upward, forecasting more than USD 69 billion in investments over the 2019-2023 period (compared to USD 60 billion for 2018-2022, announced at the end of 2017). Petrobras is targeting average annual growth in its production of 5% over the period, and announced a considerable recovery of exploration activity. Furthermore, the major international oil companies, which now have access to pre-salt fields, are also starting exploration.

In April 2018, Vallourec strengthened its collaboration with Petrobras with the renewal of its long-term contract (three years) to supply seamless OCTG premium tubes, manufactured in superior quality steel and including connections and other cutting-edge services. The contract began in the third quarter of 2018, as planned.

THE EAMEA REGIONS ARE SHOWING STRONG RECOVERY

These regions benefit from a growing number of tenders (on both the part of the major international and national oil companies) and final investment decisions ("FID"), which are resuming their levels from the period preceding the 2014 crisis.

Number of projects that were the subject of a final investment decision and for which reserves are > 50 Mb/day

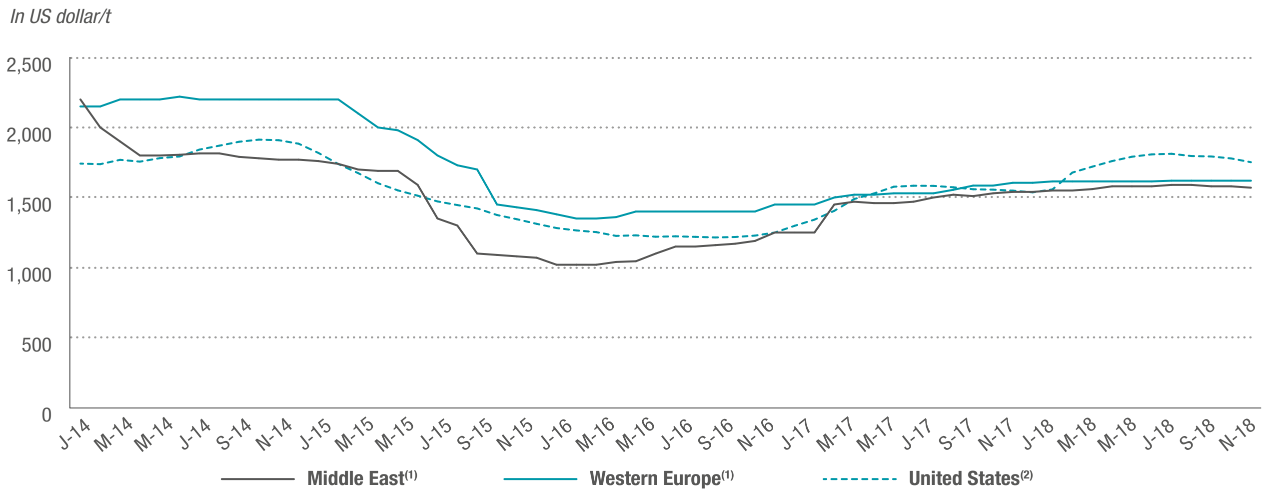


Source: Wood Mackenzie, 2018.

These oil and gas market trends are positive signals for the demand for tubular solutions.

3.4.1.4 OCTG price trends for the Oil & Gas Market

In this context, and even if they remain in dispute, the OCTG prices have begun to rise from their lowest point in mid-2016. The increase in prices has been more marked in the United States than in the Europe, Africa and Middle East regions as illustrated in the graph below.



Sources: (1) MBR (OCTG casing L80 premium connection) – January 2019.
(2) Pipe Logix (average prices seamless tubes) – January 2019.

3.4.2 Industry and other markets

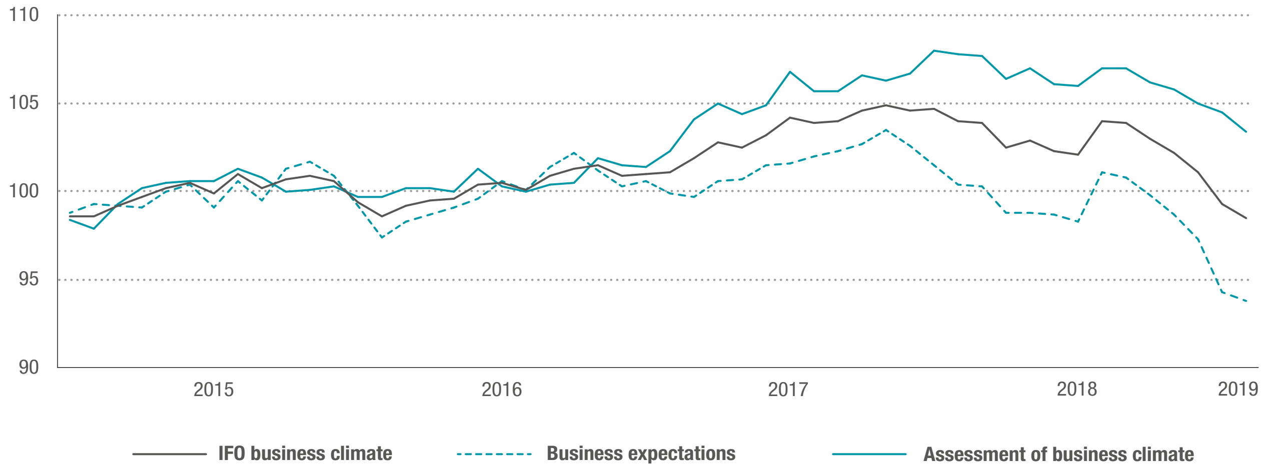
The demand for tubes for industrial applications depends on the context of growth or decline in certain industrial sectors such as automotive, construction, or even the manufacturing industry. Growth in these sectors is also driven by numerous factors, but overall bears a broad correlation to GDP growth.

In Brazil, the GDP continued the recovery that began in 2017, recording a 1.30% increase in 2018 (compared to +0.7% in 2017).

Mining activity benefited from the rise in iron ore prices in the second half after a weaker first half.

In Europe, industrial and other activities rose in 2018, benefiting from a bullish environment at the start of the year, but became less favorable in the second half, due to a slowdown in demand, which notably impacted the automotive sector.

The graph below shows the change in the business climate in Germany as analyzed by the German economic research institute, the IFO Institute.



© Manufacturing service sector, trade and construction.

Source: ifo Business Survey, January 2019.

© ifo Institute.

3.4.3 Power generation

Demand for seamless tubes in the power generation market depends on the construction or maintenance of power plants and technological advancements in specific types of power generation.

3.4.3.1 Conventional energy

The Chinese authorities have decided to reduce the number of projects, with the aim of limiting total coal-fired thermal power plant capacity to below 1,100 GW in 2020.

In South Korea, coal-fired power plants programs are impacted by the decisions taken by the new President. In the other regions (Europe, North America) activity remains limited to maintenance works.

These long term trends reflected on demand in 2018 with an improving product mix but at the same time decreasing volumes.

3.4.3.2 Nuclear energy

China, with targets of 58 GW of nuclear capacity installed in 2020, and 150 GW by 2030 (32 GW in 2017), is the largest market for the new build. In Europe, the United Kingdom launched a nuclear program targeting an additional capacity of the nuclear fleet in operation of 16 GW by 2030. In this context, it signed a cooperative agreement with EDF for the Hinkley Point C project (which will be launched in 2025, at the earliest).

The difficulties of funding, the issues related to increasing safety of facilities, as well as the political reluctance of some countries, such as South Korea recently, are slowing down the development of nuclear power.

In addition to the new build business, Vallourec is also targeting tubular needs related to the program to extend the life time of existing reactors (France, Canada, South Korea, etc.).

3.4.4 Renewable energies

Activities are increasing, mostly for geothermal energy, and biomass power plants.

Vallourec is also involved in different innovation projects, in particular solar and hydrogen energies.

3.4.5 Raw materials

Raw material prices impact the Group as a result of its use of scrap metal and iron ore. The Group's US-based steel mill is equipped with an electric arc furnace fed with scrap metal. The Brazilian steel mill in Jeceaba uses scrap for its electric furnace, and iron ore for its blast furnace. The iron ore comes from the mine exploited by Vallourec.

In 2018, scrap prices increased quite significantly, particularly at the beginning of the fiscal year:

- in the United States, average scrap metal prices in 2018 [(1)] stood at USD 366.7/LT, a 21% increase compared to the average price of USD 302.9/LT in 2017;
- in Brazil, scrap prices increased 23% in 2018, compared to 2017, standing at BRL 1,244/T, compared to BRL 1,008/T in 2017. This considerable price increase is linked to the recovery of the Brazilian economy and to the increase in demand;
- iron ore prices on the international market [(2)] in 2018 were on average USD 69.4/T, *i.e.*, a slight drop of 2.6% from the 2017 average price (USD 71.3/T).

3.4.6 Currencies

The Group is sensitive to volatility in foreign currencies (primarily the Brazilian real, US dollar against the euro).

The translation effect is the impact of the difference in the valuation of the financial statements of subsidiaries whose functional currency is not the euro in the Group's consolidated financial statements. When subsidiaries generate profits, the effect is positive when the currency rises against the euro and negative when it falls against the euro.

The transaction effect represents a gain or loss in revenue (or purchases) when the contracts are billed in a currency other than the company's functional currency. It is positive when the functional currency declines and negative when it rises, with a delay resulting from hedges in place.

3.5 Significant events in 2018 and early 2019

3.5.1 Fiscal year 2018

CONTINUED DEPLOYMENT OF THE TRANSFORMATION PLAN

In 2018, Vallourec continued to roll out its Transformation Plan, which it launched in early 2016: the Group has thus continued to integrate VSB in Brazil and Tianda in China and continued to use its most competitive production routes via its two production hubs, which has allowed it to increase the competitiveness of Vallourec's global offer.

The Group has simultaneously sold some non-strategic assets. In April 2018, Vallourec finalized the sale of the majority of its "Drilling Products" business to NOV. The two French "Drilling Products" entities in Cosne-Cours-sur-Loire (Bourgogne-Franche-Comté) and in Tarbes (Occitanie) that were undergoing an independent divestment process were sold.

The Group also sold Vallourec Fittings, a subsidiary producing seamless fittings in France.

In July 2018, the blast furnace and steel mill in Belo Horizonte, Brazil were closed. Steel production in Brazil is now concentrated at the Jeceaba steel mill, a modern site that is equipped with a blast furnace and an electric arc furnace (EAF).

The small boiler tube finishing line in Saint-Saulve (France) dedicated to conventional power plants was closed at the end of 2018.

The assets of the Ascoval steel mill (40% held by Vallourec and 60% by Asco Industries) were the subject of a bid by the Altifort Group. The takeover plan was approved by a court decision dated 19 December 2018, effective 1 February 2019. It was then cancelled by a subsequent decision on 27 February 2019. The company Ascoval is currently awaiting the outcome of the insolvency procedure.

GOVERNANCE

The Shareholders' Meeting of 25 May 2018 approved the renewal of the terms of Vivienne Cox, Cédric de Bailliencourt, Laurence Broseta and Alexandra Schaapveld, as well as the appointment of Jean-Jacques Morin as a member of the Supervisory Board, to replace Henri Poupart-Lafarge, who did not wish to renew his term, which had expired. José Carlos Grubisich resigned from his duties as a member of the Supervisory Board on 30 November 2018 for personal reasons.

(1) CRU – Shredded Pittsburgh – $/LT.

(2) Platts SBB – IODEX Iron ore fines 62% CFR North China $/T.

COMMERCIAL SUCCESSES

On 5 April 2018, Vallourec announced that it had signed a set of new contracts with a three-year term regarding the supply of products and services to Petrobras, the Brazilian national oil company. Under this contract, which came into effect in July 2018, Vallourec provides Petrobras with premium seamless OCTG tubes and associated accessories, with premium steel grades and connections using state-of-the-art technology, and specialized services. The products and associated services are used by Petrobras at its offshore Oil & Gas exploration and production wells, located at the large reservoirs of the pre-salt basin.

On 29 May, 2018, Vallourec announced that Valinox Nucléaire SAS, its subsidiary specializing in the production of tubes for the steam generators of nuclear power plants, had signed an important contract with Framatome for the manufacture of more than 47,500 tubes, for eight steam generators at the two new EPR Hinkley Point C units located in England.

STRENGTHENING OF LIQUIDITY PROFILE

On 12 April 2018, Vallourec strengthened its liquidity profile by raising €400 million on the bond market. The net income from this issue, maturing in 2023, will contribute (i) with the cash on hand, to refinancing Vallourec's outstanding bonds due August 2019 by redeeming them when they mature, and (ii) to the payment of certain costs and expenses.

PARTNERSHIP

On 18 April 2018, Vallourec and Interpipe, a Ukrainian producer of seamless tubes, announced their intention to start a partnership to produce in cooperation non-OCTG carbon seamless tubes for the European market. These products, mostly for mechanical, line pipe and process applications, will be produced by Interpipe before being conditioned and controlled in a joint finishing line, managed by Vallourec, and located in Nikopol, Ukraine, at one of Interpipe's plants. The tubes will be marketed by Vallourec in Europe. This partnership will enable Vallourec to complement its offer with highly competitively priced entry-level pipes and therefore propose a global portfolio of solutions to reinforce its market position in Europe, the Group's historic base currently positioned on products with higher added value.

A NEW DIGITAL APPROACH FOR VALLOUREC SERVICES

On 24 September 2018, Vallourec launched a new digital and global services approach, called Vallourec.smart, to address its customers' needs for the entire value chain. This decision is a testament to the Group's ambition: offering innovative digital services and complementing its tubular solutions, with which it earned its global reputation.

3.5.2 First quarter of 2019

VALLOUREC, A NEW PORT AND RAIL OPERATOR IN ROUEN

On 28 January 2019, Vallourec announced that the Vallourec tube finishing site in Déville-lès-Rouen is now offering an independent rail connection to the Rouen port, upon having obtained a ministerial authorization to be a rail and port operator (OFP) in late 2018. For Vallourec's heat treatment plant for tubes in Déville-lès-Rouen, this means more flexibility and responsiveness to properly perform its industrial operations, without using a rail company between the plant and the Rouen port.

EXTENSION TO FEBRUARY 2021 OF €600 MILLION IN BANK LINES INITIALLY MATURING IN 2020

On 20 February 2019, Vallourec announced that on 19 February 2019, it obtained an extension to February 2021 of €600 million in bank lines that were initially maturing in 2020.

NEW INITIATIVES

On 20 February 2019, Vallourec announced an additional gross savings objective of at least €200 million by 2020, in addition to the €445 million already generated at end-2018. These new initiatives are concentrated in European activities, in particular in Germany, and in Brazil, in order to continue to strengthen the Group's profile of excellence.

The other measures implemented include the search for a partner for the Power Generation activities dedicated to conventional coal-fire power plants, including the Reisholz (Germany) and VCHA (China) plants.

GOVERNANCE

On 22 February 2019, the Supervisory Board announced the creation of a new special committee in charge of assisting it on issues pertaining to the Corporate Social Responsibility (CSR) strategy.

On 21st March 2019, the Supervisory Board decided to co-opt Ms. Corinne de Bilbao as a Supervisory Board member, to replace Mr. José Carlos Grubisich, who resigned.

LAUNCH OF SMARTENGO AN ONLINE SALES PLATFORM FOR THE OIL & GAS MARKET

On 4 March 2019, Vallourec announced the launch of its new e-commerce platform Smartengo [(1)], which allows its customers to buy some 15 top OCTG threaded welded tubes online. This targeted offer will afford operators greater flexibility, allowing them for example, to very rapidly finish equipping their oil and gas wells in Europe or Africa, as a first step. The Smartengo platform will gradually expand its offer for products and services to all sectors of Vallourec's business and all regions of the world.

(1) Smartengo is a trademark.

3.6 Transformation Plan

In the context of a sharp drop in oil prices in the summer of 2014, and the underinvestment of a portion of its customers, in early 2016 Vallourec announced major strategic initiatives to transform its operational set-up, improve its competitiveness in the short and long term, and reinforce its financial structure to secure long-term profitable growth and create value for its shareholders. Under the Transformation Plan, the Group announced an objective of €400 million in gross savings over a four-year period (2016-2020). Vallourec surpassed this objective two years early, with cumulative gross savings at the end of 2018 of €445 million, €130 million of which were in 2018.

The gross savings program included far-reaching measures, which were actively implemented in the past two years, to:

- promote the competitiveness of our production base in Brazil:
  - merge Vallourec Soluções Tubulares do Brasil (VSB) and Vallourec Tubos do Brasil SA to generate significant synergies,
  - close the blast furnace and steel mill in Belo Horizonte, which was launched in 2017 and completed, as planned, in July 2018;
- reduce the capacity in Europe by closing production lines or plants:
  - close a threading line in Mülheim, Germany (2016),
  - close the heat treatment line in Bellshill, Scotland (2016),
  - close two rolling mills in Déville-lès-Rouen (2016) and Saint-Saulve (2017),
  - close a boiler tube finishing line for conventional power plants in Saint-Saulve (late 2018);
- reduce administrative, sales, and research costs, which dropped 28.7% in 2018 compared to 2014.

In parallel to the savings measures, the Group disposed of non-strategic, under-performing activities:

- sale of Vallourec Heat Exchanger Tubes, a subsidiary producing titanium and stainless steel welded tubes for the secondary systems of conventional and nuclear power plants (April 2016);
- sale of a controlling stake in the Saint-Saulve steel mill (January 2017);
- sale of Vallourec Fittings (April 2018);
- sale of Drilling Products activity (April 2018), followed by the sale of the last two plans in Cosne-sur-Loire and Tarbes (July 2018).

The Group also significantly reduced its workforce. Staff was reduced approximately 24% (5,600 employees) since 2014 (based on the Group's long-standing consolidation scope, excluding Tianda,) approximately 3,000 of whom were in Europe (*i.e.*, -31%) and approximately 1,600 of whom were in Brazil (*i.e.*, -20%).

In addition to the savings initiatives, the Group began to roll out its new, most competitive production routes, VSB (Brazil) and Tianda (China). They now represent approximately 50% of the total rolling capacity, compared to approximately 30% in 2014, while Europe represents approximately 25% of the total rolling capacity, compared to approximately 45% in 2014.

The Group recorded ongoing growth in the use of its new routes, which represent progress in terms of competitiveness, on the recovering international Oil & Gas markets.

Additional gross savings initiatives were identified. They will be implemented in 2019-2020 in an effort to speed up the Group's recovery. These new initiatives are focused on European activities, in particular in Germany, as well as in Brazil, in an effort to continue to strengthen its profile of excellence.

In Europe: in order to restore the competitiveness and profitability of its German activities, the Group decided to launch a large-scale savings plan. This program includes a significant reduction of staff in Germany (approximately 600 employees out of 3,400), the reduction of the costs of semi-finished products, industrial costs, and administrative and sales costs, as well as the optimization of production flows. These restructuring measures are subject to prior consultation with the staff representative bodies concerned, and should be implemented starting in 2019.

In Brazil: to further develop the efficiency of its Brazilian sites, which are already among the best in the sector, the Group will continue to focus its ongoing improvement program on productivity efforts, sourcing efficiencies and inventory management.

By 2020, the Group thus has the goal of achieving additional gross savings of at least €200 million, in addition to the €445 million already generated in late 2018.

Measures concerning the conventional power generation activities: these other measures that were implemented include seeking out a partner for Power Generation activities dedicated to coal-fired power plants, which include the Reisholz (Germany) and VCHA (China) plants.

3.7 Results of operations

3.7.1 Consolidated Group results

3.7.1.1 Income statement

Comparison of FY 2018 with FY 2017

Consolidated data *In € million*	2017	2018	2018/2017 change
Production shipped *(in thousands of metric tons)*	**2,256**	**2,364**	**+4.8%**
Revenue	**3,750**	**3,921**	**+4.6%**
Industrial costs of products sold [(a)]	(3,297)	(3,342)	+1.4%
Industrial margin	**453**	**579**	**+27.8%**
(as a % of revenue)	*12.1%*	*14.8%*	*2.7 pts*
Selling, general and administrative expenses (SG&A) [(a)]	**(440)**	**(405)**	**-8.0%**
(as a % of revenue)	*11.7%*	*10.3%*	*-1.4 pts*
Other	(11)	(24)	N/A
EBITDA	**2**	**150**	**+€148 m**
(as a % of revenue)	*0.1%*	*3.8%*	*3.7 pts*
Depreciation of industrial assets	(297)	(266)	+€31 m
Depreciation and amortization, restructuring and other	(123)	(108)	N/A
Impairment of assets	(65)	(53)	N/A
Operating income	**(483)**	**(277)**	**+€206 m**
NET INCOME, GROUP SHARE	**(537)**	**(502)**	**+€35 M**

(a) Before depreciation and amortization.

3.7.1.2 Production

The diversity of the Group's products and the absence of appropriate units of measurement, other than financial units, prevent the provision of meaningful information on production volumes. However, the following table provides a summary of production output, which corresponds to the volumes produced in Vallourec rolling mills, expressed in metric tons of hot-rolled seamless tubes:

In thousands of metric tons	2017	2018	2018/2017 change
Q1	475	515	+8.4%
Q2	538	572	+6.3%
Q3	588	583	-0.9%
Q4	655	694	+6.0%
TOTAL	**2,256**	**2,364**	**+4.8%**

The 4.8% increase in 2018 compared to 2017 is primarily explained by the continued recovery of Oil & Gas activities, primarily in Brazil and North America.

3.7.1.3 Revenue

The data presented "at constant exchange rates" is calculated by eliminating the translation effect into euros of the revenues of the Group's subsidiaries whose functional currency is not the euro. The translation effect is eliminated by applying 2017 exchange rates to these subsidiaries' 2018 revenue. However, the transaction effect – resulting from commercial exposure from sales and purchases entered into by certain of the Group's subsidiaries in currencies other than their functional currency – has not been eliminated.

CONSOLIDATED REVENUE

Consolidated revenue amounted to €3,921 million in 2018, up 4.6%. The increase was even sharper at constant exchange rates, up 10.8%. It reflects the combination of a +6.0% price/mix effect, and a volume effect of +4.8%, despite the considerable drop in Power generation revenue.

REVENUE BY GEOGRAPHICAL MARKET

The following table shows the change in consolidated revenue by geographic region in which products were sold between 2017 and 2018:

In € million	2017	% of revenue	2018	% of revenue	2018/2017 change at current exchange rates	2018/2017 change at constant exchange rates
France	105	2.8%	88	2.2%	-16.2%	-16.2%
Germany	279	7.4%	298	7.6%	6.8%	6.8%
Other EU countries [(a)]	210	5.6%	201	5.2%	-4.3%	-4.0%
Total Europe	**594**	**15.8%**	**587**	**15.0%**	**-1.2%**	**-1.1%**
North America	**1,033**	**27.6%**	**1,281**	**32.7%**	**24.0%**	**29.5%**
Brazil	599	16.0%	597	15.2%	-0.3%	18.9%
Other Central & South America	13	0.3%	29	0.7%	123.0%	148.3%
Total South America	**612**	**16.3%**	**625**	**15.9%**	**2.1%**	**21.8%**
China	451	12.0%	339	8.6%	-25.0%	-23.8%
Other Asia and Middle East	724	19.3%	749	19.1%	3.5%	10.1%
Total Asia and Middle East	**1,175**	**31.3%**	**1,088**	**27.7%**	**-7.4%**	**-2.9%**
CIS	30	0.8%	28	0.7%	-6.7%	-6.1%
Rest of the world	306	8.2%	312	8.0%	2.0%	2.8%
Total Rest of the world	**336**	**9.0%**	**340**	**8.7%**	**1.2%**	**2.0%**
TOTAL REVENUE	**3,750**	**100.0%**	**3,921**	**100.0%**	**4.6%**	**10.8%**

(a) Other European Union countries, excluding Germany and France.

REVENUE BY ACTIVITY

In 2018, the consolidated revenue for Oil & Gas and Industry & Other activities increased, while the revenue for Power Generation activity was down. The following table shows the breakdown of the Group's revenue by activity in 2017 and 2018:

In € million	2017	2018	% change at current exchange rates	% change at constant exchange rates [(a)]
Oil & Gas	2,299	2,469	7.4%	14.0%
Petrochemicals	268	344	28.4%	34.8%
Oil & Gas and Petrochemicals	**2,567**	**2,813**	**9.6%**	**16.2%**
Power Generation	**408**	**289**	**-29.2%**	**-27.6%**
Mechanicals	368	469	27.4%	32.1%
Automotive	144	148	2.8%	14.7%
Construction & other	263	202	-23.2%	-14.3%
Industry & other [(b)]	**775**	**819**	**5.7%**	**13.1%**
TOTAL	**3,750**	**3,921**	**4.6%**	**10.8%**

(a) The change at constant exchange rates is defined as the change in revenue between two periods obtained by translating the revenues of consolidated subsidiaries whose functional currency is not the euro into euros at the average cumulative rate of the prior period. It does not include foreign currency impacts on sales entered into by certain subsidiaries in currencies other than their functional currency. Rather, that impact is built into price/mix effects.

(b) Including sales of iron ore.

Oil & Gas, Petrochemicals (72% of consolidated revenue)

In 2018, Oil & Gas revenue was €2,469 million, up 7.4% from 2017, and with strong growth of 14.0% at constant exchange rates:

- in North America, Oil & Gas revenue considerably increased. The rise in OCTG volumes sold primarily helped the growth in drilling activity. Indeed the average number of rigs was up 18% from 2017. Moreover, the prices clearly increased during the period; supplementary OCTG prices were increased in the third quarter of 2018;
- in the EAMEA [(1)] region, the Oil & Gas revenue was up from 2017, under the effect of a strong increase in OCTG sales in the Middle East and Africa, in particular in the fourth quarter, when volumes doubled, both compared to Q4 2017 and to Q3 2018, following the tenders received in late 2017 and in 2018;
- in South America, the Oil & Gas revenue was up from 2017, supported by the increase in line pipe deliveries.

In 2018, the Petrochemicals revenue totaled €344 million, a considerable increase of 28.4% compared to 2017, and of 34.8% at constant exchange rates, due to the growth of sales in the United States.

Industry & Other (21% of consolidated revenue)

In 2018, Industry & Other revenue amounted to €819 million, up 5.7%, and even steadier growth at constant exchange rates, with a 13.1% increase.

- In Europe, the growth of Industry revenue was moderate after very good performance in 2017, in particular for Mechanical activity. Nevertheless, in 2018, the Group was able to increase its prices.
- In South America, the Industry & Other revenue increased from 2017, essentially thanks to the increase in volume for Mechanical and Automotive activities connected to the gradual recovery of the Brazilian economy. Mine activity benefited from the rise in iron ore prices in the second half, after a weaker first half.

Power Generation (7% of consolidated revenue)

In 2018, Power Generation revenue amounted to €289 million, down 29.2% from 2017 (down 27.6% at constant exchange rates). This drop concerned sales to conventional power plants, which were clearly lower than 2017, due to the drop in demand in this industry, especially in Asia, as well as deliveries in nuclear applications. The Group closed the finishing line for tubes for the conventional power plants of Saint-Saulve in late 2018.

REVENUE BY QUARTER

In € million	Q1	Q2	Q3	Q4	Fiscal year
2017	783	933	964	1,070	3,750
2018	862	982	961	1,116	3,921
% change, compared to the previous year	+10.1%	+5.3%	-0.3%	+4.3%	+4.6%
volume effect	*+8.4%*	*+6.3%*	*-0.9%*	*+5.9%*	*+4.8%*
translation effect	*-12.0%*	*-8.5%*	*-4.7%*	*-1.4%*	*-6.2%*
other effects (price, mix, etc.)	*+13.7%*	*+7.5%*	*+5.3%*	*-0.2%*	*+6.0%*

In the fourth quarter of 2018, Vallourec recorded revenue of €1,116 million, up 4.3% compared to the fourth quarter of 2017, and up 5.7% at constant exchange rates. This increase resulted from the 5.9% rise in volume, in particular for the Oil & Gas market in EAMEA. The drop in Power generation revenue was largely offset by increased Oil & Gas revenue.

3.7.1.4 EBITDA

EBITDA strongly increased, up €148 million from 2017, totaling €150 million. This improvement is primarily a result of the improvement in the industrial margin and lower SG&A.

The following table shows the changes in the principal components of EBITDA in 2017 and 2018.

In € million	2017	2018	Change 2018/2017
Revenue	**3,750**	**3,921**	**4.6%**
Cost of sales	(3,297)	(3,342)	1.4%
Industrial margin	**453**	**579**	**27.8%**
% of revenue	*12.1%*	*14.8%*	*+2.7 pts*
Selling, general and administrative expenses (SG&A)	(440)	(405)	-8.0%
Other expenses, net	(11)	(24)	N/A
EBITDA	**2**	**150**	**+€148 M**
% of revenue	*0.1%*	*3.8%*	*+3.7 pts*

(1) *EAMEA: Europe, Africa, Middle East, Asia.*

INDUSTRIAL MARGIN

Industrial margin is defined as the difference between revenue and cost of sales (excluding amortization).

In 2018, the industrial margin improved by €126 million reflecting (i) the increase in revenue, (ii) the positive impact of the Transformation Plan, largely offsetting (iii) the increase in the price of raw materials and the unfavorable exchange rates.

The following table shows the breakdown of cost of sales (excluding amortization) in 2017 and 2018:

In € million	2017	2018	2018/2017 change
Direct cost of sales	223	207	-7.2%
Cost of raw materials consumed	1,370	1,485	8.5%
Labor costs	837	757	-9.6%
Other manufacturing costs [a]	908	964	6.2%
Change in non-raw material inventories	(41)	(72)	N/A
TOTAL	**3,297**	**3,342**	**1.4%**

(a) "Other manufacturing costs" mainly include the costs of energy and consumables, and the costs of outsourcing, maintenance and provisions.

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative expenses (SG&A) were reduced by 8.0% to €405 million in 2018, reflecting the strict cost control.

The following table shows the breakdown of SG&A (excluding amortization) in 2017 and 2018:

In € million	2017	2018	2018/2017 change
Research and Development expenses	47	44	-6.4%
Selling and marketing costs	82	77	-6.1%
General and administrative expenses	311	284	-8.7%
TOTAL	**440**	**405**	**-8.0%**

PERSONNEL EXPENSES

Labor costs are divided among cost of sales, SG&A, and other operating expenses.

In 2018, total labor costs were €958 million compared to €1,068 million in 2017. This drop primarily reflects restructuring measures in Europe and the sales of Drilling products entities.

Personnel expenses are broken down as follows:

In € million	2017	2018	2018/2017 change
Wages and salaries	820	750	-70
Employee profit-sharing and bonuses	22	16	-6
Expenses relating to share subscription and share purchase options, and performance shares [a]	10	-	-10
Social security costs	216	192	-24
TOTAL	**1,068**	**958**	**-110**

(a) Including €1.3 million in income for all share subscription plans for 2018 (compared to a €6.6 million expense for 2017).

Group workforce as at 31 December 2018 was 18,330 people [1], compared to 19,524 people as at 31 December 2017.

Workforce of the consolidated companies at year-end	2017	2018	2018/2017 change
Managers	3,231	3,116	-115
Technical and supervisory staff	3,048	2,703	-345
Production staff	13,245	12,511	-734
TOTAL	**19,524**	**18,330**	**-1,194**

For more detail on the workforce, see Section 4.2.2.1 "Group workforce" of this Registration Document.

3.7.1.5 Operating income

Operating result represented a loss of €277 million, compared to a loss of €483 million in 2017.

This €206 million improvement was primarily the result (i) of the €148 million increase in EBITDA, and (ii) of the drop in depreciation and amortization.

DEPRECIATION OF INDUSTRIAL ASSETS

Depreciation of industrial assets decreased, amounting to €266 million in 2018, compared to €297 million in 2017.

AMORTIZATION, RESTRUCTURING AND OTHER, AND ASSET IMPAIRMENT

Depreciation of other, non-industrial assets was €34 million, compared to €44 million in 2017.

In 2018, exceptional expenses were recorded: asset impairment of -€53 million compared to -€65 million in 2017, and expenses for "Disposals of assets, restructuring and other" represented -€74 million compared to -€79 million in 2017. These non-recurring elements primarily resulted (i) from restructuring measures taken in Europe, including €26 million in provisions linked to restructuring measures in Germany announced to the staff representative bodies, (ii) the sale of Drilling products entities in France, and (iii) asset impairment primarily concerning assets located in Europe.

Asset impairment can be broken down as follows:

In € million	2017	2018
Impairment of intangible assets	-	-
Impairment of property, plant and equipment	65	51
Goodwill impairment	-	-
Other impairment of assets	-	2
TOTAL	**65**	**53**

3.7.1.6 Financial income/(loss)

Financial income/(loss) was negative at -€220 million *versus* -€174 million in 2017. This increase is primarily attributable to higher interest expenses, due to bond issues in October 2017 and April 2018.

Financial income/(loss) is broken down as follows:

In € million	2017	2018	2018/2017 change
Financial income	26	14	-46.1%
Interest expenses	(155)	(189)	+21.9%
Net interest expenses	**(129)**	**(175)**	**+35.7%**
Other financial income and expenses	**(32)**	**(35)**	**+9.4%**
Other discounting expenses	**(12)**	**(10)**	**-16.7%**
FINANCIAL INCOME/(LOSS)	**(174)**	**(220)**	**-€46 M**

(1) It is noted that this number only includes the workforce from the Group's consolidated companies.

3.7.1.7 Income tax

Income tax represented an expense of €5 million in 2018 compared to a gain of €100 million in 2017, due to the recognition of deferred tax assets notably in Brazil in Q4 2017, combined with an income tax accounted in 2018 in North America reflecting the recovery of our business in the region.

The actual tax rate was -1%, compared to +15% in 2017, and is primarily due to the following:

- the impact of tax loss carryforwards and timing differences mainly concerns the non-recognition of deferred tax assets (DTAs) for the fiscal year in France, Germany and China;
- ongoing differences mainly concern the write-back of financial expenses and the impact from the disposal of securities;
- differences in taxation mainly reflect the range of tax rates applied in each country (France: 34.4%, Germany: 31.6%, United States: 21%, Brazil: 34%, China: 25% et Saudi Arabia: 20%).

The drop in the corporate tax rate in France has no impact on the Group's deferred taxes in France, due to the non-recording of deferred taxes on tax deficits and temporary differences.

3.7.1.8 Net income

The share of non-controlling interests totaled +€2 million in 2018, compared to -€23 million in 2017. This decrease was principally due to the recovery of activities in North America.

Net income, Group share was a loss of -€502 million, compared to a loss of -€537 million in 2017.

The Group's net result, Group share on a per-share basis was a loss of -€1.1 per share, compared to a loss of -€1.2 per share in 2017.

3.7.2 Liquidity and capital resources

3.7.2.1 Overview

In 2018, the free cash flow (as defined in Section 3.7.2.4. "Free cash flow" below) was negative by €494 million, including the non-recurring effect of reconstituting the working capital requirement in number of days, after its exceptionally low level in late 2017. Net debt increased from €1,542 million at end-2017 to €2,058 million as at 31 December 2018.

As at 31 December 2018, gross consolidated financial debt totaled €2,798 million, including €1,797 million in medium and long-term financial debt and €1,001 million in current financial debt. As at that date, the Group had €740 million in cash and cash equivalents, and had undrawn credit lines for €2,150 million.

Group equity decreased in 2018, particularly due to the negative consolidated net income and to the impact of foreign currency translation reserves.

The net debt to equity accounting ratio went from 53.4% as at 31 December 2017 to 90.9% as at 31 December 2018.

3.7.2.2 Cash flow

Simplified statement of cash flows

In € million	2017	2018
Cash flow from operating activities	(332)	(210)
Change in operating working capital requirement (+ decrease/(increase))	+61	(155)
Net cash flow from operating activities (1)	**(271)**	**(365)**
Net cash flow from investment activities (2)	**(95)**	**(95)**
Net cash flow from financing activities (3)	**130**	**219**
Impact of changes in exchange rates (4)	(31)	(32)
CHANGE IN CASH (1 + 2 + 3 + 4)	**(267)**	**(273)**

NET CASH FLOW FROM OPERATING ACTIVITIES

Net cash flow from operating activities was -€365 million in 2018, compared to -€271 million in 2017.

Cash flow from operating activities amounted to -€210 million in 2018, compared to -€332 million in 2017.

The working capital requirement linked to activity increased €155 million, compared to a drop of €61 million in 2017. It includes a net working capital requirement, which represented 94 days of sales at the end of 2018, compared to an exceptionally low level of 84 days at the end of 2017. In the second half, as planned, the working capital requirement linked to activity decreased €81 million. To recall, the working capital requirement days are subject to the seasonality of activity: the highest level is generally recorded in the first quarter and the lowest in the fourth quarter.

Capital expenditure were €129 million in 2018, compared to €152 million in 2017.

The change in working capital requirement is broken down as follows:

Gross amounts *In € thousand*	**31/12/2017**	**Translation difference**	**Change**	**Reclassification and other**	**31/12/2018**
Inventories	1,183,837	(13,043)	136,876	(33,076)	1,274,594
Trade receivables	603,653	(3,710)	17,008	(7,113)	609,838
Trade payables	(581,622)	(8,335)	(4,741)	12,426	(582,272)
Other receivables and payables	(70,877)	1,761	22,536	49,399	2,819
Gross working capital (1)	**1,134,991**	**(23,327)**	**171,679**	**21,636**	**1,304,979**
Impact of hedging instruments (2)			**(16,476)**		
TOTAL (1 + 2)			**155,203**		
Change in working capital requirement from statement of cash flows			**(155,203)**		

NET CASH FLOW FROM INVESTMENT ACTIVITIES

Net cash flow from investment activities was -€95 million in 2018, compared to -€95 million in 2017. See Section 3.7.2.3, "Industrial Capital expenditure" below for a description of the main investments in 2017 and 2018.

NET CASH FLOW FROM FINANCING ACTIVITIES

Net cash flow from financing activities was +€219 million in 2018, compared to +€130 million in 2017. Net cash inflow in 2018 consisted primarily of cash inflows relating to €1,346 million in new loans, partially offset by loan repayments in the amount of €1,081 million and the repayment of a shareholder's loan in the amount of €41 million.

3.7.2.3 Industrial capital expenditure

INVESTMENT DECISIONS

Investment decisions are a central pillar of the Group's strategy, addressing the following requirements:

- keeping personnel and facilities safe and complying with legal obligations, such as those relating to safety and the environment;
- developing Vallourec's activities through organic and external growth;
- optimizing production units' economic performance and enhancing the quality of Group products; and
- maintaining facilities and replacing them when obsolete.

In all its investment projects, the Group attaches great importance to ensuring that environmental impact and energy savings receive special focus.

Investment decisions are made through a dedicated process that systematically includes an economic study and risk assessment to ensure that the selected projects will support long-term growth and deliver an acceptable return on investment.

For projects with an amount higher than €1 million, the investment authorization process is strengthened by implementing the following actions:

- systematic preparation for each project through three "Front End Loading" steps;
- qualification of each of the three steps by a Qualification Committee bringing together the Group's experts. During this process, the essential aspects of the projects (market assumptions, technical choices, budget, planning and risks), are systematically examined and fleshed out; and
- an authorization at each of the three steps by a committee including the Director of Management Control and the Director of Investments, Projects and Engineering for projects of over €1 million. The members of the Management Board are part of this committee for projects of over €5 million. At committee meetings, projects compete with each other in terms of alignment with strategy, profitability and risk, while complying with the Group's budget limitations.

MAIN INVESTMENTS DURING THE 2017-2018 PERIOD

In recent years, industrial capital expenditure programs have been directed mainly toward streamlining production facilities, improving quality and process control, adapting product lines to reflect customers' changing requirements, expanding premium product finishing capacity and reducing production costs.

Over the past two fiscal years, investments have been made as follows:

Industrial capital expenditure excluding changes in scope (property, plant and equipment, intangible and biological assets)

In € million	31/12/2017	31/12/2018
Europe	85.2	50.5
North America	26.2	32.8
Central & South America	32.9 [a]	27.5 [a]
Asia	10.5	17.7
Other	0.2	0.2
TOTAL INDUSTRIAL CAPITAL EXPENDITURE [b]	**155.0 [b]**	**128.7 [b]**
Capital expenditure payments during the fiscal year	151.5	129.2

(a) *Including €6.2 million in biological assets.*

(b) *The difference between capital expenditure payments made during the fiscal year and the total of industrial capital expenditure corresponds to the change in amounts payable on fixed assets.*

The largest investment programs carried out in 2017 and 2018 are outlined below:

In 2017

After two years of significant drops, capital expenditure decreased again in 2017, but more moderately (-12% compared to 2016).

The programs initiated in previous years accounted for 59% of expenditure in 2017.

The main new investments in 2017 were as follows:

- continued implementation of the new Cleanwell® process in Europe for OCTG products;
- completion of the new high-performance piercer for the Düsseldorf-Rath tube manufacturing plant;
- improved safety of people and maintenance of facilities.

In 2018

Capital expenditure decreased in 2018 (-17% compared to 2017).

The programs initiated in previous years accounted for 32% of expenditure in 2018.

The main new investments in 2018 were as follows:

- completion of the first industrial line in Europe for the new Cleanwell® process for OCTG products;
- continued installation of a horizontal forging press for edges at the tube manufacturing plant in Düsseldorf-Rath;
- numerous projects to strengthen the Tianda facilities, or aimed at improving productivity and costs to support the Group's Transformation Plan, as well as safety and general condition of equipment.

MAIN INVESTMENTS PLANNED FOR 2019

Investment expenditures in 2019 will be capped below €200 million.

The 2019 program provides for a volume of new investments that is considerably higher than preceding years, in particular:

- a project to reuse blast furnace gas at the Jeceaba steel mill;
- several projects to modernize non-destructive testing facilities, which are aimed at improving quality, cost, time frames and capacities;
- continued investments aimed at assisting the Group in its Transformation Plan;
- numerous projects to digitize, maintain and restore installations, as well as improve the safety of people and facilities.

3.7.2.4 Free cash flow

In 2018, free cash flow totaled -€494 million, compared to free cash flow of -€423 million in 2017. Free cash flow is defined as net cash flow from operating activities minus gross capital expenditures. The following table shows the calculation of free cash flow in 2017 and 2018:

In € million	2017	2018
Cash flow from operating activities	(332)	(210)
Change in operating WCR + decrease, (increase)	+61	(155)
Net cash flow from operating activities	**(271)**	**(365)**
Gross capital expenditures	(152)	(129)
FREE CASH FLOW	**(423)**	**(494)**

3.7.2.5 Liquidity and indebtedness

As at 31 December 2018, gross consolidated financial debt totaled €2,798 million, including €1,797 million in medium and long-term financial debt and €1,001 million in current financial debt. As at that date, the Group had €740 million in cash and cash equivalents. Net debt thus totaled €2,058 million at the end of 2018, an increase of €516 million compared to €1,542 million as at 31 December 2017. The net debt to equity accounting ratio was 90.9% at end-2018, compared to a ratio of 53.4% at end-2017.

As at 31 December 2018, Vallourec had undrawn confirmed credit lines in the amount of €2,150 million. These credit lines do not benefit from a surety or guaranty. Given the expected amortizations, the amount available under these credit lines will be €2,128 million at end-2019, €1,834 million at end-2020, and €110 million at end-2021.

No material repayment deadline has been planned prior to December 2019, excluding the private placement of €400 million maturing in August 2019, commercial paper (€161.4 million as at 31 December 2018) maturing in more than one year, the bilateral line JP Morgan granted to Vallourec Star in the amount of €69.9 million (USD 80 million) maturing in March 2019, as well as various lines of financing (€32.3 million as at 31 December 2018) within the Brazilian and Chinese subsidiaries.

The Group's financial resources are composed of bank financing and market financing.

The majority of long-term and medium-term bank financing has been put in place in Europe through Vallourec and, to a lesser extent, the subsidiaries in Brazil, China, and the United States. Market financing is arranged exclusively by Vallourec.

The following table shows the Group's principal financial indebtedness as at 31 December 2018:

In € million	As at 31 December 2018
Private placement – maturing in August 2019	400
Private placement – maturing in August 2027	54
Bond issue – maturing in September 2024	498
Non-convertible bond issue – maturing in October 2022	543
Convertible bond issue – maturing in October 2022	227
Bond issue – maturing in October 2023	394
BNDES loan	28
Jeceaba Finance Lease – Brazil	57
Commercial paper	161
Bilateral credit lines – US	70
ACC ACE	304
Other	62
TOTAL GROSS FINANCIAL INDEBTEDNESS	**2,798**

All of these bank facilities (confirmed credit facility of €1.1 billion maturing in February 2019, extended once for €1.078 billion maturing in February 2020, and a second time for €1,034 million maturing in February 2021, a confirmed credit facility of €400 million maturing in July 2020, extended by €300 million from July 2020 to February 2021, a confirmed credit facility of €450 million maturing in February 2020, extended by €300 million from February 2020 to February 2021, a bilateral facility of €90 million maturing in February 2021, a bilateral facility of €110 million maturing in 2027) provide for Vallourec's compliance with a consolidated net debt-to-equity ratio ("banking covenant") that is less than or equal to 100%, calculated on 31 December of each year. The Group's consolidated debt to equity ratio was 72% as at 31 December 2018, as calculated under the banking covenant. As defined in the financing agreements, the banking covenant ratio is the ratio between the Group's net consolidated debt (including the shareholder loan in Brazil) and the Group's equity, restated for gains and losses on derivatives and valuation differences (gains and losses on the consolidated subsidiaries in foreign currencies), as provided in the table below:

In € million	31/12/2017	31/12/2018
Net debt	1,542	2,058
Shareholder loan	72	29
Restated net debt (a)	**1,614**	**2,087**
Equity, Group	2,885	2,264
Foreign currency translation reserve	536	624
Reserves – changes in fair value of financial instruments	(7)	8
Restated Group Equity (b)	**3,414**	**2,896**
Restated debt ratio (banking covenant) = (a)/(b)	**47%**	**72%**

A change in control of Vallourec could trigger repayment of all or part of the debt, as decided by each participating bank. It is also stipulated that the entire debt will be immediately due and payable if the Group defaults on one of its debt obligations (cross default), or in case of a major event with consequences for the Group's business or financial position and its ability to repay its debt.

The following table shows the repayment schedule for the Group's medium- and long-term debt as at 31 December 2018:

In € thousand	> 1 year	> 2 years	> 3 years	> 4 years	5 or more years	Total
As at 31/12/2017	**413,043**	**12,287**	**13,638**	**780,004**	**598,147**	**1,817,119**
Finance lease	8,298	8,315	8,354	8,398	17,426	50,791
Other non-current borrowings	2,713	3,421	776,641	399,076	563,995	1,745,846
AS AT 31/12/2018	**11,011**	**11,736**	**784,995**	**407,474**	**581,421**	**1,796,637**

3.7.2.6 Equity

The Group's equity totaled €2,264 million as at 31 December 2018, compared to €2,885 million as at 31 December 2017. This drop can be explained by the following main factors:

- the Group's negative net income recorded in 2018, in the amount of -€500 million;
- the remaining drop is primarily explained by translation differences.

3.8 Outlook

3.8.1 Market fundamentals

Market fundamentals remain supportive of a continued recovery in the Oil & Gas market. After the major over-supply crisis in 2014-2016, oil demand and offer have been overall balanced since 2017, despite short term volatility. After 4 years of under-investment, depletion of existing oil fields has to be compensated by new E&P investments.

Vallourec will benefit from three waves of successive recovery in its Oil & Gas markets

First to restart, in 2017, the US market (36% of Vallourec's O&G revenues on average over 2014-2018) sharply rebounded and saw sustained activity in 2018. Average rig count was up 18% compared to 2017 and tube consumption per well remained high, materially above 2014 levels. While volatile in nature, the US market is expected to remain solid over the coming years.

Activity in Middle East Asia and Europe Africa (52% of Vallourec's O&G revenues on average over 2014-2018) is now recording a strong increase. Final investment decisions taken by IOCs and tenders issued by NOCs in 2017 and 2018 translated in a material increase in tendering activity throughout the course of 2018. Vallourec's bookings from these markets more than doubled in 2018 compared to 2017 level. They led to the sharp rebound in deliveries starting in Q4 2018.

Lastly, the Brazilian market (12% of Vallourec's O&G revenues on average over 2014-2018) is expected to restart from 2020. Petrobras announced this year the upgrade of its E&P program, with over $69 billion of investments planned over the 2019-2023 period (versus $60 billion over 2018-2022 announced at end of 2017). Petrobras targets an average annual production growth at 5% over the period, and has announced a strong restart of exploratory activity. Furthermore IOCs, which have now access to the pre-salt fields, are starting exploration. Vallourec is uniquely positioned to take advantage of this market opportunity.

3.8.2 2019 trends and outlook

3.8.2.1 Trends

The trends and targets presented below are based on data, assumptions and estimates considered to be reasonable by the Group as of the date of this Registration Document. These data, assumptions and estimates may evolve or be modified due to uncertainties relating, in particular, to economic, financial, competitive, tax or regulatory conditions. The occurrence of one or more of the risks described in Chapter 5, "Risks and risk management" of this Registration Document could have an impact on the Group's activities, financial condition, results of operations or outlook and thus threaten its ability to achieve its targets. The Group therefore can give no assurances and can provide no guarantee that the targets presented below will be achieved.

In 2019, assuming current macro-economic and market conditions, Vallourec anticipates continued market recovery in the O&G market albeit with varying profiles in our key regional areas.

MAIN ASSUMPTIONS ABOUT THE OIL & GAS MARKET

In North America, based on current WTI prices, we anticipate demand for OCTG tubes to remain at a high level. The Group would fully benefit from the full year effect of 2018 price increases, despite some pressure on H1 as a result of the market softness in Q4 2018. The Group should also benefit from increased shipments through debottlenecking.

In the Regions of Europe, Africa, the Middle East and Asia, the Group should benefit from the continued increase in activity for Oil & Gas projects, as well as the further deployment of its competitive new routes, with in particular higher activity in North Sea, South East Asia, Middle East and Africa.

In Brazil, drilling activity is expected to remain broadly stable throughout the year.

MAIN ASSUMPTIONS ABOUT THE INDUSTRY MARKETS

In Europe, the Group should see flattening volumes and some pressure on prices after a positive price increase in 2018.

In Brazil, the Industry market should benefit from the recovery of the Brazilian economy, in particular in the automotive business. The outlook for mining is positive, and an extension of its capacity is being studied.

After unfavorable raw materials prices evolution faced in H1 2018, they have progressively stabilized in the course of H2 2018.

Similarly, the unfavorable currency impact experienced in 2018 would not replicate in 2019, assuming a stabilization at their current levels of the currencies in which the Group operates.

3.8.2.2 2019 outlook

The trends and targets presented below do not constitute forecast data or forecasts or targets for the Group's profits, but rather express the intended effect of its strategic direction. The data and assumptions presented below may change or be modified on the basis of changes in economic, financial, competitive, regulatory or tax conditions, or based on other factors of which the Group is not aware as of the date of this Registration Document.

Moreover, the occurrence of some of the risks described in Chapter 5, "Risks and risk management" of this Registration Document could have an impact on the Group's activities, financial position, results of operations or future prospects and thus threaten its ability to achieve the targets presented below.

Based on current economic and market trends, the Group targets:

- A strong increase in EBITDA, supported by the continuous growth in its Oil & Gas activity, additional savings as well as on-going deployment of its new competitive manufacturing routes;
- A continuous improvement in working capital requirement, beyond usual seasonal movements (peak outflow in H1), with a diminishing number of days of working capital requirement on both quarterly average and end of year;
- Capex around €180 million, consistent with the needs of its renewed industrial footprint.

Based on these current market trends and the objectives outlined above, the Group would respect its banking covenant at the end of the year.

3.9 Parent company results

Vallourec posted an operating loss of €14.9 million, an increase compared to 2017, which showed a loss of €13.3 million. The loss stems from the costs incurred by the holding company (personnel expenses, legal and communications fees, loan issue expenses and changes in provisions).

Financial income/(loss) (the difference between expenses and financial income) shows a loss of €57 million compared to a profit of €5.9 million in 2017. This change was due in part to an increase in net financial costs (€57.3 million in 2018, compared to €15.0 million in 2017) and also to some 2017 reversals of provisions for impairment of treasury shares and NSC interests sold (€20.8 million). The net financial cost consists of expenses and interest on bond issues and commercial paper, commissions from medium-term bank lines, and income from financial interests Vallourec granted to its subsidiary Vallourec Tubes.

Corporate income tax was a gain of €37.2 million, which came from the definitive recording of the tax savings resulting from the use of losses of Assurval, Vallourec Fittings, Vallourec Drilling Products France, Vallourec Umbilicals and Val 29, companies which left the tax consolidation group in 2018.

The net income for the fiscal year was a loss of €34.7 million, compared to a loss of €39 million at end-2017.

Subscribed capital, fully paid up, totaled €915,975,520, divided into 457,987,760 shares, each with a nominal value of €2.

Equity dropped by €34.7 million and was €4,135 million as at 31 December 2018, compared to €4,169.7 million as at 31 December 2017.

Financial debt amounted to €2,341.5 million, up €170.9 million compared to 2017. This change is a result of the 12 April 2018 bond issue in the amount of €400 million (maturing in October 2023, annual coupon of 6.375%) and of the decrease in outstanding commercial paper established in October 2011, with a maximum amount of €1 billion, which as at 31 December 2018 totaled €161.4 million for maturities of up to one year, compared to €397 million in late 2017. This commercial paper program was rated B by Standard & Poor's.

In May 2018, Vallourec took out a credit line for €110 million with the European Investment Bank maturing in April 2027. This line of credit is available to finance the Group's Research & Development, and Digitization projects. As at 31 December 2018 the line had not been drawn.

To the Company's knowledge, fiscal year 2018 did not generate any of the expenses referred to in Article 39-4 of the French General Tax Code (CGI).

In accordance with Article D.441-4 of the French Commercial Code, the following tables provide a breakdown of the balance of trade payables and receivables by time past due as at 31 December 2018.

Time past due (D=31/12/2018) *In € thousand*	Current	0 to 30 days past due	31 to 60 days past due	61 to 90 days past due	91+ days past due	Total past due
Total amount of invoices concerned, all taxes included	585	-	-	-	-	-
Number of invoices of invoices concerned	10	-	-	-	-	-
Percentage of the amount of purchases, all taxes included	19.51%	0.00%	0.00%	0.00%	0.00%	0.00%
Invoices excluded, all taxes included	-					
Suppliers price difference, all taxes included	-					
TOTAL	**585**	**-**	**-**	**-**	**-**	**-**

Time past due (D=31/12/2018) *In € thousand*	Current	0 to 30 days past due	31 to 60 days past due	61 to 90 days past due	91+ days past due	Total past due
Total amount of invoices concerned, all taxes included	1,824	48	91	-	2	141
Number of invoices of invoices concerned	70	3	2	-	6	11
Percentage of the amount of purchases, all taxes included	10.38%	0.27%	0.52%	0.00%	0.01%	0.80%
Invoices excluded, all taxes included	816					
Suppliers price difference, all taxes included	-					
TOTAL	**2,640**	**48**	**91**	**-**	**2**	**141**

3.10 Location of main facilities

3.10.1 Property, plant and equipment

The Group's registered office is located at 27, avenue du Général-Leclerc – 92100 Boulogne-Billancourt, France. The premises are occupied under the terms of a nine-year lease with effective date 1 October 2015. The properties occupied by the Company and its subsidiaries are not owned by any of the Company's corporate officers.

As at 31 December 2018, the Group operated some 50 production facilities, almost all of which were owned on a freehold basis. These plants are located mainly in France, Germany, Brazil, China and the United States, reflecting Vallourec's international character (see Section 3.2.4 "The Group's facilities" of this Registration Document). The Group considers these plants an essential resource for conducting its various activities and a primary concern in its manufacturing resource planning.

The Group's property, plant and equipment (including assets held under finance leases) and biological assets held by consolidated companies had a net carrying amount of €2,750.3 million at the end of 2018 (€3,048.4 million at end-2017 and €3,706.0 million at end-2016). Property, plant and equipment mainly consists of property assets and industrial equipment:

- the Group's property assets mainly include factory buildings and administrative offices; and
- industrial equipment consists of steel-making and tube-manufacturing facilities.

The following items are described in the Notes to the Consolidated Financial Statements in Chapter 6, Section 6.1.7 of this Registration Document:

- analysis of property, plant and equipment by type and flow in Note 2.1;
- geographical distribution of industrial property, plant and equipment and intangible assets for the fiscal year (excluding changes in consolidation scope) in Note 2.1;
- Group commitments under the terms of finance leases by main due date in Note 34.

Details of capital investments made in 2018, which extended the Company's property, plant and equipment base, are provided above (see Section 3.7.2.3 "Industrial capital expenditure" of this Registration Document).

3.10.2 Environmental considerations relating to the Company's property assets

3.10.2.1 Operational facilities and environmental regulation

The Group's French facilities are subject to environmental protection regulations under a classified facilities system (ICPE), which imposes certain obligations according to the type of activity conducted at the site and the environmental hazards and nuisances concerned. These facilities comply with the following requirements:

- five facilities are subject to authorization and are therefore run in accordance with specific operating requirements issued via prefectural order, following the submission of an operating license application, consultations with various organizations and a public inquiry; as at 31 December 2018, all of these facilities held valid prefectural orders;
- one facility is subject to a register regime, *i.e.*, operated in compliance with standard operating obligations.

Vallourec's facilities in other countries are subject to similar local regulation, requiring specific permits in various areas relating to the environment, including water, air, waste and noise. All of the Group's foreign facilities have the prescribed permits, which are regularly renewed pursuant to local regulations.

3.10.2.2 Environmental situation of former industrial sites

Following its closure, the Anzin plant in northern France was sold to the Valenciennes urban community on 17 November 2004. A file containing soil studies was produced at that time, and decontamination work stipulated by the authorities was carried out; the quality of the groundwater at the site continues to be monitored using piezometric sensors.

All of the other sites sold (VPE, VPS, VCAV, CEREC, Spécitubes, Valti Krefeld plants, VHET Les Laumes, VD Aulnoye, VD Tarbes, VD Cosne, and the Saint-Saulve steel mill), underwent complete environmental investigations. The VDFR Cosne site also underwent groundwater monitoring and rehabilitation.

The situation of operational sites with regard to soil pollution is described in Chapter 4 "Corporate social responsibility" of this Registration Document.

The environmental constraints that may impact the Group's utilization of its tangible assets are described in Section 4.2.4 "Environmental commitment" and in the "Industrial and environmental risks" paragraph in Section 5.1.2 "Operational risks" of this Registration Document.

3.10.3 Changes in scope

The main changes in the scope of consolidation in fiscal year 2018 were as follows:

- on 18 April, Vallourec began a partnership with Interpipe, a Ukrainian manufacturer of seamless tubes, to produce in cooperation non-OCTG carbon seamless tubes for the European market;
- on 25 April, Vallourec finalized the sale of its "Drilling Products" business with the American oil services group National Oilwell Varco (NOV). The sale concerned Vallourec's industrial Drilling Products business in North America, the Middle East, the Netherlands, and France (one plant in Aulnoye-Aymeries);
- on 26 April, the Group sold Vallourec Fittings, a subsidiary that produces fittings in France (plant in Maubeuge) to Allied Group;
- on 2 July 2018, Vallourec finalized the sale of Vallourec Drilling Products France (plants in Cosne-Cours-sur-Loire and Tarbes), a French entity, to Altifort;
- since 16 November 2018, Vallourec has exercised joint control over Vallourec Umbilicals following the capital increase subscribed by Banque Publique d'Investissement (BPI) intended to finance its industrial development project. Vallourec and BPI hold 51% and 49% of the company respectively following the operation.

The main changes in the scope of consolidation in fiscal year 2017 were as follows:

- on 26 January 2017, Vallourec and Asco Industries finalized the latter's acquisition of a majority interest in the Saint-Saulve steel mill, which appeared in the statement of financial position as at 31 December 2016 under assets and liabilities held for sale. 60% held by Asco Industries and 40% by Vallourec Tubes France, Ascoval S.A.S. has been consolidated under the equity method since the transaction date. The assets of the Ascoval steel mill (40% held by Vallourec and 60% by Asco Industries) were the subject of a bid by the Altifort Group. The takeover plan was approved by a court decision dated 19 December 2018, effective 1 February 2019. It was then cancelled by a subsequent decision on 27 February 2019. The company Ascoval is currently awaiting the outcome of the insolvency procedure.

The main changes in the scope of consolidation in fiscal year 2016 were as follows:

- on 29 April 2016, Vallourec finalized the transfer of the Vallourec Heat Exchanger Tubes subsidiary to American Industrial Acquisition Corporation (AIAC);
- in August 2016, Vallourec purchased all the shares of VAM Holding Hong Kong Ltd, a company holding, and VAM Changzhou Oil & Gas (a threading business in China). The two companies were consolidated as a joint venture until 30 September 2016, and were then fully consolidated in the Group's financial statements;
- on 1 October 2016, Vallourec finalized the transfer of the tubular business of Vallourec Tubos do Brasil (VBR), a wholly owned subsidiary, to Vallourec & Sumitomo Tubos do Brasil (VSB), a 56%-owned joint venture. This transaction resulted in Vallourec acquiring control of VSB (renamed Vallourec Soluções Tubulares do Brasil), by increasing its holding from 56% to 84.6%, with the remaining 15.4% non-controlling interests being transferred to the NSC and Sumitomo Corp. partners. The new VSB entity has been fully consolidated in Vallourec's financial statements since 1 October 2016, and the stakes of the Japanese partners are recognized as non-controlling interests;
- on 28 October 2016, Serimax, one of the worldwide leaders in onshore and offshore welding solutions, and Technip, a worldwide leader in project management, engineering and construction in the energy sector, and a longstanding Serimax customer, finalized a strategic partnership in the field of welding subsea line pipes. Under this partnership, Technip purchased a 20% stake in Serimax;
- on 2 December 2016, Vallourec held 99.03% of the capital of Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe Co., Ltd) after the acquisition of a majority stake of 50.61% in November and the success of the compulsory unconditional public offering. Vallourec Tianda (Anhui) Co., Ltd was consolidated under the equity method (19.5%) in 2016 and the takeover was recorded in the Group balance sheet on 31 December 2016.

3.11 Related party transactions

Transactions with related parties are described in Note 21 to the consolidated financial statements, "Information on related parties" in Chapter 6 of this Registration Document.

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Introduction

The Vallourec Group has long taken a proactive approach to corporate responsibility issues, in an effort to act responsibly. Vallourec's approach to these social issues is formalized in the Group's Sustainable Development Charter, which is available at www.vallourec.com.

At the end of 2018, the Supervisory Board decided to create a new special committee in charge of assisting it in issues involving a Corporate Social Responsibility (CSR) strategy. This new committee is responsible for ensuring that the Group best anticipates the challenges, opportunities and non-financial risks associated with its business in order to promote long-term and harmonious value creation.

In the past decade, the Group has made strong commitments in these areas, in particular with the 2008 signing, along with a global employee representation organization, of its "principles of responsibility" and by becoming a signatory to the United Nations Global Compact in 2010. It has also signed several commitments to promote climate action and the circular economy, under joint initiatives with the Afep, the Medef and the *Cercle de l'Industrie,* as well as the Sustainable Development Charter of the International Steel Federation. Lastly, the Group has adopted a "carbon policy" to mobilize the Company on the many facets of these issues.

In this context, the Group must formalize its commitments to promote the Sustainable Development Goals the UN defined in 2015. Specifically, and based on the proposals of the CSR Committee, the Group could make commitments towards four goals:

- goal 5, to achieve gender equality and empower all women and girls;
- goal 7, to ensure access to clean energy, including cleaner fossil energies, and promote energy efficiency;
- goal 8, by confirming its commitment to respect labor rights and offer safe working conditions for all categories of workers; and
- goal 12, to promote sustainable production methods by significantly limiting the need for natural resources.

Each of these goals will be associated with an indicator and with a 2030 target, and the means needed to achieve them will be indicated. More generally, the medium/long-term CSR objectives will be set and published in 2019.

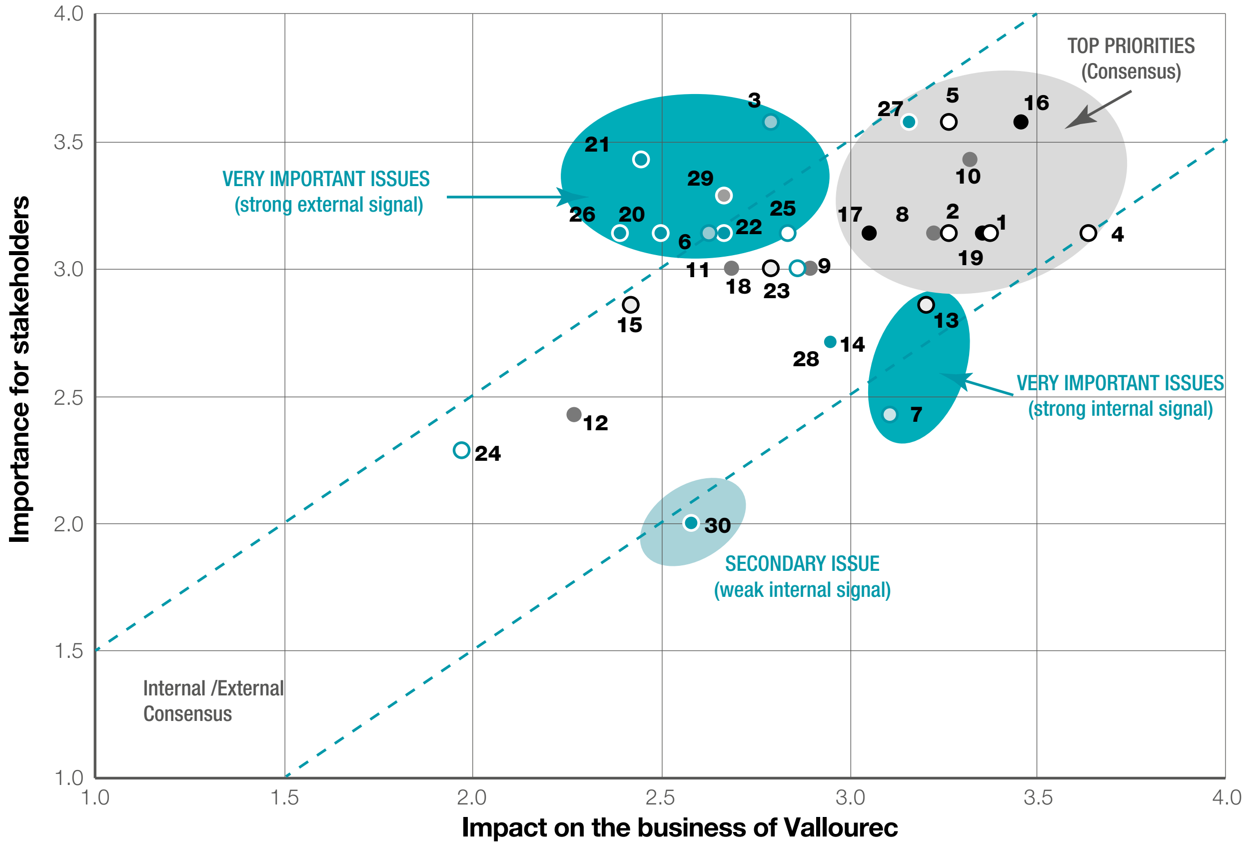
1. Since 2014, the Sustainable Development Department has been implementing a strategic five year plan for Sustainable Development and Corporate Social Responsibility (CSR), which is integrated into the strategic guidelines of the Group, updated annually and monitored by the Supervisory Board. Accordingly, the strategic plan was presented to the Executive Committee in July 2018. It was broken down by specific priorities for each of the four Regions. It was also presented to the Board's CSR Committee.

   It relies on the following seven cornerstones:

   - strengthening governance in Sustainable Development and CSR;
   - setting medium-term objectives;
   - increasing consideration of Sustainable Development issues in the Group's business model;
   - involving more employees in their daily actions to promote CSR;
   - developing the Group's social commitments;
   - strengthening ongoing actions for progress; and
   - obtaining institutional recognition of the efforts made.

   Accordingly, in strengthening governance in Sustainable Development matters, in 2016 the Group prepared, with the aid of a specialized consultant, its "materiality analysis" in an effort to identify the issues it faced, both from the perspective of its management and that of its stakeholders. The analysis, which was conducted using proven methodology, allowed the Group to get the opinion of our main stakeholders on the 30 issues that had been identified as important and specific to the Company's particularities. The opinion gathering process was based on questionnaires and interviews, with senior executives, employees, investors, customers, suppliers, NGOs and the media. In all, 200 questionnaires were sent with a total response rate of nearly 60%. The results of the analysis are as follows:

Materiality Matrix: results



Legend

1	Energy transition	11	Stakeholder dialogue	21	Non-renewable resources consumption and circular economy
2	Resilience of the business model	12	Transparent and fair tax strategy	22	Air pollutions
3	Sustainable product design	13	Quality of social dialogue in all economic circumstances	23	Water footprint and water pollution
4	Customer Relationships / Satisfaction	14	Fair compensation and benefits	24	Biodiversity
5	Innovation strategy and sustainability	15	Diversity	25	Eco-design of processes and industrial equipments
6	Climate change adaptation	16	Occupational safety	26	Sustainable logistics
7	Trade barriers	17	Occupational health	27	Respect of Human Rights
8	Corporate governance	18	Noise	28	Local socio-economic development & local content
9	Accountability and transparency	19	Employees' skills and development	29	Responsible procurement standards and supplier relations
10	Respect for ethics	20	Energy use & own GHG emissions	30	Corporate citizenship

Through this analysis, Vallourec was able to confirm that the issues identified were pertinent, and that the importance given to them by the Company was in line with the perspective of its stakeholders. It also demonstrates that the strategic plan actions are generally addressing the needs, while at the same time highlighting that some matters could be taken into further consideration. The analysis will be conducted again in 2020 in order to take into account the changes within the Group's businesses and its new industrial footprint. The methodology will also be reviewed to expand the contributors' base in order to achieve the strongest learning outcomes possible.

2. Chapter 4 focuses in the first place on the vigilance plan of the Vallourec Group, established in application of Law 2017-399 of 27 March 2017 on the duty of vigilance of parent companies and contracting companies, re-anchoring it within the framework of commitments previously made by the Group, including those within the field of Corporate Social Responsibility.

3. This Chapter, which is supplemented by Sections 3.2 "Description of the Group's business model and activities", 3.6 "Transformation Plan", 3.8 "Outlook", and Section 5.1 "Risks factors" of this Registration Document, also contains the consolidated statement of non-financial performance mentioned in Article L.225-102-1 of the French Commercial Code.

   The other indicators presented were constructed in reference to the Global Reporting Initiative (GRI), which aims to facilitate the measurement of companies' economic, environmental and social reporting indicators on a global basis.

   This information factually demonstrates the Group's commitment to Corporate Social Responsibility and highlights the results of its key actions.

The way that this information was gathered and the limitations of this type of data collection are described in the methodological notes found in Appendix 3 to this Chapter. One of the Company's Statutory Auditors conducted audits with a moderate level of assurance as to all of the information presented in the consolidated statement of non-financial performance, and issued an opinion with reasonable assurance on selected indicators, which resulted in the report that appears in Appendix 1 to this Chapter. The indicators that were verified with a reasonable level of assurance are preceded in the text and in the Appendices by the symbol ☑.

4. This information forms the basis for the periodic evaluations of the main non-financial agencies or specialized SRI funds such as Vigeo-Eiris, RobecoSAM, Oekom, MSCI, Sustainalytics, CFIE, Ecovadis, etc. Even though each of these bodies has its own evaluation methods, the overall finding is a rating of B+ on a scale of A to D based on an expert opinion. This assessment is consistent with the Group attaining the Advanced level of the Global Compact Communication on Progress, which it has now had for two years, and with its belonging to the most committed global enterprises in terms of human rights, according to the Vigeo Eiris study published in early 2017. The Group is no longer temporarily included in the Euronext Vigeo and FTSE4Good indices, not because of an insufficient commitment to CSR, but because these bodies still considered its capitalization to be insufficient in 2018. Conversely, the Group continues to be included in the Ethibel "EXCELLENCE" indices, attesting to Vallourec's quality as a sector leader in CSR. Lastly, it is also appropriate to mention that the Group received a rating of A- in 2018 for the third time by the Carbon Disclosure Project for its actions to promote a low-carbon economy The Company aims to maintain the level of these various assessments.

4.1 Vigilance plan

In an effort to continue the commitments mentioned above, Vallourec established, both for itself and for all of the subsidiaries it controls, a vigilance plan in application of Law 2017-399 of 27 March 2017 on the duty of vigilance of parent companies and contracting companies, which requires establishing a plan containing reasonable vigilance measures specific to identifying risks and preventing serious violations of human rights and fundamental freedoms, the health and safety of individuals and the environment, resulting from the activities of the Company and all of the subsidiaries it controls, as well as those of subcontractors or suppliers with which it has maintained an existing commercial relationship, when these activities are related to such relationship.

This process is consistent with the priorities that the Group has set for itself, the pertinence of which has been confirmed by the results of the materiality analysis presented above. In fact, four issues among the ten deemed to have absolute priority, both by our external stakeholders and by corporate management, form an integral part of the points covered by the vigilance plan. As concerns environmental issues, the materiality analysis classifies them as being very important. Vallourec's vigilance plan thus fits in perfectly with a continuous improvement process, in conformity with Vallourec's proactive approach in areas of corporate social responsibility.

A working group comprised of representatives from the Sustainable Development Department, the Legal Department, the Human Resources Department, the Purchasing Department and the Internal Control and Risk Management Department was created for the purpose of establishing the plan.

4.1.1 Identification and evaluation of risks

Generally, the Risk Management Department identifies, with the operational and functional departments, the main risks to which the Group is exposed, analyzes them and creates a risk map. Risk mapping is done for each of the major entities, Regions, and for the Group as a whole. Each map incorporates the main risks, along with their impact, probability of occurrence, and current level of control. The mapping process was adapted to incorporate the requirements of the Sapin II Law of 9 December 2016.

Priorities are determined not only according to probability of occurrence and/or consequences of risks and control level, but also according to the control improvements made, including the benchmark practices in the subject area.

As concerns risks to human rights and fundamental freedoms, the health and safety of individuals as well as the environment, which result from the activities of the Company and from all of the subsidiaries it controls, as well as from the top subcontractors or suppliers with which it maintains an established business relationship, Vallourec has particularly identified the following risks which specifically result from the Group's activities:

1. the Group conducts a significant part of its business in developing countries, in particular because of its strategy of being located close to its customers in these countries. The risks of serious violations of human rights and fundamental freedoms, to the health and safety of individuals and the environment, associated with activities carried out in these countries, whether directly or through subcontracted companies, may result among other things from political, economic and social instability (nationalization and expropriation of assets, uncertainty as to applicable law and the application of laws, impact of sanctions, accidents, terrorism, etc.);
2. the importance of the industrial labor force to the Group's business makes it essential to manage employees' health and safety. Health and safety management is a priority for the Group and a fundamental value for Vallourec. The Group's health and safety policy was also strengthened at the end of 2016;
3. the very nature of the Group's industrial activity carries environmental risks. Due to their nature, the Group's activities are the source of noise pollution, require the use of hazardous chemical products and substances, generate waste that is classified as hazardous, may quantitatively or qualitatively impact local water resources, result in soil pollution and give rise to harmful air emissions.

Just like any other organization, the Group has been faced with the risk of non-compliance with its core values under the Code of Ethics, supplemented by the Anti-Corruption Code and the Group's internal rules and policies.

4.1.2 Management of identified risks

Management of identified risks simultaneously includes preventive or mitigating measures and a system for monitoring and evaluating the efficiency of the measures implemented.

Generally, Vallourec relies on a risk management policy deployed by the Risk Management Department, which also ensures it is consistent and all-encompassing. Risk management is controlled by committees that meet once a year, for each concerned entity, comprised of the Risk Management Director or their representative, the Director of the aforementioned entity, their main aides and the functional managers concerned by the specific risks, where applicable. Each committee meeting handles the following matters:

- validation of analysis, allocation and follow-up of action plans for each priority risk;
- validation of the key risk indicators, which ensures the relevance of new controls after closure of the action plan, and the on-going application of such controls.

The Group's Risk Management Director organizes centralized risk management reporting, in cooperation with the Risk Managers from the main entities, to check on the progress of the action plans and ensure they are consistent with the priority guidelines at the Group level. Additional information appears in Section 5.2 "Risk management and internal control system" of this Registration Document.

In order to progress and reduce the risks in question, the Group relies on the Vallourec Management System (VMS), whose fundamental objective is to improve the Group's performance in all of its operating processes, and which thus serves to develop risk prevention, control process variability and improve their efficiency. It uses numerous specific tools such as Lean Management and the "6 Sigma" methodology, and strives to strengthen project management methods. It also ensures that initiatives are consistent with the strategic plan and that they deliver continuous progress. It also ensures that the requirements for managing quality (ISO 9001, ISO/TS 16949, API and ASPE), health and safety (OHSAS 18001), the environment (ISO 14001) and energy (ISO 50001) are taken into account.

The specific risks to human rights and fundamental freedoms, the health and safety of individuals, and the environment, resulting from the Group's activities, as well as from its leading subcontractors or suppliers, with which it maintains an established business relationship, are managed thanks to the structure and measures described below.

RISK MANAGEMENT IN HUMAN RIGHTS AND FUNDAMENTAL FREEDOM ISSUES

Structure

Risk management in human rights and fundamental freedom issues is the joint responsibility of the Human Resources Department, as concerns the Group's employees, and the Purchasing Department, as concerns the subcontractors or suppliers with which it maintains an established business relationship (see the "Risk Management linked to the Supply Chain" paragraph below), in close cooperation with the Ethics and Compliance Officer.

Measures

As an international company, Vallourec has taken on significant corporate social responsibility commitments, in particular with regard to respect for human rights and universal fundamental principles that protect the dignity, respect and freedom of employees.

Therefore, Vallourec strongly condemns:

- all forms of forced or compulsory labor;
- child labor;
- any difference in treatment between individuals that is based on criteria other than their skills or aptitudes; and
- any act of physical or mental violence, or the threat of such acts.

Conversely, it notably promotes:

- a safe and healthy work environment that ensures physical and mental integrity; and
- the employees' freedom of association and collective bargaining.

In 2008, Vallourec officially undertook to comply with the fundamental principles enacted by the international conventions of the International Labour Organization, in the "Agreement on the principles of responsibility applicable in the Vallourec Group," which was approved by the European Committee, forming an integral part of the Code of Ethics. Vallourec has also been a signatory to the UN Global Compact since 2010.

By way of example, wherever the Group operates, it has made employer-employee dialog a priority. This is organized in each country, in accordance with local regulations. To date, at least 82% of the workforce are covered by industry- or company-wide collective agreements. The Group's actions in terms of employer-employee dialog are more extensively described in Section 4.2.2.3 "Social relations" in this Registration Document.

Vallourec affirms its commitment to diversity and to combating discrimination in the workplace through the Code of Ethics.

Respect of men and women, their dignity, their diversity and the variety of their cultures is at the heart of the commitment of Vallourec's teams. Under the roll-out of the Code of Ethics, a program to educate all employees on the issue of discrimination was completed using examples from daily life.

In terms of gender equality, the Group's policy is defined around strengthening women's presence in operational business lines, in particular those of production, and in increasing women's access to leadership roles.

- Female employees with high potential can receive mentorship from the Group's senior executives. On 8 March 2017, the Group also launched Women@Vallourec, a network of women and men dedicated to debating and discussing equality and the place of women within the Group, which aims to reveal true proposals for action. More precisely, Women@Vallourec's mission is to improve diversity, starting with gender diversity, and to thus assist the Group in its transformation by improving performance and innovation.
- On 8 March 2018, Vallourec signed in the Middle East the United Nations World Charter on "Women's Empowerment Principles" (WEP), thereby committing to make every effort to offer women and men the same possibilities to fully realize their potential. The principles of the Charter in particular concern education, training, and professional development of women, along with the commitment to equality at the highest levels of business.
- In early 2019, four priority actions were identified: to relaunch and develop mentorship, systematically suggest female candidates for positions open internally, adapt the work environment, and develop women's participation in decision-making processes.

- Compensation surveys have shown no gender gap.
- Indicators are in place to ensure follow-up and accountability in the actions led by the Group.

In terms of equal opportunities, the Group strives to promote the continued employment of workers with disabilities. These actions are more extensively described in Section 4.2.2.6 "Diversity and equal opportunities" of this Registration Document.

Vallourec sees to it that these rights and principles are respected within the Group and at its subcontractors by incorporating it into its regular evaluations. The actions taken with respect to subcontractors are more extensively described below.

The Group's responsibility does not stop at the doors of its offices and plants, but extends way beyond, through its influence in the community. An engaged partner, concerned for respecting a balanced development model, Vallourec ascribes major importance to the communities that surround it and strives to establish relationships of mutual understanding and trust with them. The Group undertakes actions that support education, healthcare and local development. Very active in Brazil, the Group has multiplied its initiatives there, including transforming the *Cine Theatro* building in Belo Horizonte into a cultural center dedicated to artistic production.

Vallourec also strives to prevent specific risks in terms of compliance with competition and anti-corruption rules. The implementation of the Group's vigilance plan and actions in ethics and compliance matters are more extensively described in Section 4.2.1 "Ethics and compliance" of this Registration Document.

RISK MANAGEMENT LINKED TO THE SUPPLY CHAIN

Structure

Vallourec's Purchasing Department is centrally structured to have a general view of the suppliers and supply chain, by using standardized processes between the Regions and appropriate information systems. A particular process of overseeing supplier risks is deployed at each of the Regions and centralized purchasing departments to identify, analyze and rank these risks. Ongoing monitoring of the action plans to mitigate or eliminate these risks is conducted on a quarterly basis. Moreover, Vallourec's policy is to establish sustainable contracts as much as possible with its suppliers, which are not only limited to structuring the commercial transaction but also provide accountability over time for external stakeholders on performance and requirements that are linked to Vallourec's values.

Measures

Within the context of this responsible purchasing policy, Vallourec has established numerous tools and processes aimed at better controlling suppliers and directly considering social and environmental responsibility criteria, and sustainable development, ethics and safety issues. In application of this policy, Vallourec is leading formal and regular evaluation campaigns of its suppliers on social and environmental responsibility, along with progress action plans. All suppliers with significant activity (greater than €1 million per year) are subject to a request for formal evaluation on the criteria of social and environmental responsibility, namely the environment, ethics, respect of human rights and labor rights, and control of their own suppliers and subcontractors. The results of these evaluations are systematically taken into account in Vallourec's decisions and guidelines with regard to its suppliers and subcontractors.

In accordance with the new U.S. laws and European directives, Vallourec has also committed to prohibiting its suppliers' use of potential "Conflict Minerals" coming out of certain African countries.

The implementation of the vigilance plan and the actions pertaining to relations with subcontractors and suppliers are described in Section 4.2.3 "Relations with stakeholders" of this Registration Document.

RISK MANAGEMENT IN HEALTH AND SAFETY ISSUES

Structure

The Health and Safety policy that was updated in 2016 entails a strengthened health section. Entities thus aim to further investigate the health risks specific to the processes, while defining the means designed to eliminate or attenuate them. There are numerous issues, in particular concerning our processes, which cover chemical risk, noise, air quality and ergonomics at workstations.

Measures

Safety is the Group's main priority, and it aims to become a benchmark and a model for success in this area. At the end of 2018, 98% of Vallourec sites were certified OHSAS[1] and represented 100% of production in metric tons. Each year Vallourec renews its "CAPTEN+ Safe" safety improvement program, which has particularly focused on the major risks that could lead to a fatal accident and, since 2016, specifically on subcontractors.

In order to prevent the occurrence or limit the impact of risks linked to the Group's activities in emerging countries, the Group implements systematic evaluation procedures for security and health risks, as well as emergency protection procedures, which are systematic for each of the high-risk countries where the Group frequently deploys its personnel. It also implements specific procedures for other countries, with the support of recognized external providers in all cases.

The Group respects all regulations, standards and certifications in the countries in which it markets its products, which primarily aim to ensure the safety and protect the health of users by demonstrating the product's compliance with the regulatory requirements. They relate principally to the properties of fire resistance and slip resistance and to limits on toxic emissions.

The safe use of chemical products and substances is of critical concern to Vallourec. The database containing their details is regularly updated to ensure rigorous monitoring of developments and reactions and thus prevent harmful effects. All the products or substances entering production sites are monitored and authorized by local HSE managers. Product substitution plans that have been deemed critical were also defined. At the end of 2018, 78.7%[2] of 390 substances that were identified as CMR[3] were replaced[4]. 147 products were nevertheless identified as being unable to be substituted due to technical problems or a lack of a substitute on the market. Their uses are thus supervised by the HSE teams.

Hazardous waste is specifically managed: handling and storage are subject to strict safety rules to preserve the environment and health of the staff handling them.

The implementation of the Group's oversight plan and its actions in health and safety matters are more extensively described in Section 4.2.2.2 "Safety and health" of this Registration Document.

(1) *OHSAS 18001: International guidelines relating to occupational health and safety, published in 2001 under the authority of the International Labour Organization.*

(2) *Note that the products identified as non-substitutable are considered as substituted and included in the percentage calculated.*

(3) *Chemicals or preparations that may have various adverse effects on human health. These are classified into "CMR" categories. Within the meaning of Article R.231-51 of the French Labor Code, substances or preparations are considered CMR agents when they are carcinogenic (C), mutagenic (M) and/or toxic for reproduction (R).*

(4) *Some sites reported their inventory. New substances have also been officially classified as CMR.*

RISK MANAGEMENT IN ENVIRONMENTAL ISSUES

Structure

In accordance with Group rules and guidelines, the Director of each site is responsible for setting up an effective environmental management system that is tailored to the local context and the site's activity. The Director appoints an Environment Manager who heads up all actions in this area and functionally reports to the HSE Director of each region.

The Environment Department, reporting to the Sustainable Development Department, is tasked with preparing the Group's environmental policies, monitoring their applications, and coordinating actions. It is supported by the HSE Managers of the Regions and production sites, who are responsible for implementing these policies.

The objective of this organization consists of structuring the organizations by Region or country in order to better take into account the specific national regulations.

Measures

Vallourec notably aims to minimize the impact of its activities on the environment. This commitment is clearly explained in the Sustainable Development Charter published by the Group in 2011, and in the Group's Environmental Policy, which was signed by the Chairman of the Management Board and published in 2014. In early 2018, the Group also enacted a carbon policy to cover all of the corresponding issues.

Risk assessments have led to the establishment of measures designed to reduce the likelihood of accidents and limit their consequences and environmental impact. These measures relate to the design of the facilities, strengthening of protective measures, organizations to be put in place, and even compensation for any environmental impact if it seems inevitable.

Vallourec seeks to limit the industrial and environmental risk inherent in its activities by setting up efficient organizational structures and quality, safety and environmental management systems, obtaining certification or assessing its management systems, performing stringent inspections and audits, training staff and heightening the awareness of all parties involved, as well as by implementing a policy of environmentally friendly investments that reduce industrial risks. Each investment project undergoes a mandatory, formal evaluation. A multidisciplinary committee meets monthly to examine the various characteristics, evaluating impacts and determining whether to approve them.

The Group endeavors to strictly comply with locally issued operating authorizations and, more generally, with the applicable environmental laws and regulations, according to the principles presented in its Sustainable Development Charter and the policies that have been approved by the Management Board. The Group also strives to take all precautions to allow it to prevent environmental incidents. First of all, the Group, which has low greenhouse gas emissions, ascribes specific importance to publishing a complete carbon footprint. In 2018, it published its medium-term emissions objective for the first time, and is studying the various ways it can further reduce the carbon footprint from its processes.

Total provisions and guarantees for environmental risks are presented in Note 17 to the consolidated financial statements. This provision covers the cost of treating industrial land and cleaning up the mine once resources have been exhausted. The management of industrial and environmental risks is presented in general terms under Section 5.1.2, paragraph "Industrial and environmental risks".

The Group's commitments in environmental matters and the results of the policies implemented are more extensively described in Section 4.2.4 "Environmental commitments" of this Registration Document.

4.1.3 Whistleblowing and reporting systems

The Code of Ethics provides that the Group's employees may report behaviors that violate the values and principles of the Code by contacting their line manager, their human resources manager, the Ethics and Compliance Officer, or one of the local ethics contacts. Moreover, a dedicated email address is provided to employees on the Group intranet under "Ethics and Compliance." This allows behaviors that violate the Code of Ethics or internal procedures to be directly reported to the Ethics Officer.

In North America, a telephone line has long been provided to employees who wish to provide information anonymously on non-compliance with ethics and compliance rules.

In addition to these traditional notification methods, the Vallourec Integrity Line whistleblowing system was rolled out within all the Group's entities in 2018. This system is accessible in eight languages to employees and external and occasional associates of the Group, but also to customers, suppliers, service providers and other external stakeholders through a secure website hosted by an independent company. The rollout of this whistleblowing system was announced in a communication that was widely disseminated to the Group. A link to the dedicated site is available from Vallourec's website.

The scope of the whistleblowing system is broad, and includes behavior contrary to the Code of Ethics, the Anti-Corruption Code of Conduct, and internal rules and policies. It notably includes allegations of anti-competitive practices, corruption, fraud, conflicts of interest, discrimination and harassment at work, as well as irregularities that could affect Vallourec's activity or reputation that are linked to human rights and fundamental freedoms, the health and safety of people, or the environment. The system allows behavior to be reported anonymously.

An internal policy specifies the terms of use for the whistleblowing system and the rules that apply to data protection and processing.

The 2018 rollout of the Vallourec Integrity Line led to an increase in the number of reports made. As in previous years, the reports primarily came from the United States and Brazil. 80% percent pertained to human resources issues, with the remaining 20% concerning fraud, conflicts of interest, property damage, and other issues such as the environment or security. None of these reports proved to be confirmed violations: 45% of cases led to disciplinary sanctions, including dismissals (9%). None of these cases had a significant impact on the Group.

4.2 Consolidated statement of non-financial performance

In accordance with Article L.225-102-1 of the French Commercial Code, the Consolidated statement of non-financial performance describes how the Group takes into account the consequences of its corporate social responsibility activities, as concerns respect of human rights and combating corruption and tax evasion. It describes the main risks relating to the business and, where relevant and proportionate, the risks created by the Group's business relationships, products or services. It also describes the policies applied, including any due diligence procedures implemented to prevent, identify, and mitigate the occurrence of risks, and the results of these policies, including key performance indicators.

The results of the general risk mapping have been crossed with the results of the materiality analysis in order to determine the Group's main non-financial risk exposure. The material nature of the risk has been assessed based on the probability of occurrence, the significance of the impact and of the exposure. The list thus created was presented to the CSR Committee at its meeting of 25 January 2019, and was then approved by the Management Board when preparing its management report.

Non-financial information category	Definition of risk (or of opportunity)	Policy applied	Key performance indicators
Consequences of global reactions to climate change	• Business model risk • Image risk • Customer risk	• Sustainable Development Charter Carbon policy • Energy Transition Opportunities	• Carbon analysis
Adaptation to the consequences of climate change	• Risks of flooding, heat waves and prolonged drought, disturbance of water resources, hurricanes	• Adaptation plan by site • Follow-up on insurance recommendations • Capex verification	• % of sites with an approved and internally controlled adaptation plan
Sustainable use of resources/ Circular economy	• Increase of regulatory constraints and of costs • Opportunity for economic (customer service) and image enhancement	• Sustainable Development Charter Environmental Policy • Public commitment	• Raw materials footprint • Waste recovery rate
Energy efficiency	• Energy costs	• Energy Policy • GreenHouse project	• Energy consumption in kWh/metric ton processed • % of renewable energy • Amount of corresponding investments
Water management	• Shortage risk • Pollution risk	• Sustainable Development Charter • Environmental Policy	• Water intake • Internal reuse rate • Water Impact Index • HSE investments amount
Waste management	• Pollution risks • Health risks • Hazardous waste risks	• Sustainable Development Charter • Commitment to responsible performance • By-products Project • Plastic Policy being drafted	• Recycled waste rate • % hazardous waste • HSE investments amount
Air quality	• Air pollution risks: steam, gas and particle emissions	• Sustainable Development Charter Air Policy	• Emissions measurement • HSE investments amount
Culture of ethics (excluding anti-corruption)	• Non-compliance with the Code of Ethics • Image risk	• Code of Ethics • Compliance program • e-learning • Responsible purchasing policy	• Number and type of internal/ external alerts
Diversity	• Gender equality	• Code of Ethics • Mentoring for women • Presence of women in succession plans • Women's network, etc.	• Rate of women managers and executives • Rate of women senior executives
Occupational health	• Health risks linked to the use of chemical products and substances • Health risks linked to noise pollution exposure • Occupational illnesses	• Health Policy • Evaluation of sanitation risks in certain countries • CMR classified product substitute plans • Whistleblowing and reporting systems • Action plan to prevent noise pollution • Workstation ergonomics	• CMR products replacement rate • HSE investments amount • Mapping of employees' exposure to noise • Noise measurement on site outskirts • Number of confirmed occupational illnesses

Occupational safety	• Accident risks	• Capten+Safe Plan • Particular focus on fatal accidents and subcontractors • Evaluation of security risks in certain countries • Whistleblowing and reporting systems	• LTIR, TRIR • OHSAS certification rate • HSE investments amount
Employees' skills and development	• Key personnel departure risk • Loss of skills and expertise risk	• People review • Succession plans • Expert program • Vallourec University • Training Policy • Agreement on the principles of responsibility of the ILO conventions	• Turnover rate and reasons for termination of employment • Social Barometer (response rate/ satisfaction rate) • Number of training hours
Employee relations	• Risk of deterioration in the social climate and employees' commitment	• Employer-employee dialog • Agreement on the principles of responsibility of the ILO conventions	• Employee survey • Percentage of the workforce covered by business line or Company collective agreements
Quality of products and services/ customer relations	• Claims risk • Image risk • Opportunity to strengthen customer relations	• Commercial Excellence Program	• Number of claims • Severity of claims • Claims processing time
Corruption	• Public markets access risk • Conviction risk • Image risk	• Code of Ethics • Anti-Corruption Code of Conduct Responsible purchasing policy • Internal procedures: supervisors/gifts/sponsoring	• Number of suppliers included in the CSR formal evaluation process
Equal opportunity/ discrimination risk	• Non-compliance with the Code of Ethics • Inappropriate compensation • Image risk	• Code of Ethics • Compliance program • Agreement on the principles of responsibility of the ILO conventions • e-learning • Responsible purchasing policy • Whistleblowing and reporting systems	• Number and type of internal/ external alerts

The Consolidated statement of non-financial performance also contains social, environmental, and societal information, information on the fight against corruption and tax evasion, information on human rights initiatives mentioned in Article R.225-105-1 of the French Commercial Code, where relevant to the aforementioned main risks or policies, on a worldwide scope. Unless otherwise specified in the text, all information contained in this chapter refers to Vallourec, all of its subsidiaries as defined by Article L.233-1 of the French Commercial Code, and the companies Vallourec controls as defined by Article L.233-3 of the French Commercial Code.

A concordance table showing the information required under the aforementioned article and the information presented in this chapter appear in Appendix 4 hereto.

4.2.1 Ethics and compliance

Risks relating to ethics and compliance are presented in Section 4.1 "Vigilance Plan" and in Section 5.1.3 "Legal and tax risks" of this Registration Document.

The organization of ethics and compliance falls under the Group's Legal Department. The position of Ethics and Compliance Officer is held by the Group's Legal Director, who helps implement the Code of Ethics and determines, with the Ethics Committee, which the Legal Director leads, the internal compliance policies. The Ethics and Compliance Officer reports to the Chairman of the Management Board.

The Ethics Committee comprises representatives from functional departments (Legal, Purchasing, Human Resources, etc.) and operating divisions. It must hold meetings at least once per quarter in order to determine, at the initiative of the Ethics and Compliance Officer, the ethics and compliance guidelines and ensure they are effectively rolled out.

The Ethics and Compliance Officer relies on a network of 12 local ethics correspondents who are organized by geographic areas, as well as on the legal managers from the operating divisions or Regions. The local ethics correspondents are tasked with disseminating the values and principles of the Group's Code of Ethics in entities worldwide, and making sure that its internal procedures are properly applied. Since 2015, management of the network of local ethics correspondents has been strengthened: they participated in bi-monthly information meetings organized by the Ethics and Compliance Officer, at which internal procedures were presented, along with the current regulatory issues regarding anti-corruption, or with regard to competition rules.

An ethics and compliance newsletter is disseminated monthly to the main senior executives of the Group, to Ethics Committee members, to local ethics correspondents and to the legal managers of Regions or divisions.

Three Group procedures formalize the principles and guidelines that were already contained in the Global Legal Compliance Program, which has been rolled out globally since 2011: the policy relating to recourse to sales agents, gifts and invitations, philanthropy and sponsorship, local partners, lobbying and political life.

Non-compliance with anti-corruption laws and regulations, or with competition rules, exposes the Group's employees to disciplinary sanctions and even termination.

As concerns the application of Law 2016-1691 of 9 December 2016 relating to transparency, the fight against corruption, and the modernization of economic life, the Vallourec Group has launched several actions:

- Vallourec has registered in the new public digital directory of representatives of interest to public bodies of the *Haute Autorité pour la transparence de la vie publique* (High Authority for Transparency of Public Life) (HATVP) and an internal reporting system has been established to formalize an activity report, which is to be sent to the HATVP annually;
- as concerns the obligations to prevent and detect corruption, the internal system has been adapted and strengthened. Accordingly, an Anti-Corruption Code of Conduct has been prepared to supplement the Group's Code of Ethics, and a new professional whistleblowing system, the Vallourec Integrity Line, was rolled out, to supplement the traditional alert methods;
- lastly, in 2018 the Vallourec Group obtained an Ethic Intelligence Program anti-corruption certification for the design of its corruption detection and prevention program. This certification confirms that the program addresses the Group's fraud and corruption risks, and corresponds to the best practices and regulations applicable in the fight against corruption. The certification also allows it to promote and strengthen the Group's values in terms of integrity and ethics with outside commercial partners and stakeholders.

4.2.1.1 Code of Ethics and Anti-Corruption Code of Conduct

The Group's ethical standards are presented in a seminal document, the Code of Ethics.

The Code of Ethics is a set of core values that includes integrity and transparency, excellence and professionalism, performance and responsiveness, respect for others and mutual commitment.

It provides a framework for each employee's day-to-day activities through behavioral guidelines based on these values. The guidelines reflect the way that Vallourec seeks to manage its relationships with all of its partners and stakeholders, including its employees, customers, shareholders and suppliers, and constitute the Group's benchmark in implementing its sustainable development and corporate social responsibility plans.

In 2016, an amended version of the Code of Ethics was adopted and rolled out within the Group to reinforce Vallourec's commitments in the fight against corruption and respect for the rules of competition, while maintaining the values and principles of action with regard to its employees, partners, customers, suppliers and stakeholders. The amended version includes the guidelines already contained in the Global Legal Compliance Program and the procedures published in 2015.

Vallourec's Code of Ethics applies to all Group consolidated companies. Each employee is personally responsible for implementing its values and principles and for complying with the rules it sets out.

The Group's various reporting lines ensure that it is communicated to all Group employees. To that end, it has been translated into eight languages (French, English, Portuguese, German, Chinese, Spanish, Arabic, and Indonesian, the latter two languages were added in 2018). It has also been published on the Company's intranet and website to affirm the Group's values with regard to third parties.

The Code of Ethics is the seminal document with which a certain number of directives and recommendations are associated, which guides Group employees in applying the Code. In an effort to help implement the Code of Ethics with all employees, notably managers, the Ethics and Compliance Officer has the following duties:

- assisting Group companies in communicating the Code of Ethics;
- coordinating actions to educate new employees on the Code of Ethics;
- helping to define the procedures for implementing the Code of Ethics;
- ascertaining any difficulties in interpreting or applying the Code of Ethics that are raised by staff; to that end, the Officer receives any information relating to breaches of the principles of responsibility; and
- preparing an annual report for the Chairman of the Management Board on the Code of Ethics' implementation.

In addition to the Code of Ethics and the existing internal procedures, and in conformity with the current regulations, Vallourec has prepared an Anti-Corruption Code of Conduct. This document constitutes the Vallourec Group's anti-corruption policy. It is intended for all employees, as well as Vallourec's industrial and commercial partners. The Anti-Corruption Code of Conduct recalls Vallourec's commitment in the fight against corruption. It contains definitions and practical examples of prohibited conduct that could constitute acts of corruption or influence peddling. In particular, it covers the way in which Vallourec manages its relations with commercial partners, corporate gifts and invitations, facilitating payments, conflicts of interest, representatives of interests, and the funding of political parties. Lastly, it recalls the various reporting methods available to employees and stakeholders who wish to report non-compliance with the Code of Ethics or the Code of Conduct.

4.2.1.2 Compliance program

Consistent with the principles set out in the Code of Ethics and the commitments of the Global Compact of the United Nations that the Group signed on to in 2010, Vallourec seeks to prevent specific risks relating to competition and anti-corruption, within the framework of a Global Compliance program rolled out in all of the Group's companies.

Developed and coordinated by the Group's Legal Department, this program aims to educate and train the Group's managers, mainly through internal training, on the applicable laws and regulations in these areas. It is designed to respond effectively to the risks managers may face in their activities through detailed, informative and practical recommendations that can be understood by all.

In 2018, training actions were completed worldwide. An e-learning program has also been rolled out since 2014, in an effort to educate all technical and supervisory staff, and managers of the Group, about the laws and regulations on competition, anti-corruption and environmental protection.

The principles enumerated under the Global Compliance Program were formalized in 2015 in the internal procedures relating to recourse to sales agents, gifts and invitations, philanthropy and sponsorship, local partners, lobbying and political life.

In an effort to strengthen the internal communication of the main procedures, in 2017 the Group launched the "Welcome Package." This is a module disseminated via the Learning Management System (LMS) of Vallourec University to all new employees, so that they are aware of the Company's values and workplace rules from the time of their arrival into the Group.

4.2.1.3 Tax policies applied – Combating tax evasion

The Group's tax, accounting and/or legal teams (calling on external experts and advisors where necessary) work at a central and local level to ensure:

- implementation of accounting principles, the price transfer policy and suitable procedures to ensure that tax is calculated correctly and paid timely in the countries where it is due;
- identification and request within the legal timeframes of tax relief likely to benefit the Group;
- regular monitoring of the change in legal and regulatory requirements applicable to Group entities, and daily advice and aid to Group employees to ensure proper compliance with the applicable laws and regulations, particularly to combat tax evasion; and
- adequate personnel and/or external advisors to monitor tax audits so that they run smoothly and to enable them to be completed as quickly as possible.

This policy applies to all tax due at all levels of jurisdiction (local, regional, and national).

The Group's entities are regularly audited by the tax authorities to which they are subject.

As at 31 December 2018, no Group entity was involved in a dispute over tax evasion.

4.2.2 Social policy

The social indicator scope includes companies within the tax consolidation scope. Staff at sales offices are likewise included in this report.

4.2.2.1 Group workforce

Changes and distribution

BREAKDOWN OF WORKFORCE BY AGE, GENDER AND GEOGRAPHICAL AREA

As at 31 December 2018, ☑ 19,164 employees worked at more than 50 production sites or under service contracts with Vallourec (short-term or permanent contracts), compared to 20,093 employees in 2017. This decrease primarily reflects the fact that Vallourec has recentered its focus on certain activities in line with its transformation plan, and accordingly stopped its activity in the Drilling sector (approximately 310 people in France, approximately 120 people in the Middle East, and approximately 140 people in the United States). In France, Vallourec also sold its Vallourec Fittings entity (approximately 90 people) in May 2018, and in China, the workforce at Vallourec Tianda (Anhui) Co., Ltd (formerly Anhui Tianda Oil Pipe Company Limited) was decreased by approximately 450 people due to the sale of the Tongcheng plant in January 2018.

Distribution by geographical area

Country	Number of employees	2018
Brazil	6,784	6,752
France	3,621	3,025
Germany	3,495	3,403
United States	2,052	2,019
China	2,105	1,730
Indonesia	457	744
United Kingdom	387	328
Mexico	322	336
Saudi Arabia	192	191
United Arab Emirates	181	77
Malaysia	241	334
Other regions	256	225

Workforce as at 31 December (permanent and short-term contracts)	2017	2018	Change 2017/2018	2017 Breakdown	2018 Breakdown
Europe	7,559	6,790	-10.2%	38%	35%
Brazil	6,784	6,752	-0.5%	34%	35%
Asia	2,912	2,911	0%	14%	15%
NAFTA (United States, Canada, Mexico)	2,406	2,386	-0.8%	12%	12%
Middle East	374	269	-28.1%	2%	1%
Africa	58	56	-3.4%	NS	NS
TOTAL	**20,093**	**19,164**	**-4.6%**	**100%**	**100%**

Breakdown by gender

As at 31 December 2018, the Group had 2,190 women (2,048 with permanent contracts), which represents 11.4% of the total permanent workforce. Marginally present in the category of production staff, women mainly hold administrative and commercial positions. They represent 30% of the Group's technical and supervisory staff (administrative personnel, technicians or field supervisors), and 22% of its managers. The proportion of women remained unchanged for the 2017-2018 period by area, for the Group as a whole.

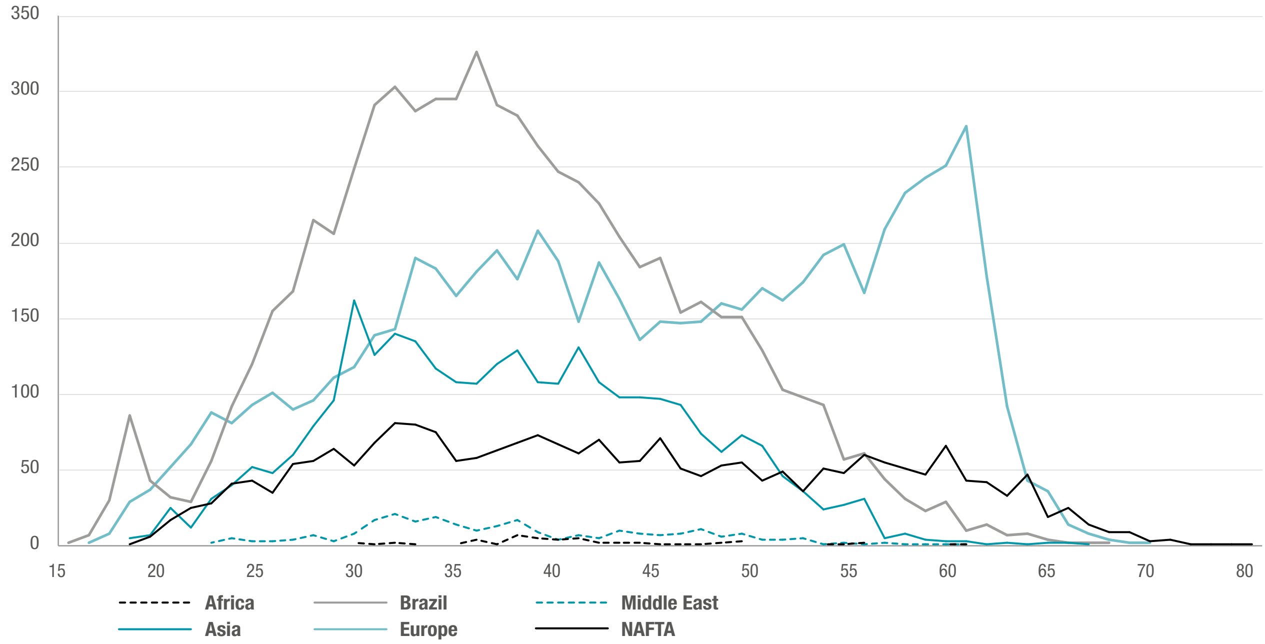
% of women (permanent employees)	Production staff		Technical and supervisory staff		Managers		Total	
	2017	2018	2017	2018	2017	2018	2017	2018
Europe	2%	2%	33%	33%	23%	22%	12%	12%
Brazil	5%	5%	26%	29%	24%	25%	10%	10%
Asia	13%	12%	28%	28%	17%	16%	16%	16%
NAFTA (United States, Canada, Mexico)	1%	2%	26%	27%	23%	22%	10%	10%
Middle East	-	-	15%	15%	11%	17%	6%	8%
Africa	9%	8%	14%	13%	-	-	11%	11%
WORLD	**5%**	**4%**	**29%**	**30%**	**22%**	**22%**	**12%**	**11%**

Breakdown by age

The age pyramids show significant disparities in terms of geographical areas.

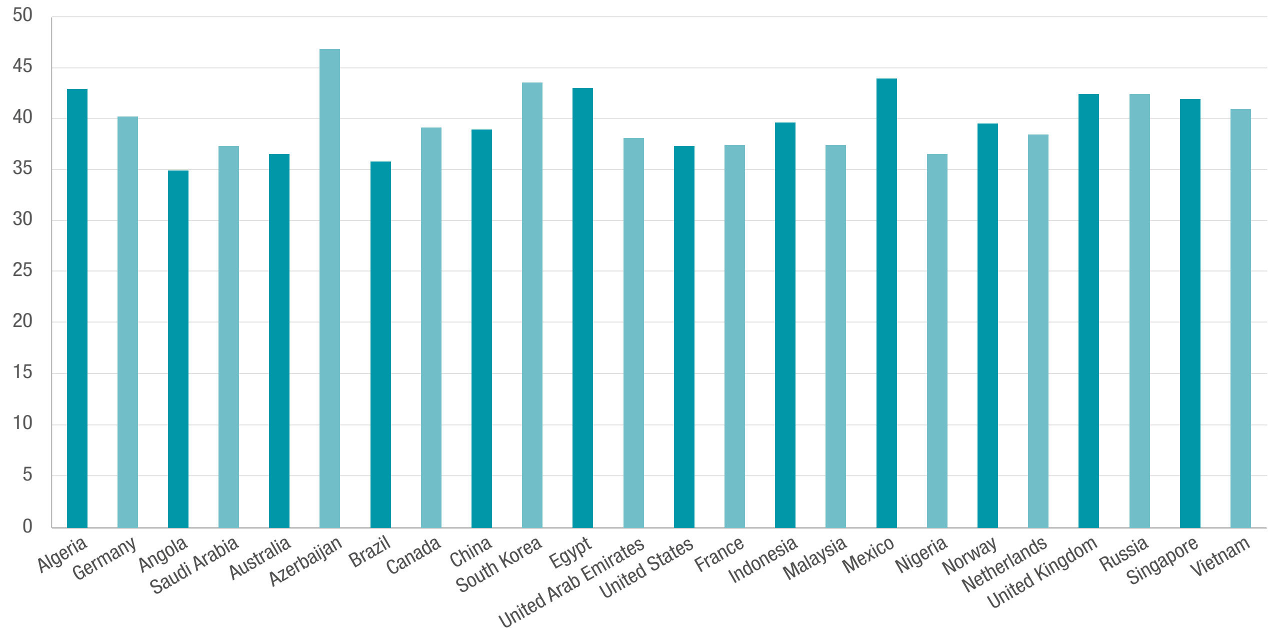
The Brazilian employee population is young, with a strong concentration in the 25 to 40-year-old segment. In the NAFTA region, the distribution of the population among the various age categories is well balanced. Asia has practically no employees older than 55. Conversely, Europe remains marked by a large number of employees over age 50 (approximately 37% of the European population). The staff breakdown by age range has not changed in comparison to the previous year.

Breakdown of the workforce by age ☑



These disparities are also reflected in the average age of employees in the main countries where the Group is established.

Average age by area and country



BREAKDOWN OF THE WORKFORCE BY PROFESSIONAL CATEGORY AND TYPE OF CONTRACT

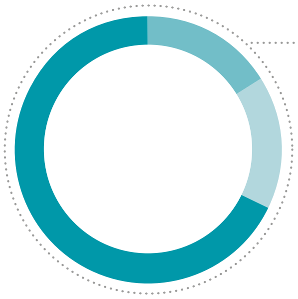
Breakdown by professional category

Production staff represents two thirds of the workforce.

Technical and supervisory staff includes administrative personnel, technicians and field supervisors, who account for 16% of the workforce. Managers likewise represent 16% of the workforce.

Breakdown of workforce by category in 2018

In 2018, the proportion of executives and technical and supervisory staff remained unchanged from 2017.



Group's registered workforce by professional category	2017	2018
Managers	3,210	3,128
Technical and supervisory staff	3,205	2,924
Production staff	13,678	13,112
TOTAL	**20,093**	**19,164**

Breakdown of registered workforce	Production staff		Technical and supervisory staff		Managers		Total	
	2017	2018	2017	2018	2017	2018	2017	2018
Europe	23%	22%	8%	7%	7%	7%	38%	36%
Brazil	26%	27%	3%	3%	5%	5%	34%	35%
Asia	11%	11%	2%	3%	1%	1%	14%	15%
NAFTA	7%	8%	2%	2%	3%	3%	12%	13%
Middle East	1%	1%	< 1%	< 1%	< 1%	< 1%	< 2%	< 1%
Africa	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%
WORLD	**68%**	**68%**	**16%**	**16%**	**16%**	**16%**	**100%**	**100%**

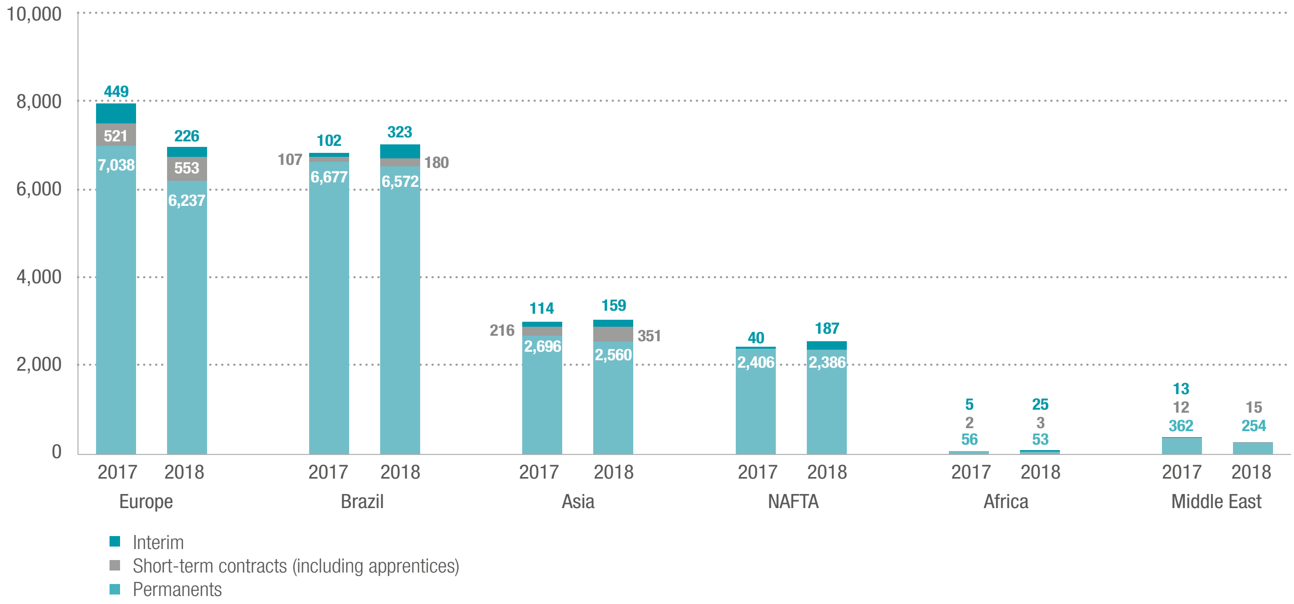
Nearly 50% of production staff are still located in Europe and Brazil, while 21.5% of managers and technical and supervisory staff are located in this same area.

In 2018, the production staff population still accounted for approximately 68% of the Group's total workforce, which is consistent in comparison to 2017.

Breakdown by type of contract

Due to the highly cyclical nature of its markets, Vallourec has to be able to adapt rapidly to changes in activity. As a matter of policy, it maintains a permanent workforce (via permanent contracts), which allows it to meet the needs of its ongoing operations, and temporary workers (under short-term and temporary contracts) to cope with surges in activity. For planning purposes, the permanent staff is managed on the basis of a model workforce involved in a standard activity for three to five years. Changes in peak or trough activity are handled via flexible local solutions (e.g., loans between plants, working-time adjustments in Europe, temporary staff and short-term contracts).

Breakdown between permanent, short-term (fixed-term contracts and apprentices) and temporary workforce



At the end of 2018, there were 18,062 permanent workers worldwide, compared to 19,235 at the end of 2017.

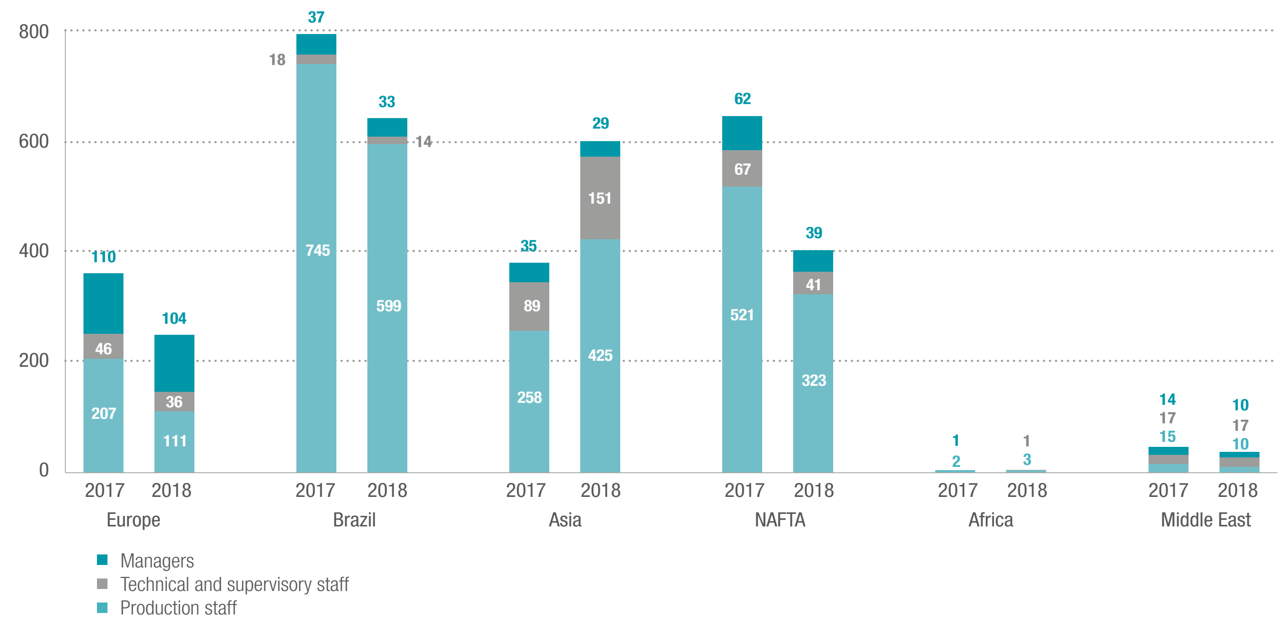
Entries and departures

NEW HIRES AND TRANSFERS

New hires of permanent workforce were lower in 2018 in all areas except Asia. The new hires should be considered in parallel with the departures for the same period and same area. Accordingly, while hiring increased in the Asia area in 2018, so did departures, and to a higher degree. Consequently, the permanent workforce in Asia also decreased as it did for all other areas.

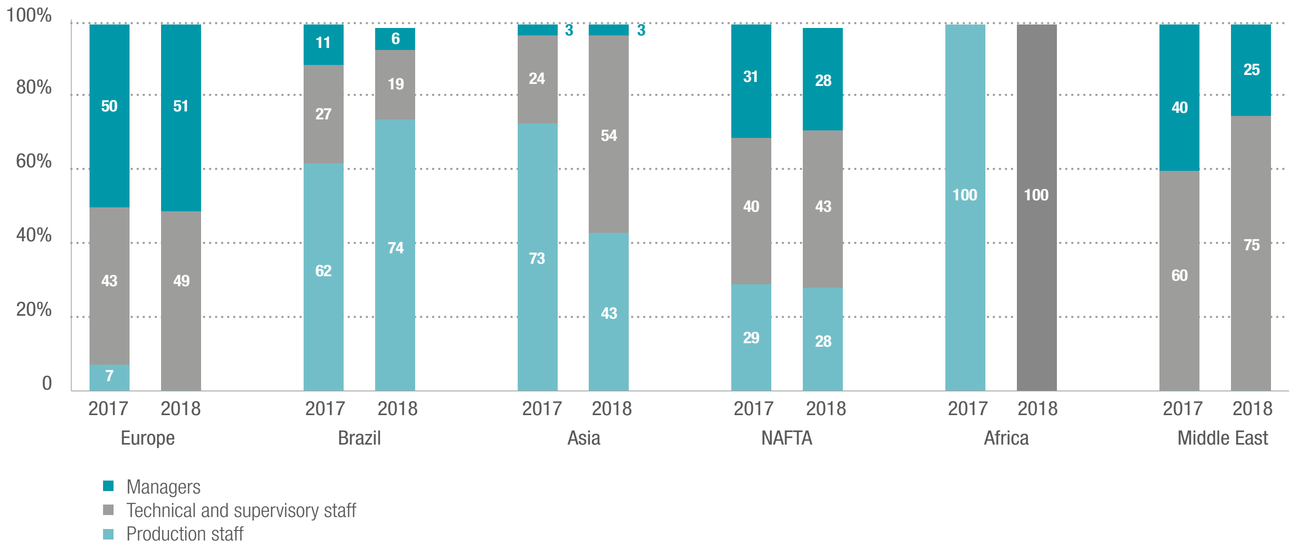
The breakdown of new hires by professional category and geographical area is as follows:

Breakdown of new hires by professional category



In 2018, we simultaneously recorded nearly 424 departures in the NAFTA area, 752 in Brazil, 790 in the Asia area, and 1,154 in the Europe area.

Breakdown of new hires of women by professional category



For all areas except Brazil, female employees were primarily hired in the professional categories of technical and supervisory staff, and managers. Female new hires in the production staff category remain significant in Brazil. The percentage of new hires in this production staff category rose from 62% in 2017 to 74% in 2018. The proportion of women in the Group remained unchanged at 11%. The Group's policy, as defined by the Management Board in 2016, focuses on two objectives, which are increasing the number of women in operations-related positions, and improving women's access to leadership roles.

DEPARTURES

In 2018, the Group's permanent workforce dropped 6%, and its non-permanent workforce rose 28%.

Turnover rate by area

Turnover rate *(permanent workforce)*	**2017**	**2018**
Europe	10%	10%
Brazil	10%	10%
Asia	12%	26%
NAFTA	23%	17%
Middle East	12%	26%
Africa	6%	11%

The turnover rate includes departures and arrivals for the year in question and is defined as follows:

(number of departures + number of arrivals for the year)x2x100/(workforce as of 31/12 of the preceding year).

This takes into account departures, arrivals and transfers within areas.

Reasons for termination of employment contract by area

	Retirement benefits		Resignation		Dismissal		Other reasons	
	2017	2018	2017	2018	2017	2018	2017	2018
Europe	30%	23%	14%	16%	11%	12%	45%	49%
Brazil	1%	1%	4%	6%	93%	89%	2%	4%
NAFTA	12%	5%	41%	37%	43%	52%	4%	6%
Asia	4%	2%	87%	93%	6%	3%	3%	2%

In Brazil, given the employment regulations, dismissal is the method by which contracts are typically terminated. In line with the restructuring plan, the use of dismissals continues to be significant in 2018, with a ratio close to that of 2017.

In the NAFTA area, the number of dismissals increased, in particular following the sale of the Drilling business.

In Europe, 66% of contract terminations were for reasons other than retirement, resignation, or dismissal ("Other reasons"), or were related to the disposals of the Altifort-SMFI and Interfit entities.

Organization of working time

RATE OF WORK

The Group's policy is designed to provide flexibility and responsiveness in order to adapt to customer demand.

Working patterns enable the Group to adjust plant operations to production requirements. Most production sites have adopted a system of continuous shift work (24 hours a day), five or six days per week using three, four or five rotating teams.

In order to minimize the arduous nature of working patterns, research is being done in conjunction with occupational physicians and employees into the structuring of working patterns to coincide with physiological rhythms. This research is then followed by trials.

Innovative solutions have been implemented, which depend heavily on cultural factors and applicable national laws.

In order for the Group to meet the need to adapt to economic conditions, whenever possible, hourly cycles were reduced (2×8 from 3×8, or to 3×8 from 5×8, etc.).

WORK TIME

The following table shows the number of hours worked and the average number of overtime hours worked in the last two years. It is based, for each area, on the number of hours worked by the registered workforce.

	Average number of hours worked per employee		Including average number of overtime hours worked per employee during the year	
	2017	2018	2017	2018
Europe	1,458	1,435	65	52
Brazil	2,003	1,998	154	140
NAFTA	2,345	2,340	423	402
Asia	2,484	2,358	562	479
Middle East	2,390	2,104	395	187
Africa	1,795	1,955	162	300

Average number of hours worked per employee	2017	2018
China	2,604	2,479
United States	2,381	2,387
Indonesia	2,243	2,307
Mexico	2,170	2,108
Saudi Arabia	2,563	2,105
United Arab Emirates	2,208	2,103
Singapore	2,071	2,068
Nigeria	1,786	2,009
Brazil	2,003	1,998
Azerbaijan	1,888	1,935
Egypt	1,920	1,920
Malaysia	2,022	1,915
South Korea	1,920	1,760
United Kingdom	1,795	1,749
Canada	1,861	1,733
Angola	1,833	1,703
Australia	1,724	1,657
France	1,419	1,437
Germany	1,463	1,401
Norway	1,560	1,399
Russia	1,316	1,105
Netherlands	1,647	1,080

Although overtime hours do not apply to managers, the average number of overtime hours has been calculated for the entire permanent workforce (registered workforce), including managers.

INDIVIDUAL WORKING ARRANGEMENTS AND PART-TIME WORK (FRANCE)

In France, nearly all technical and supervisory staff benefit from individual working arrangements, enabling them to set their arrival and departure times based on personal needs and the requirements of their Department.

On a trial basis, a telecommuting program was put in place at the headquarters after consulting with staff representatives.

ABSENTEEISM

The rate of absenteeism is calculated by comparing the aggregate of all paid leaves (including for illness, maternity, workplace accidents or commuting accidents) with the total number of hours actually worked. In every country, it is in the low average of the rates of comparable industries.

In 2018, the absenteeism rate at the Group level remained unchanged at 3.9%. Nevertheless, absenteeism improved in all areas except Europe, where it increased in 2018.

Rate of absenteeism	2017	2018
Europe	6.2%	7.0%
Brazil	3.0%	3.0%
NAFTA	2.7%	2.3%
Asia	2.3%	1.7%
Middle East	0.9%	0.8%
Africa	1.5%	0.8%
TOTAL	**3.8%**	**☑ 3.9%**

4.2.2.2 Health and safety

Health and safety risks are presented in Section 5.1.2. "Operational risks" of this Registration Document.

Safety

➔ Commitment to responsible performance

> Ensure the safety and protect the health of our employees

> Offer each employee good working conditions

INDICATOR

The frequency rate of accidents with or without lost time (*Total Lost Time Injury Rate* or LTIR, and *the Total Recordable Injury* Rate or TRIR): number of accidents reported per million hours worked.

2018 OBJECTIVES

To achieve an LTIR of 1.2 and a TRIR of 2.8 (including the performance of subcontractors).

ACHIEVEMENT OF THE 2018 OBJECTIVE

The Group achieved an LTIR of 1.02 and a TRIR of 2.97.

2019 OBJECTIVE

To continue our efforts to achieve an LTIR of less than 1 and a TRIR of less than 2.5.

Safety is the Group's main priority, and it aims to become a benchmark and a model for success in this area. At the end of 2018, 98% of Vallourec sites were OHSAS certified(1) and represented 100% of production in metric tons.

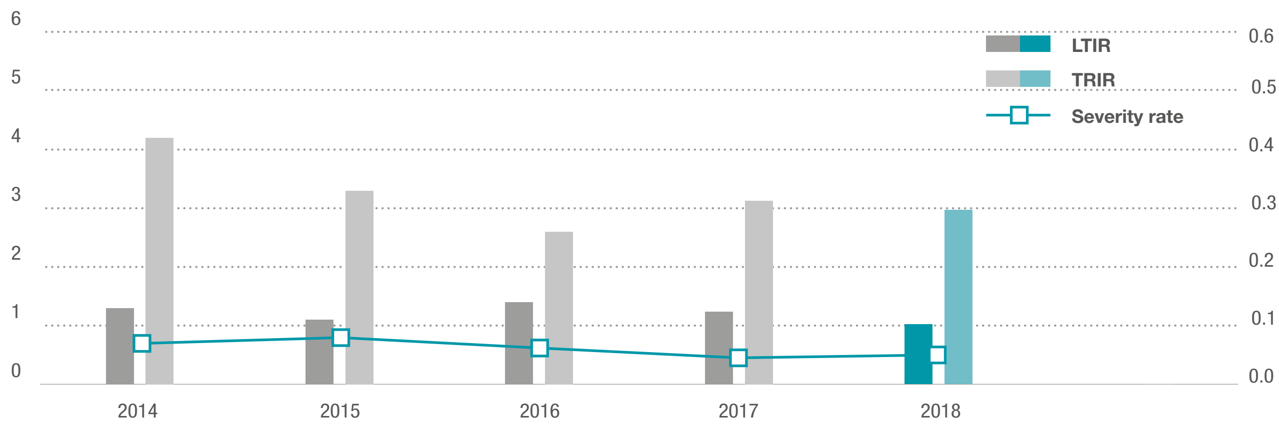
Vallourec has been committed to its "CAPTEN+ Safe" safety improvement program for several years. The program has been renewed each year with a particular focus on the major risks that could lead to a fatal accident and, starting in 2016, a specific focus on subcontractors.

Since 2016, the performance indicators have incorporated subcontractors, Vallourec staff, and temporary workers.

At the end of 2018, the LTIR(2) was ☑ 1.02 and the TRIR(2) was ☑ 2.97. The Group has not reported any fatal accidents in the last four years.

In 2018, the Severity Rate (SR) of the Lost Time Injury Rate was 0.050.

Change in safety indicators



(1) *OHSAS 18001: International guidelines relating to occupational health and safety, published in 2001 under the authority of the International Labour Organization.*
(2) *Considering the Group's employees, temporary staff and subcontractors.*

Whenever an accident involving lost time or a potentially serious incident occurs, the Group Executive Committee is informed immediately.

The safety improvement program includes the following measures at all Group sites:

- safety management committees at all levels of the Company;
- ongoing risk assessment for safety concerns, as well as a program to reduce the highest risks;
- more targeted action to reduce risks that could lead to a fatal accident (maintaining loads, working from heights, lockout-tagout of equipment, confined spaces);
- safety inspections;
- continuous improvement teams (CITs) on safety issues;
- systematic communications at workstations concerning safety issues;
- strong involvement of the entire managerial line to report and address safety issues;
- strong employee involvement to stop and report any situation involving risk;
- eight golden rules, which are grouped into eight chapters/themes: "my attitude to safety", flow of machines and pedestrians, lifting, manual tools, working at height, confined spaces, energies and lockout-tagout procedures (LOTO), and health protection. An e-learning tool focusing on these eight golden rules, translated into the languages used in the Group, is available to all employees.

As from 2017, each reported accident is analyzed for actual and potential severity, relying on an internal scale (level 1: minor accident, level 8: fatal or potentially fatal accident). Beyond merely calculating days lost, this approach provides depth to the analysis of causes and allows corrective actions to be taken at the Group and regional levels.

In 2018, accidents were primarily to the hands (42%), shoulders (8%), legs (7%) and back (6%).

For the total accidents and near-misses reported, the golden rules broken mainly concerned conduct (36%), maintenance operations (21%) and manual tools (16%).

Education and training about safety rules is mandatory for all new employees of the Group and includes frequent follow-up. The programs for temporary staff have now been extended to subcontracting companies, just as for the permanent workforce.

Each year, a day is devoted to safety in all of the Group's sites. This is the time to raise awareness about safety issues in multiple ways among all employees, in particular through specific workshops (risks to hands, load handling, driving forklifts, working from heights, evacuation exercises, etc.) during which production is suspended. A great number of Top managers make special trips to sites for this event. The site recording the best safety performance also receives a specific honor on that day.

Staying on course to control or eliminate dangerous operations that could lead to fatal accidents, strengthening the risk analysis methodology to better understand unusual situations, developing the leadership of the management line, and employee interdependence are priorities for 2019.

In an effort to signal its commitment to safety issues, the Supervisory Board has included safety objectives for several years in the variable portion of the Management Board members' compensation, as well as in that of the main managers in charge of supervising staff at the sites, i.e., nearly 2,000 managers.

Health

HEALTH POLICY

In 2018, the Group did not sign any collective agreements regarding occupational health and safety. However, the Health and Safety policy that was updated in 2016 contains a more robust health section. Entities thus aim to gain further knowledge about the health risks specific to their processes, and determine the means to eliminate or attenuate them locally.

In 2018, the Executive Committee nevertheless decided to ensure that all health risks had been sufficiently taken into consideration, and to implement overall reporting, which would take effect in 2019, creating a Health Committee. There are indeed various issues that relate to the health of Vallourec's employees. As concerns our process, chemical risk (see below), noise, air quality and the ergonomics of workstations have been the subject of structured adaptation plans for several years. The issues also concern medical follow-up of employees, the risks of psychosocial risks to which they could be exposed, and the ability to offer them adapted health coverage. Lastly, the Group's health policy must also ensure that the products used for its customers' operations are safe.

PREVENTION OF CHEMICAL RISK

The safe use of chemical products and substances is of critical concern to Vallourec, which has had a dedicated plan in this regard for numerous years. The database containing their details is regularly updated to ensure rigorous monitoring of developments and thus prevent the risks of harmful effects. Three points should be emphasized:

a) In 2016, this basis was optimized to better assist the HSE teams in determining the danger of products, and thus establish adequate means of prevention. The application also evolved to take into account the new globally referenced classification system (GHS) as well as all of the new regulations resulting therefrom. The new functionalities were first rolled out at French sites. The rollout has continued since 2017 in Germany, the United States, Brazil, and China.

This tool also evolved to integrate the evaluation of chemical risk at the workstation. The French sites began to deploy the method at the end of 2017. This functionality has gradually been extended to the Group's other sites, and will be fully operational in Europe and Brazil in 2019.

b) All products or substances entering production sites are monitored and authorized by local HSE managers. Medical services are regularly called in to provide a full risk assessment. Legally required checks on the atmosphere in the work environment are conducted, and this information is included in risk assessments.

c) Lastly, the impact of chemical risk is likewise studied from the initial stage of investment and R&D projects in an effort to take all prevention criteria that should be associated with them into account. Several R&D investment projects were thus validated at the Corporate level from a chemical risk perspective. The most at-risk projects are monitored and validated at each stage, through to industrialization on-site. This process is the result of close collaboration with process communities and purchasing teams. For example, the development of the next generation of grease-free coating for our connections (Cleanwell Dry 2) has allowed us to define and establish use of CMR products via closed-cup systems, and thereby guarantee zero contact to ensure maximum staff protection. These highly secure processes were then monitored by local HSE teams.

PRODUCT SUBSTITUTE PLANS

Changes in legislation and improved knowledge about the toxicity of substances increase the number of products that are identified as CMR each year. Plans to substitute critical products have been defined and, in conjunction with R&D and the suppliers, the HSE teams have devised test and qualification programs for substitute products. These programs can sometimes take a long time and, in some cases require the manufacturing processes to be adapted or adjusted.

At the end of 2018, 78.7%[(1)] of the 390 plant items identified as CMR[(2)] were replaced[(3)] (67.2% in 2017 within the ISO scope). Consideration of changes in the Group's industrial scope, as well as the rollout of the new GHS classification system, resulted in an additional list of products that had not yet been identified as CMR, and in new substitution actions being undertaken. This progress is the result of the actions taken, but also of the development of the Group's industrial scope.

As mentioned above, there are still 29 industrial uses of distinct CMR products that have however remained identified as non-substitutable due to technical problems or a lack of substitute on the market; 18 other uses are linked to compartmentalized laboratory testing techniques. Their uses are thus monitored by the HSE teams and the Environment Department, which, in 2018, conducted chemical risk audits on the industrial processes using CMRs, to verify that the protection measures did not present any major defaults. Oversight plans have been established and monitored by the local teams.

The specific action plans rolled out at the Group level continue to develop, and concern:

a) refractory ceramic fibers: Vallourec has written and circulated a single set of instructions for all countries. The materials containing this type of fiber present in furnaces are progressively dropped off during maintenance operations when an alternative solution is available. In 2018, the low number of furnace maintenance programs did not allow for much progress on RCF substitutions. The substitution percentage in the identified areas is around 59% for the new industrial scope;

b) lead dope: tests and qualifications allowed us to list the substitution greases to use on the threading that is not subjected to high temperature according to the type of connections and environments of use. Leaded grease nevertheless is still not substitutable under certain extreme conditions. It is currently only used when operating conditions do not allow for any other options. In 2018, the sites used 297 metric tons of grease, including 11% leaded grease (25% of 175 metric tons in 2017), a significant decrease in absolute value;

c) nickel phosphates: in 2017, the competent process community, known as VAM, rolled out a test program with the three concerned suppliers to validate three Ni-free solutions. This collaborative work with these three suppliers has enabled worldwide supply coverage, and has also allowed the process parameters to be optimized to ensure gains on energy consumption, processing time and waste production. The three solutions were approved and presented by this process community at the plants at a specific meeting. In 2018, the Group gave the "Vallourec Environment Award" to this same community, for its work on substituting nickel salts in phosphating processes. The substitution programs began to be rolled out site by site in 2018, with the support of the Community, and this process will continue in 2019.

Other programs are conducted jointly with R&D, the plants and the suppliers in an effort to reduce CMR use. The use of borax, for example, is a common subject at several sites, which was taken up by another process community.

4.2.2.3 Social relations

Employer-employee dialog

Wherever the Group is established, it has made employer-employee dialog a priority. This is organized in each country, in accordance with local regulations. To date, at least 82% of the workforce are covered by industry- or company-wide collective agreements.

- Within the Group, an employee representative appointed by the Group Committee has chaired the Supervisory Board since the end of 2017.
- In Europe, the dialog occurs at several levels:
  - a European Committee, comprised of 30 French, German and British representatives, meets at least once a year, alternating between France and Germany. It meets with Management, which provides information about changes in the Group's activities, results and strategy;
  - a European Committee office is also in session five times a year, and regularly meets with Management to discuss the Group's future, along with other European issues. In 2018, several special meetings allowed office members to really understand the economic and industrial issues impacting the Group's competitiveness, along with the action plans linked to the Group's transformation, in particular the adaptations to be made in the Europe/Africa region;
  - additionally, European employee shareholders are represented by a Supervisory Board for employee shareholding funds. They meet with Management twice a year. An employee representative is chosen from among them, who then serves on Vallourec's Supervisory Board.
- In France:

  The Group Committee has 23 representatives chosen by the trade unions from among those serving on the works councils. It meets once a year in the presence of the Management Board and receives general information about the Group (examination of financial statements, activity, investments, etc.) It is assisted by a certified public accountant. It is also involved in managing employee benefits and savings plans. In each company, works councils or central works councils, elected consultative committees or staff delegates, as well as health and safety and working conditions committees are associated with the business or institution's management. Additionally, the works councils manage social activities (participation

(1) Note that the products identified as non-substitutable are considered as substituted and included in the percentage calculated.

(2) Chemicals or preparations may have various adverse effects on human health. These are classified into "CMR" categories. Within the meaning of Article R.231-51 of the French Labor Code, substances or preparations are considered CMR agents when they are carcinogenic (C), mutagenic (M) and/or toxic for reproduction (R).

(3) Some sites reported their inventory. New substances have also been officially classified as CMR.

in the financing of health contracts, organization of trips, Christmas gifts, sporting activities, etc.). The union organizations that obtained more than 10% of the votes in works council or elected consultative committee elections, are the managerial contacts for negotiations.

The negotiation of an agreement on employer-employee dialog, which began at the end of 2017 and integrated the establishment of Economic and Social Committees within the French facilities, continued in 2018. This negotiation resulted in the signing of an agreement with the representative union organizations at the Group level. This is part of a tradition of corporate relations at Vallourec and clarifies the principles that allow it to maintain a high-quality employer-employee dialog about the economic, industrial, and social issues Vallourec must face.

The sales of Vallourec Fittings and Vallourec Drilling Products France, as well as the employment protection plan concerning the Saint-Saulve establishment, have also been carried out with due regard for the staff representative bodies and the applicable information-consulting processes. A majority collective bargaining agreement was also signed with the union organizations concerning the social support measures provided for by the employment protection plan.

Moreover, negotiations began for introducing telecommuting in France, as well as a job and skills planning program. These negotiations will continue in 2019.

Lastly, the employee negotiations that took place at the end of the year resulted in agreements being signed in the majority of companies.

- In Germany:

  In 2018, the main priorities were the improvement of Vallourec Deutschland (VAD) and the newly implemented Transformation Plan and VAD Recovery Plan.

  In the course of the VAD Recovery Plan, massive restructuring within the organization and a far-reaching reduction in staff numbers, increasingly in the white-collar sector, were initiated. In addition, preparatory talks were held on the deviation from the collective bargaining agreement.

- In the United Kingdom:

  Employees are represented through two trade unions (Community Union and Unite Union) which represent production, administrative and technical workforce. 2018 negotiations concerned the wage policy, holidays and bonus schemes which resulted in an amendment to these schemes and rules surrounding them. Negotiations also related to HR policies and conclusion of the changes to the Defined Benefit Pension Scheme.

- In North America:

  In Mexico, the union mainly represents production staff and is represented by a collective bargaining agreement. The union, for which dues and membership are mandatory, can propose candidates for promotions among these employees, a list of whom is drawn up in accordance with the agreements. Negotiations concern salaries and benefits in kind.

  In the United States, as required by law, employees can choose to be represented by a union and a collective bargaining agreement; so far, employees have consistently voted against union representation. The last formal union election was held in 2014 in Vallourec Star sites, in Youngstown (Ohio, USA).

  In 2018 Vallourec continued to encourage employee engagement through the continued communication plan that was launched in 2016. The plan includes Town Hall style meetings, which are open dialog with the workforce, intended to discuss any item that workers bring up with a short business update. The meetings are opened to all employees, which allows them to gather to know more on the state of business and major projects or change initiatives with a short time allowance for Q&A from the workforce. Round-table discussions with the President/Plant Management and HR Manager and with a small cross-section of the workforce randomly selected to allow a discussion on their likes and dislikes and other items the participants would like to discuss.

  The Semi-Annual Pulse Program was expanded to all U.S operations locations. The Pulse Survey is a short, 22 anonymous questions, survey and action program giving the employees another tool to express their voice and find solutions to improve the working relationship within the teams. The focus of the Pulse is local items, not plant or global policy but situations that the employees can be empowered to change to make things better.

  A new program was introduced in the Region that focused on employee empowerment and described as The Big Opportunity (TBO) where over 1,000 employees volunteered to identify and engage in innovative ways to help our customers, streamline our processes, and improve our business. This program connected our employees' strengths or passions with opportunities and is reinforcing our commitment to the Vallourec Values of Transparency, Performance and Responsiveness, Respect for People and Joint Commitment.

  All these efforts are only a small number of activities that has led our workforce to believe Vallourec is a great place to work. We are proud that the North American Region of Vallourec was awarded "The Great Place to Work" certification in November 2018.

- In South America:

  In Brazil, employees are represented by trade unions, which are formed by employees not only from Vallourec, but also from other companies that integrate their territorial base.

  There are legal criteria that establish the obligation of an union representation, according to the territorial location of the Company and its preponderant activity. Thus, for each unit in Brazil there is a different union representing the employees.

  These unions are responsible for bargaining salary and benefits increases as well as the work conditions. The negotiations conducted in 2018 for all employees resulted in a salary increase equivalent to the inflation rate of the last 12 months in all plants (except for Mining, where the increase was a bit over the inflation rate at 0.39%, i.e., total salary increase: 4%)

  Moreover, the employees are also represented by the *Conselho Representativo dos Empregados* (Employee Representative Council – CRE) that is a legal obligation for all plants that have 2,000 or more employees, since November 2017. This Council provides employee's representation internally and facilitates discussions on specific daily matters such as catering, transportation, restrooms, etc. The CRE cannot be involved in matters that are negotiated by the trade Union. It plays a complementary role.

- In China:

  Employee representatives or works councils exist in some entities, and the employer has regular communications with those representatives. In any way, Vallourec encourages employees to have representatives. In the entities without employee representatives, employer-employee dialog occurs through direct contact between the production staff and management via internal communication meetings. Should employees request it, the setup of a trade union will have to be planned.

Internal survey on employee satisfaction ("Social Barometer")

Vallourec conducts a survey at regular intervals (twice a year) with all of its employees worldwide to find out their perception, expectations and concerns. The survey is used to measure the level of satisfaction, motivation and commitment of employees.

It ensures that employees' responses will be kept completely confidential.

The last survey conducted in November 2018 achieved a good rate of participation (51.6% response rate) and yielded a significant satisfaction score (72.8%), slightly higher than in the March 2018 satisfaction survey. As in previous years, the pride of belonging to the Company, the work atmosphere, as well as the strong level of independence given to employees appear to be the main motivating levers.

Following the survey, action plans were begun or extended to respond to employees' expectations concerning the standards of excellence defined at the Group level.

Group internal communications

Internal communication has a major role in Vallourec's operations. It allows employees to be connected worldwide and to create a true sense of belonging to the Group. The goal of internal communications is to engage Vallourec's employees and have them adopt a common vision, plan and values and to support change. Vallourec maintains dialog with its employees and provides information through various channels:

- a new intranet, My Vallourec, which was launched in January 2019, is used by approximately 8,000 employees in some twenty countries. My Vallourec was designed to combine the Group's various intranet site into a single platform, giving employees simplified access to local and corporate information. It offers an environment based on Office 365, which is more ergonomic, consistent, modern, and above all more open. The information provided on My Vallourec allows you learn more about the strategy, objectives, results and success of teams worldwide. A bi-monthly e-newsletter also presents site news;
- My Vallourec is supplemented by the business social networking site Yammer, which allows employees to have discussions, share knowledge and best practices via dedicated communities, and by Teams, a hub designed to promote teamwork;
- specific communication on certain projects that educates employees about key issues in the Group – safety, digital, major HR projects, ethics and values, the environment – or involves them in important matters (Innovation Challenge, major projects impacting Group life, etc.); and
- at annual conventions or local meetings, the Group's executive management team visits employees to share information and gather feedback.

The Group's internal communications are also based on local resources in the countries and subsidiaries, which relay messages, provide feedback from the field and raise topics of interest within their own channels (magazines, intranets, etc.).

4.2.2.4 Compensation and benefits

Payroll

In 2018, Group payroll, excluding temporary workers, totaled €958 million:

- €750 million in salaries;
- €16 million in employee profit sharing;
- €0.4 million in expenses associated with share subscription or share purchase options and performance shares;
- €192 million in social security costs.

Breakdown of payroll costs by country:

Breakdown of total payroll costs	2017	2018
Germany	22%	22%
Brazil	24%	21%
China	2%	3%
United States	21%	23%
France	24%	23%
Mexico	1%	1%
United Kingdom	2%	3%
Other	4%	4%
TOTAL	**100%**	**100%**

Employee profit sharing

Profit sharing plans are designed to associate employees with the Company's performance. In 2018, this amounted to €16 million.

In France, a Company savings plan (PEE) and retirement savings plan (PERCO) allow employees to invest the money they receive from profit-sharing in order to build up savings with a favorable tax status and to benefit from employer contributions.

Employee shareholding

The Group did not continue the Value employee shareholding plan in 2018.

Shares held by employees represented 3.70% of Vallourec's share capital as at 31 December 2018, compared to 4.19% as at 31 December 2017.

Other benefits

In almost all countries, except in African and Middle East countries, employees benefit from a healthcare coverage system for themselves and their families. During business travel, a medical service guarantees they will be cared for under the best conditions.

Multiple activities of a social, sporting or cultural nature are organized within the subsidiaries. They take on different forms according to the structures: company orchestras or choirs, organization of tourist trips, sporting competitions or parties and the funding of vacation camps for children. The goal of these activities is to bring people together outside of a strictly professional framework, to support and strengthen connections among employees.

4.2.2.5 Employee development

In an effort to prevent and mitigate the occurrence of the human resource-related risks described in Section 5.1.2 "Operational risks" of this Registration Document, the Group is implementing a set of employee development programs and policies.

Talent management process

Vallourec assists its employees throughout their careers, revealing and cultivating their talents thanks to several programs and initiatives that are rolled out within the Group.

TALENT 360

Annual interviews

The talent management information system, known as Talent 360, used throughout the Group, is one of the tools used to evaluate skills, manage objectives and assess the potential of the population of managers. Implementation of this tool, supported by the strong involvement of all managers, enabled performance reviews to be standardized and systematically structured on an annual basis.

The annual interview was overhauled in 2018 in an effort to further incorporate feedback from peers or employees when evaluating overall performance. This tool is also accessible to technical and supervisory staff in certain countries, in particular France.

In countries where the tool is in place, the rate of completion of annual performance interviews among managers in 2018 is ☑ 97%.

Professional interviews

In order to comply with the legal obligations to conduct a professional appraisal interview every two years and, in cases where an employee resumes activity after a break due to leave for maternity, parental or long-term illness, etc., measures were implemented within the "Talent 360" talent management information system during the last quarter of 2015. These professional appraisal interviews have thus been taking place since 2016.

Job posting

In order to allow managers to seize opportunities for growth within the organization, job openings are widely published in "Talent 360," with the option to apply online.

EMPLOYEE REVIEW AND SUCCESSION PLANS

The staff review, run by the Human Resources Department in collaboration with the sites and Regions, is an indispensable process for ensuring that the Group has the talent needed to implement its strategy. It also allows employee potential to be identified and developed, helping staff to evolve within the organization over the short, medium and long terms.

The staff review, which is based on criteria of performance and potential, allows true career paths to be constructed by relying on levers such as training, and internal and international mobility.

Vallourec has also generalized succession plans in an effort to ensure that key positions are filled by people with the necessary expertise.

EXPERT PROGRAM

Created in 2010, the goal of the Expert Program is to recognize employees specialized in the processes that are connected to Vallourec's core business, such as steel production, rolling, heat treatment, threading or even welding.

The Expert Program encourages and values individual career paths in these areas, and allows Vallourec to develop its competitiveness to satisfy increasingly demanding markets. To date, this program allows more than 320 experts to be recognized through the Group.

Training

In an evolving and competitive market, Vallourec has a growing need for trained and motivated staff who are able to adapt to the changing businesses and markets. The Group strives to reconcile its need for change with the individual aspirations of its employees, allowing them to grow in their careers, while developing their skills.

In addition to training programs that are centrally decided upon by the Group Training Department, each company prepares its training plan each year, in accordance with the Group's strategy and educational guidelines. Specific training programs are thus established to locally address the regulatory or market requirements.

In 2018, more than 303,588 hours were devoted to professional employee training, i.e., a 7% increase from 2017 (data collected through the "LMS" unique training management system, including for classroom training sessions that were only given at the Group level, along with those in main location countries: Germany, Brazil, United States, France and the Middle East).

Employees who trained at least two hours in the classroom, or who completed at least one e-learning training session

	Production staff		Technical and supervisory staff		Managers		Total	
	2017	2018	2017	2018	2017	2018	2017	2018
TOTAL, GROUP*	**65%**	**69%**	**64%**	**68%**	**92%**	**92%**	**69%**	**73%**

* *% of employees who trained at least two hours in the classroom, or who completed at least one e-learning training session per socio-professional category.*

In 2018, each Group employee completed an average of 15 hours of training, compared to 14 hours in 2017. Shorter-format distance training, which has been developing for several years, allows for rapid access to a larger number of employees. Distance training now accounts for 7% of the total training hours.

Type of training provided

	Total number of training hours in 2018	%	Total number of training hours in 2017	%	Change
Leadership	30,387	10%	29,567	11%	3%
Training by position	13,030	4%	22,825	8%	-43%
Languages	3,480	1%	3,545	1%	-2%
Operational excellence	226,759	75%	204,102	72%	11%
including HSE	*77,399*	*25%*	*83,170*	*29%*	*-7%*
On-demand training	29,932	10%	22,503	8%	33%
TOTAL	**303,588**	**100%**	**282,530**	**100%**	**7%**

Training related to operational excellence, which is at the core of Vallourec's industrial strategy, still predominates. Furthermore, training related to the business lines (training by position) has decreased in volume, which is explained by the preparation of two major training programs for the sales and purchasing departments, which will be fully rolled out in 2019. More generally, in-person training sessions have remained stable, and e-learning given in much shorter formats has been favored for mandatory modules.

VALLOUREC UNIVERSITY

Since its creation in 2011, Vallourec University's goal has been to be a center of excellence where employees and customers can meet to create and share in a common culture and build on their knowledge through continuous learning. Its purpose is to strengthen the values that are most important to Vallourec today: focus on the customer, agility, transparency, innovation and respect for people and cultural differences.

Vallourec University offers training programs for Group employees worldwide. These training programs may be given locally through Vallourec University in the main countries, centrally as part of international programs, which are most often organized in Europe, or via e-learning through a dedicated training platform, the Learning Management System (LMS).

All of the training programs that are launched and rolled out by Vallourec University must meet the following objectives:

- to ensure a shared understanding of Vallourec's values and corporate culture; and
- to encourage strategic, managerial and technical excellence in order to boost the Group's competitive edge.

To achieve these objectives, Vallourec University has developed four principles: experiment, share, learn and apply, as the basis of all its training. Participants have the opportunity to discuss their experiences and gain new knowledge by alternating theoretical and practical modules and applying and adapting the methods they have learned to their specific needs. Training is systematically related to the strategic objectives of the Group, Regions and its teams.

Vallourec University offers customized training and seeks to develop skills across the Group to fit with the Group's strategy. Its learning center is based on four key pillars:

- leadership, which prepares for the management of specific challenges encountered in management and leadership roles;
- on-demand training, which is focused on topics that are important to Vallourec, such as project management, communications, language skills, digital skills or even finance for non-specialists;
- functional training, aimed at improving practical and technical skills for each business line;
- training for operational excellence, which provides expertise on processes and technologies in the context of the Group's priorities and guidelines, in particular in order to contribute to the Company's performance and to the development of a unified corporate culture.

Vallourec University's activities are structured around two areas: the Learning Center and the External Stakeholders. The Learning Center is the main area and covers all training initiatives. Its modules are implemented at national and international levels, and are aimed at the continuous development and improvement of employee skills to meet the specific requirements of each level of responsibility and in the various geographical areas. They systematically integrate the Group's priorities, such as change management, customer focus and innovation.

Activities geared towards External Stakeholders aim to improve the brand's image among customers and suppliers by offering them "Business Knowledge" and "Tubular Essentials" courses. Such measures also help to attract new talent and enhance Vallourec's employer brand.

Vallourec University adopted a Learning Management System (LMS), a training management tool that offers employees more direct access to training. Intended to improve training management and access, the LMS has been gradually rolled out in the Group since May 2012. The tool offers monitoring of training times and budgets, enables employees to see what training is available in the Group, allows them to enroll in courses directly and review training histories for themselves and the employees reporting to them.

This tool allows Vallourec University to offer customized or standard training, which can be deployed quickly at the Group's various sites for all employees connected to the LMS. These offers are part of a "Blended Learning" strategy in which live training is prepared for or reinforced by e-learning sessions, leading to better understanding of the lessons and reducing time spent in the classroom. Over the next few years, Vallourec University will continue to develop a range of new live and e-learning training courses.

2018 marked a more mature phase in distance learning, in which new learning practices were adopted. Programs on safety compliance were rolled out in e-learning, and numerous modules on operational excellence were given. The number of training hours provided remotely was 22,598 hours in 2018 (hours recorded by the Learning Management System), i.e., 7% of the total training hours.

APPRENTICESHIP AND WORK-STUDY VOCATIONAL TRAINING

To ensure the transfer and enhancement of know-how in the context of Europe's demographic imbalance, and to attract more young talent with a training program geared to the needs of its activities, the Group operates a dynamic apprenticeship program:

- in Germany with an average of 191 apprentices in 2018;
- in France where an average of 112 work/study trainees took their training course in 2018;
- in Brazil with an average of 129 apprentices in 2018; and
- in the United Kingdom with an average of 27 apprentices in 2018.

4.2.2.6 Diversity and equal opportunities

Under the roll-out of the Code of Ethics (see above, Section 4.2.1 "Ethics and compliance"), a program to educate all employees on the issue of discrimination was completed using examples from daily life.

In France, training for managers includes a specific module on this topic.

Diversity

The Group considers diversity to drive performance, and thus constitute an opportunity to be developed. The Group's actions aimed at promoting diversity and combating discrimination are described below.

GENDER EQUALITY

Women represent 23% of Group managers and executives overall, with a higher percentage in the lower leadership positions (30%) and a much lower one at the senior management level (5%).

The Group's policy is defined by the Management Board with two key objectives:

- increasing the number of women in line management positions, especially in production; and
- improving women's access to leadership roles.

Indicators are in place to ensure follow-up and accountability in the actions led by the Group. Monitored by a special committee, which is chaired by a member of the Executive Committee, these concern:

- the percentage of women in line management positions in production, sales, and Research and Development; as at 31 December 2018, 13% of these positions were held by women;
- the number of women who currently hold a senior management position: as at 31 December 2018, 8% of senior management roles were filled by women.

Moreover, an action plan aimed at increasing the number of women in the talent pool was launched a few years ago. It includes:

- a mentoring program covering a dozen female managers with a high potential for advancement; priority hiring when there is equivalent competence (measurements whose scope is low due to the reduction in new hires);
- the definition of specific career paths;
- the systematic inclusion of women in succession plans; and
- the creation of a network of women tasked with bolstering women's place in Vallourec by implementing initiatives in communication, conferences, lunches, etc.

The year 2017 was marked by the Group's activities picking up in the area of women's issues:

- strengthening the network of women following a benchmark of existing networks in other groups: a monthly guidance committee, integration of new members and the launch of initiatives such as a chat with the Chairwoman of the Supervisory Board, which gathered together 800 participants;
- the launch of a dedicated group on Yammer, Women@Vallourec, which has 234 members after one year since its launch;
- numerous regional initiatives aimed mainly at structuring a path for the promotion of women in the region.

With regard to 2018, the Group analyzed the progress of diversity action plans with the help of consultants. The resulting recommendations were used as a basis to define a new program adopted at the start of 2019.

CULTURAL DIVERSITY

As an international group, Vallourec enjoys a great cultural diversity. To ensure the conditions for a harmonious and rewarding collaboration, managers who are brought to work with multicultural teams benefit from an adapted training program.

Furthermore, an average of 110 employees of diverse origins have the benefit of working internationally, for a variable duration of one to three years, and in some 20 different countries.

Equal opportunities

DISABILITIES

- In Germany and in France, priority is given to keeping employees with disabilities in service by adapting positions or work hours.
- In Brazil, in partnership with the government, Vallourec Tubos do Brasil conducts a rehabilitation program to allow employees with disabilities to continue their professional activities.

4.2.3 Relations with stakeholders

4.2.3.1 Relations with employees

➔ Commitment to responsible performance

> Train and motivate our employees through skills development, recognition of expertise, talent promotion and career development

INDICATOR	2018 RESULTS
Result of the Social Barometer internal survey (employee satisfaction rate). This survey is conducted every six months.	Based on **the 73% satisfaction rate** that was expressed during the survey conducted in November 2018, action plans were initiated and extended both centrally and locally to meet the stated expectations.

The social policy is presented in full in Section 4.2.2 "Social policy" of this Registration Document.

4.2.3.2 Relations with customers

Customer profile

The Group has an extensive customer portfolio.

- As concerns the Oil & Gas markets, its customers are:
  - national oil companies such as ADNOC, Saudi Aramco, Petrobras, international companies like ExxonMobil and Total, and independents;
  - engineering and construction oil service companies such as TechnipFMC, Subsea7 or Petrofac;
  - American distributors such as Pipeco, Premier Pipe, Champions, Pyramid Tubular and MRC Global;
  - service companies such as Schlumberger, Halliburton, Baker Hugues and Weatherford.
- On the Power Generation market:
  - builders of thermal and nuclear power plants such as Areva, Dong Fang, Doosan and Valmet.
- On the Industry market:
  - manufacturers of industrial equipment and distributors such as ThyssenKrupp, Hoberg & Driesch, Salzgitter and Klöckner, as well as end-users like Schaeffler, Horsch, and Liebherr.

In 2018, the five largest customers accounted for 25% of the Group's consolidated revenue.

It should be noted that a growing number of customers are asking the Group about its level of commitment to CSR in the form of a structured questionnaire.

The Commercial Excellence program and customer satisfaction

As part of its "Commercial Excellence" program, the Group tries to continuously strengthen its proximity to its customers.

One of the cornerstones of this program is the management of Vallourec's strategic customers: the Key Accounts. The dedicated Key Account Managers are specifically trained and certified to create a special relationship at all levels of the customer's organization. They detect their needs and contribute to differentiated sales. The community of Key Account Managers meets quarterly to exchange views and share best practices.

Another initiative of the Commercial Excellence program is the preparation of "Value Propositions." For its different offers and on its various markets, Vallourec demonstrates the value created throughout the value chain of its customers' activities through "Value Propositions."

Sales Force Management is also a lever of this program, which allows commercial functions to be professionalized at all managerial levels of the Group, through adapted training programs.

Customer satisfaction is at the heart of Vallourec's concerns. Regular surveys are taken at our customers by the Product Lines or by the Regional sales offices in order to develop detailed knowledge of the customers' experience. During these surveys, the satisfaction rate of the customers is measured according to several criteria (response time to a request for quotation, quality of technical support, quality of products and services, offer range, and lead times). When a gap between expectations and the Group realization is detected, actions are taken to improve satisfaction or, where applicable, to remedy dissatisfaction.

This approach is inseparable from the Group's efforts to raise the level of quality of its products as well as that of the associated services. Claims are systematically and fully processed.

4.2.3.3 Relations with subcontractors and suppliers

In order to prevent, identify, and mitigate the risks created by business relationships in corporate social responsibility issues (including the risk of corruption) described in Section 4.1 "Oversight plan" and in Section 5.1 "Risks factors" of this Registration Document the Group has developed and is implementing a responsible purchasing policy.

➔ Commitment to responsible performance

> Establish a network of reliable and responsible suppliers

INDICATOR	2018 RESULTS
Number of suppliers included in the formal evaluation process conducted by Vallourec of its social and environmental responsibility.	As at 31 December 2018, **more than 1,000 suppliers** were involved in the process, still particularly focused on emerging countries or regions newer to Vallourec (Asia and the Middle East, and certain categories of suppliers in Brazil). **2019 OBJECTIVE** Involve **60% of the suppliers with which Vallourec has significant revenue** (greater than €1 million) in the Group's formal evaluation process, as well as all **suppliers that are deemed "critical"**, meaning that directly impact the Vallourec product or its production process.

In 2018, the Group's purchases totaled €2,613 million, i.e., a 3% increase from 2017. They break down geographically as follows: 38% in Europe, 29% in North America, 28% in South America and 5% in the rest of the world.

National purchases

Vallourec ascribes specific importance to the local, economic and social impact of its activities on the neighboring and national populations.

National purchases, which totaled an estimated amount of nearly €2.3 billion in 2018, represented approximately 90% of purchases and directly contributed to supporting the national economy.

Subcontracting purchases for operations and maintenance represented an amount in the order of €203 million. These concerned either industrial finishing or control services, or services needed for proper operation. Subcontracting purchases were for the most part local, given the quality and responsiveness requirements that providers must satisfy. Services correspond to a significant number of highly qualified jobs that helped strengthen the local industrial fabric, although it is not easy to evaluate their number. A significant part of local subcontractors was taken into account in the CSR evaluation of Vallourec's suppliers.

Responsible purchasing policy

Vallourec's Purchasing function is organized for optimal supplier management, consistent and centralized governance, and shared deployment of tools and processes to all Group entities. This structure, which supports the line management teams and clarifies processes, is based on an analysis by type of purchase to facilitate the implementation of synergies.

Within this framework, a Supplier Quality and Performance Department established several tools and processes in recent years which aim to best monitor suppliers, their selection and their performance: creating purchasing strategies by category, a formal contracting process, management of supplier quality, measurement of supplier performance, and supplier risk analysis. All of these new processes directly emphasize criteria such as Corporate Social Responsibility (CSR), sustainable development, ethical conduct, anti-corruption and safety.

In 2018, pursuant to this policy, Vallourec:

- conducted several hundred audits or supplier risk analyses at all of its sites. This consistent effort will continue in 2019 with increased precision, in particular with respect to the streamlining of audits. To do so, Vallourec will use improved audit guidelines, still very significantly integrating the criteria on sustainable development, ethics and safety;
- continued the formal and systematic evaluation of suppliers based on CSR criteria, still with the assistance of the same specialized firm. As at 31 December 2018, 426 suppliers representing more than 37% of Vallourec's expenditure, conducted a complete assessment, along with progress action plans. The assessment showed that 52% of the suppliers evaluated already publish a formal report on their energy consumption and greenhouse gas emissions, 59% publish a report on their health, safety and environment (HSE) indicators, and 32% are ISO 14001 certified;
- continued and perfected a specific innovative process to anticipate supplier risks. A score card on the subject matter is continually updated and reviewed quarterly by the Group's Purchasing Department Committee. In 2018, this monitoring allowed the risks identified for the Group's global suppliers to be treated or eliminated. Furthermore, several e-learning training modules are available to train buyers and their internal customers in all aspects of supplier risk;
- used the full power of its unique and central Purchasing information system, which facilitates integrated management of purchases and suppliers, with visibility at all levels, from local to global. This system contains in particular a specific data sheet for each supplier in which sustainable development and safety criteria feature strongly. It also allows supplier development and improvement action plans to be managed.

Vallourec's requirements of sustainable development, ethics and safety are always one of the main messages delivered to suppliers during the Top Management Meetings (TMM) that are regularly organized with the Group's largest suppliers.

In accordance with U.S. laws and European directives, Vallourec has also committed to monitoring potential "Conflict Minerals" coming out of certain African countries that could be used by its suppliers. The Group's policy consists (i) of making sure, in accordance with the Group's Code of Ethics, the Sustainable Development Charter and the Environmental Policy, that none of these minerals are used directly or indirectly and (ii) where certain cases are detected, that solutions are found to replace them. The oversight plan was significantly expanded to cover nearly 4,000 suppliers in 2018. These suppliers were all subject to this survey's analytical matrix. The summary of responses to the questionnaires sent out and analyzed using special software did not show that Group products contained any conflict minerals from the African countries in question. The survey will be further strengthened in 2019, and a specialized company will verify all of the suppliers' responses.

Anti-corruption actions

All suppliers are aware of and have access to the Group's Code of Ethics, particularly through Vallourec's website. Furthermore, by accepting the general purchasing conditions, the suppliers formally promise to manage their activities in conformity with the values and principles of the Code of Ethics. Vallourec's systematic evaluation of suppliers based on CSR criteria, initiated in 2013 (see above), showed that 44% of Vallourec suppliers already evaluated (compared to 43% in 2017) have also formally established a Code of Ethics or a Business Ethics Charter.

Moreover, as concerns relations with local stakeholders and suppliers, in 2018, there were no comments or complaints related to respect for the values set out in the Group's Code of Ethics.

Vallourec's Anti-Corruption Code of Conduct reminds its employees, including the purchasers, of the conduct to maintain when interacting with suppliers, the rules to be respected in terms of corporate gifts and invitations, and the rules concerning conflicts of interest. Vallourec has also established the Vallourec Integrity Line, a whistleblowing system that can be accessed in eight languages through a secure Internet platform by employees and stakeholders, including service providers and suppliers.

4.2.3.4 Support of the local socioeconomic fabric

Socioeconomic impact of the Group's activity

In an effort to better determine the global impact of its activity, in 2017 the Group finalized a study, based on 2016 data, with a specialized provider to assess the Company's socioeconomic footprint, meaning to measure our contributions to the regional economies through the amount of our supplier orders, the expenses of our employees, and the taxes and duties paid. The Local Footprint® model used, with 20% precision, is based on national accounting methods. The main results concern direct jobs (full-time equivalent) in the Company, the indirect jobs created in its supply chain based on the analysis of the purchasing volume, and those ultimately created in the regional economies. The study highlights the total GDP created in the main countries where the Group is present.

Data was collected in the main countries where Vallourec has operations, namely Germany, France, the United States, Brazil, China, Mexico, the United Kingdom, Indonesia, Saudi Arabia and Mexico. This study thus allowed us to consider approximately 90% of the Group's economic scope. For this scope, in 2016, the payroll was €949 million and purchases were €2,207 million. The study examined these purchases according to 13 categories, because the effects obtained differed from one to the next. In short, the Group, which employed 18,000 people, thus supported more than 160,000 other jobs globally, i.e., a job creation factor of 9, which is in the high range, precisely given the quality of those jobs. The GDP created worldwide reached €6 billion for added value of nearly €860 million, i.e., a multiplying factor of nearly 6. For example, the Group made the most purchases in Brazil and Germany and it was in these two countries that the Group generated the most jobs, i.e., 63,000 and 21,000 respectively.

Vallourec can thus claim to create significant value benefiting its stakeholders. It can also be considered that the Group's socioeconomic impact in 2018 was, as in 2017, greater than what is noted above, since 2016, which was used as the reference, was a year of low activity and very insufficient results, although the industrial footprint has since changed. It will thus be desirable to conduct the study in question in the upcoming years.

Local community support policy

Vallourec has initiated numerous relationships with local stakeholders in its activities, such as professional organizations and local authorities, residents' associations and groups with a social or environmental objective related to its sites' activity. Although no overall systematic evaluation of the quality of relations between our sites and the local communities has yet been performed, relationships are considered to be good and no conflicts have arisen. Social actions to benefit local stakeholders are mainly conducted in countries such as Brazil and Indonesia where the expectations of the local residents are strongest and where social systems are less developed than in Western countries. With the exception of these two countries, the Group receives few requests for support.

In accordance with issued recommendations, the local level has until now had the autonomy to determine the actions to be taken, with the approval of management, and focusing on the following guidelines, which are included in simple recommendations at the Group level:

It should be mentioned that the five-year strategic plan to promote sustainable development provided for establishing a more formal framework for social actions. With the aim of furthering discussion on the subject, an exhaustive list of actions taken at all sites was made in 2015 and 2016. After internal consultation and based on the recommendations of a specialized consultant, in 2017 the Group prepared a new action policy to support local communities, which was approved by the Executive Committee, which began to be rolled out in 2018. This new policy includes three cornerstones established by the Group: education (and, in particular, the subjects of science, digital and essential knowledge), support for initiatives to preserve the environment, and encouragement of employee's volunteer involvement. Therefore, volunteer employees may take time off to get specifically involved in an initiative supported by the entity or even lead such initiatives. Each site must construct a medium-term project associated with a budget, to be validated by the managerial chain, and must encourage volunteers to get involved. Their practices must converge toward the cornerstones set by the Group in a certain number of years and make sure that its practices respect the specific prohibitions identified. Lastly, governance of these actions will be formalized at the level of each site, or even at the level of site groups that operate close to one another.

At the Group level, a specialized committee will evaluate the actions conducted and to be completed once a year and will disseminate a specific guide on best practices.

Actions taken in favor of local communities

In 2018, the resources devoted to financing partnerships were approximately €2.45 million, nominally down from 2017 (€2.7 million) but slightly higher when applying the 2017 exchange rates. This relatively low level is clearly the result of the Company's poor results during the last four years.

The review of the initiatives was conducted in conformity with the new principles indicated above and it is very significant to note that 800 employees volunteered, primarily in the United States and Brazil. A certain number of actions that should be noted have also emerged:

- In Brazil, due to historic, cultural and regulatory reasons, and because the Barreiro site is located in the middle of a very urbanized district in Belo Horizonte, relations with local stakeholders, particularly low-income populations, have for several years followed a structured process in close collaboration with local authorities, backed by tax incentives. The very numerous actions include economic development, cultural and sporting programs. In 2018, Brazil was the country where the involvement of local stakeholders was by far the strongest.

  The Jeceaba site also established economic and cultural support programs among other local populations within the framework of agreements with local communities comparable to those developed in Barreiro.

  The discussions with the local residents of the Brumadinho mine (Mineração) continued and have allowed any environmental concerns to be clarified and the implications for the local economy to be explained.

  Lastly, the local residents of the Rio das Ostras site and forest have also benefited from the support programs.

  We can thus name among the 17 reported actions:

  - the financial support to the Mario Pena hospital to develop assistance for cancer patients;
  - the specific *"Comunidade viva"* school support program. This program, implemented since 2005, has demonstrated its effectiveness, since during the 2011-2015 period, nearly 6,000 young people directly benefited from the programs, and more than 10,000 benefited indirectly, in particular the families of employees. In 2018, more than 500 young people directly benefited from the program. The very practical results are length of schooling, which has grown from 5.6 years in 2005 to 8.8 years, with a rate of integration into the workplace that rose from 45% to 53%, accompanied by a very considerable increase in family income of more than 70%;
  - the outstanding effort over the past several years to restore a historic movie theater in the city center has allowed the Belo Horizonte metropolis to become a major cultural center; the *Cine Theatro* Brasil Vallourec has become incredibly successful and has welcomed nearly 240,000 visitors in 2018 for arts activities including exhibitions, and dance, music and theater shows. As in 2017, support for the operation of this establishment is the most important action that was carried out in Brazil;
  - "Education volunteers," who provide educational support directly to nearly 600 young children, in particular for basic knowledge;
  - ongoing social and educational projects for more than 100 senior citizens near the Barreiro site;
  - a program that provides support for youth athletic activities.

- In the United States, more than 80 actions have been listed, which are primarily geared toward the support of local educational, athletic, and environmental initiatives.

- In Europe, given the level of development of social infrastructures, corporate initiatives are for limited amounts and tend, in general, to support university, cultural and sports initiatives, to finance social and charitable causes, restore cultural centers, support the local economic fabric, or even subsidize environmental restoration programs.

  In the Montbard basin in France, the Group has participated in the Alizé program for large and medium-sized local businesses, which consists of contributing pro bono expertise to SMEs by providing consulting from managers and coordinating projects categorized as part of the "Metal Valley Rural Excellence Division".

  In the Düsseldorf region of Germany, for example, cultural or sports associations are supported.

- In Indonesia the subsidiary P.T. Citra Tubindo TBK has been committed for many years to educational, medical, social and athletic support programs for the population, which in particular benefit children. These programs concerns actions that either benefit the individuals themselves, or help to construct or maintain the necessary facilities. P.T. Citra Tubindo TBK has also developed and financed a program known as "Valérie", which is designed to develop the pedagogical competence of schools that provide professional training, from which the underprivileged children of the Nongsa district most often benefit.

4.2.3.5 Relations with shareholders and investors

The Group's priority is to maintain lasting, trustworthy relations with all its shareholders, whether individual or institutional, French or foreign. It strives to give them access to exact, precise and accurate information, particularly with regard to its activities, results, outlook and strategic developments. Accordingly, and with ongoing concern for clarity and transparency, numerous dedicated communications media are available, and regular meetings are arranged throughout the year. For example, the Group annually presents its actions on a certain number of jointly identified topics to Bpifrance Participations.

In 2018, the Group participated in 240 meetings and telephone conferences with institutional investors and financial analysts. Each year, it also meets with SRI (Socially Responsible Investment) funds and analysts. This approach contributes to the Group's improvement in the area of sustainable development.

The Group maintains an ongoing dialog with its individual shareholders through various communications media and channels. Accordingly, Vallourec's Shareholders' Club notably allows them to participate in information meetings to deepen their knowledge and understanding of the Group's activities. In addition, in 2018, the Group published two editions of its Letter to Shareholders and participated in the Shareholders' Exhibition to meet its individual shareholders.

The entire scheme used by the Group for shareholders and investors is presented in Sections 2.6.2 "Relations with institutional investors and financial analysts" and 2.6.3 "Relations with individual shareholders" of this Registration Document.

4.2.4 Environmental commitment

The main environmental risks are described in Section 5.1.2 "Operational risks" of this Registration Document.

The environmental data included in the environmental reporting for 2018 concerns all of the subsidiaries controlled by the Group, noting that those of Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) (China), acquired in late 2016, have been taken into account. The Tianda plant has indeed been subject to numerous progress actions, including in the environmental domain, in an effort to gradually bring it up to Group standards.

The majority of the ratios are established using metric tons processed, in other words the sum of production from the various units, which are considered independent production workshops. This concept better accounts for the level of activity of the production units than metric tons shipped for two reasons. On the one hand, because it is more representative of the flows and stages of production, and on the other, because it is less affected by changes in inventory.

For this 2018 assessment, the Group chose to consider Vallourec's activity to consist of several business lines that all contribute to achieving the objective of manufacturing seamless steel tubes, and providing the associated services. This "sector-specific" approach is found in the "CDP Climate" questionnaire structure to which Vallourec responded in 2018, and in the «Science Based Targets" approach Vallourec has decided to adopt.

Accordingly, the Group's "Metal Processing' business line requires mastery of the following four activities:

- "Mine": extraction of iron ore from the Vallourec Mineração mine to supply the Brazilian steel mills (the Pau Branco mine is located in the State of Minas Gerais. It has a total area of 1,373 hectares, of which 32% is industrial area, 20% is an environmental protection region, and 48% is unused space);
- "Forest": operation of a eucalyptus forest in Brazil (Florestal) and manufacturing of charcoal to supply Brazilian blast furnaces and the Jeceaba pelletization unit;
- "Iron and steel":
  - manufacture of iron ore "pellets" to supply the Jeceaba steel mill. Vallourec operates a pelletization unit there to improve the yield of the blast furnaces. This facility, which operates at nominal capacity, also supplies other Brazilian steel manufacturers,
  - production of steel in the United States and Brazil to supply steel billets to the rolling mills;
- "Tubes": manufacture of seamless steel tubes and their accessories (connections, etc.) in rolling mills, heat treatment units, finishing units, and the associated services provided to customers.

On a like-for-like basis, namely by integrating the 2017 data from the Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) (China) plan, the production expressed in metric tons processed increased from 5,245 in 2017 to 5,524 in 2018, i.e., a 5.3% increase. During the same time, the tube sales volume went from 2,256 kilotons in 2017 to 2,364 kilotons in 2018, which represents a 4.8% increase.

4.2.4.1 General environmental policy

Vallourec's manufacturing policy is to minimize the impact of its activities on the environment. This commitment is clearly explained in the Sustainable Development Charter published by the Group in 2011, and in the Group's Environmental Policy, which was signed by the Chairman of the Management Board and published in 2014. Vallourec strengthened its commitment to the climate by cosigning in late 2017, along with 89 other French businesses, a new version of the French Business Climate Pledge, to contribute to a low-carbon economy. It also published its carbon policy in early 2018 (see below).

In 2013, Vallourec created a five-year environmental roadmap for each of the following three industrial divisions: Upstream, OCTG and Vallourec Tubos do Brasil, which became VSB. These roadmaps constitute a strategic Environmental plan and identify targeted environmental projects (energy, water, waste, chemical hazards and noise) whose purpose is to minimize the Group's environmental footprint. They focus on defining objectives, determining the necessary resources (including capital expenditures to be made), promoting progress and cost savings, and setting priorities. They are monitored regularly and updated each year. Their horizon is extended annually in one-year increments, and currently concerns the 2018-2023 period. Since early 2017, these roadmaps have simultaneously been adopted by the new Europe-Africa, Middle East and Asia, North America and South America regions.

Environmental management

In accordance with Group rules and guidelines, the Director of each site is responsible for setting up an effective environmental management system that is tailored to the local context and the site's activity. The Director appoints an Environment Manager who heads up all actions in this area and functionally reports to the HSE Director of each region. The "Corporate" Environment procedures are regularly updated and may be accessed at all plants on a dedicated portal.

The Environment Department, reporting to the Sustainable Development Department, coordinates all environmental initiatives. It is supported by the Environment Managers of the regions and production sites, who are responsible for implementing Vallourec's policies through:

- uniform management of environmental performance, risks, projects, communications and sharing among all Group entities;
- incentives for entities to improve their environmental performance; and
- development of environmental competencies.

These structures exist in all of the countries. The objective of this department consists of structuring the organizations by region or country in order to better take into account the specific national regulations. Under the Transformation Plan, the global workforce now totals approximately 45 full-time equivalent people for the Group as a whole.

Exchanges among the countries are continuing to develop, fostering significant progress thanks to the benchmarking of performances and solutions, particularly during regional environmental conferences.

The Environment Department is also responsible for coordinating and monitoring these actions to share best internal practices, and in particular for gathering and consolidating all of the Group's environmental data. The results are consolidated monthly and communicated quarterly to the sites, the management line, and to the Executive Committee members, in the form of a report that is specific to each Region and entity.

In 2016, the Group rolled out a new IT application to manage safety and environmental data. This application simplifies the collection and verification of data and offers new features to the sites that help them with their own local reporting.

In view of facilitating communications between environmental managers and promoting the sharing of best practices, the Environment Department has rolled out a specific application based on the Yammer social networking service.

Audits and certifications

Internal environmental audits are regularly organized in each country to assess compliance with regulations. Specifically, the Performance & Risk audit evaluates performance and risk levels for each environmental concern as well as the energy and environmental management systems (EEMS) in place. The results are used to identify priorities and corresponding action plans. These audits are part of the process of preparing for certification audits, which are now comprehensive, in other words, simultaneously concerning environmental, energy, quality and safety procedures at the regional level. As at 31 December 2018, 98% of all of the Group's sites were ISO 14001 certified, which represents more than 99% of production.

In this context, support was provided to conform to the new ISO 14001-2015 standards as concerns mapping aspects of the stakeholders and analysis of product life cycle.

Each year since 2011, the Group has identified a site deserving of the "environment award." In 2018, this distinction was awarded to the "VAM" community of experts for their work on optimizing the phosphating processes, taking into account several aspects such as waste management, water and energy savings, and the elimination of "CMR" products.

Legal compliance

Regular audits are performed by outside specialists to assess compliance of the production sites' activities with statutory and regulatory requirements.

Through the regular and systematic review of regulatory developments, actions implemented in the context of continuous improvement, new investments or organizational changes can be developed or updated. In France, an environmental regulatory watch has been set up on a dedicated intranet portal, accessible by all production sites. This portal facilitates access to useful information for various sites, and in particular compiles the procedures that are periodically updated.

Training and education

Employee training and education on the environment, sustainable development and energy efficiency are carried out in the plants through poster campaigns, periodic publications, briefings and compliance programs, among other measures. The Global Compliance Program, developed and coordinated by the Group's Legal Department, has an educational component on compliance with environmental regulations (see above Section 4.2.1 "Ethics and compliance").

In 2018, the total number of training hours in the field of health, safety and the environment listed in the LMS system (including classroom training at the Group level and those in the main location countries: Germany, Brazil, United States, France, Middle East and China) totaled 77,399 hours, compared to 83,170 in 2017. They represented 25% of the total training time.

Investments

The Group systematically incorporates sustainable development concerns in designing its investment projects. In particular, a health, safety and environment (HSE) analysis is conducted at the beginning of every project to assess the potential impacts and anticipate environmental risks.

A procedure on eco-design rules has been in place since 2015 as part of the overhaul of major project governance and updated in 2018. It is intended to verify the best practices and techniques available for design that meets HSE challenges in the following main areas:

- regulatory compliance and impacts on administrative authorizations;
- water management through recycling and recovery of rainwater using storage basins, and better quality through more efficient wastewater treatment plants, along with a reduction in the volumes of water discharged;
- waste management through improvements in collection, sorting and recycling;
- reduction of atmospheric emissions via continuous improvement of capture systems, as well as carbon emissions. To that end, since early 2017 it has been requested for the most important projects to apply a single global price to carbon emissions of €40/metric ton in order to evaluate the sensitivity of these projects' profitability to the existence of carbon pricing systems, which are likely to develop it at the world level within the framework of the latest COP recommendations. This allows the final decision to be influenced, above all if the project is structured and falls within the medium/long-term activities development policy;
- the optimization of energy consumption through the establishment of best practices, smart metering tools, in a structured process of ongoing improvement;
- potential impacts on biodiversity and consideration of the consequences of climate change;
- reduction of noise inside and outside the plants by emphasis on cutting noise emissions at source;
- safe use of chemical products with the goal of restricting the use of the most hazardous products;
- preventing the risks of occupational illnesses and improving the ergonomics at workstations.

In addition to confirming that the general principles above have been applied, some projects are clearly aimed at improving work conditions or reducing environmental impact. They concern:

- improvement in working conditions (ergonomics, noise reduction, lighting and heating)…
- ensuring environmental compliance of work equipment (filtering, fume extraction, water and gas networks, fire protection systems and product storage)…
- reduction in energy consumption (furnaces and heat treatment, lighting, insulation, etc.);

- improved water management (recovery and recycling, purification plants, etc.);
- forest management operated by Vallourec Florestal (reforestation, carbonization furnaces, etc.);
- decreased use of hazardous chemical substances (partitioning, extraction, substitution, etc.);
- limiting atmospheric emissions;
- layout and safety of plants in terms of roofing, roads and parking.

In 2018, HSE investments reached €23.4 million, i.e., approximately 18% of the Group's total investments. These investments were thus equivalent to those in 2017.

By way of example, we note the following main accomplishments:

- fine-tuning of the functioning rainwater system in Montbard (France), allowing pumping into the Bourgogne canal to be reduced;
- development of the Cleanwell Dry 2 product line, which avoids the use of grease, and in particular lead-based grease;
- in Youngstown (United States), modernization of compressed air system production stations for rolling mills and the associated distribution network;
- in Tianda Chuzhou (China), refurbishment of the rotary hearth furnace refractory with billet heating and improvement of the management program;
- at VSB Jeceaba (Brazil), partial substitution of natural gas with charcoal for the pelletization unit furnace.

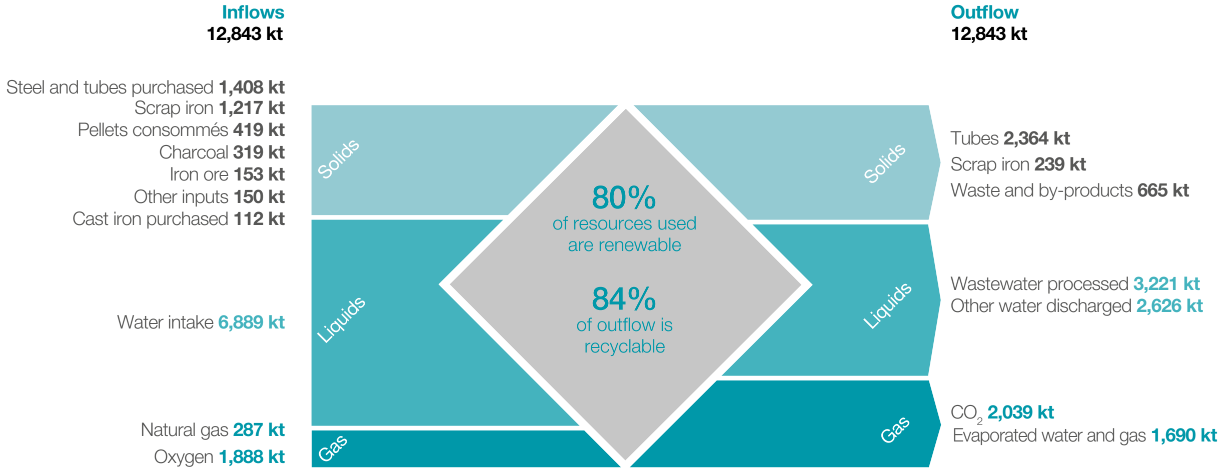
4.2.4.2 Use of resources

The specific environmental statistics (expressed in relation to metric tons processed) improved as site performance continued to improve (see below).

Resources implemented

Since 2013, the Group has conducted an analysis of all mass flows necessary for tube production at all its industrial sites. The activities of Vallourec Mineração Ltda (iron mine), of Jeceaba pelletization unit and of Vallourec Florestal (forest) are thus recorded in proportion to the iron ore and carbon productions used for Vallourec's internal steel production in Brazil and appear as inputs.

Raw materials footprint for 2018



In 2018, the 2,364 metric tons of tubes in production shipped required the consumption of 12.84 million metric tons of different kinds of inputs, up 19% from 2017 following the consideration of Tianda's activity. Water intake in 2018 represented 54% of the total resources, close to the figure of 57% in 2017.

It should also be emphasized in this regard that:

- 80% of the resources consumed are renewable (scrap and steel made from scrap, charcoal, water and oxygen), demonstrating the limited nature of the Group's net environmental footprint. This number is down from 2017 (85%), due to consideration of the Chinese steel purchases for the Tianda plant, primarily manufactured by the cast iron sector, using blast furnaces with a high consumption of iron ore and fossil coals. The extraction of non-renewable resources thus represented only 107% of the production shipped;
- 99% of production-related outputs could be considered recyclable if we consider that the CO_2 emitted is to be absorbed to reconstitute the biomass, to which the forest operated by the Group also contributes. This rate is only 84% if we do not use this assumption as a precaution;
- in 2018, the ratio of tonnage produced on resources implemented was 18.4%, compared to 20.9% in 2017.

Record of the raw materials footprint

	2014	2015	2016	2017	2018
Input/output *(kt)*	12,937	8,951	8,988	10,786	12,843
Production shipped *(kt)*	**2,323**	**1,411**	**1,281**	**2,256**	**2,364**
% renewable resources	84	83	86	85	80
% ratio of shipments/input	18	15.8	14.2	20.9	18.4

This updated analysis demonstrates the need to continue to deal with water management and, additionally, industrial waste disposal, areas in which the Group has taken action for several years. As concerns carbon emissions, the footprint remained quite positive due to consideration of the flows specific to the forest operated by the Group. Nevertheless, there are areas for progress in the upcoming years.

Life cycle analyses

In 2013, the Group also performed a life cycle analysis of two typical products in the Oil & Gas activity (tubing and casing) in cooperation with an important end customer. The ten key impacts evaluated (including carbon, energy, water, resource depletion, toxicity, eutrophication) demonstrated the weak relative impact of the Group's products. The goal is to continue these analyses on other products, in cooperation with other customers, when they so request. To this end, the Group in 2017, with the aid of an outside consultancy firm, fine-tuned a specific tool designed to perform these types of analyses for products that are already available on the market or that are being created through R&D programs. Since 2017, this tool has been successfully used by several production sites to refine the life cycle analyses of their main production as part of their 2015 ISO 14001 certifications. It is also possible to implement this for R&D actions, if a preliminary qualitative analysis shows a sufficient impact.

Consumption of raw materials

The steel used by Vallourec to manufacture tubes is prepared in part by the Group's steel mills, and in part by outside purchases of steel ingots and bars.

Internally, two processes are used: the blast furnace process in Barreiro and Jeceaba and the electric process in Jeceaba, Brazil and in Youngstown, United States. Thanks to these internal processes, the Group is on the one hand promoting the use of charcoal produced from its eucalyptus forest and, on the other, recycling scrap.

To increase the efficiency of these processes, the steel mills are trying to precisely document their internal manufacturing rules and their requirements so as to obtain different steel grades while maximizing the furnaces' energy efficiency.

Steel mill production in 2018

	Inputs from blast furnaces			
Plant *(tons)*	**Iron ore**	**Pellets and scrap**	**charcoal**	**Cast iron produced**
VSB Barreiro	84,593	176,642	141,583	120,167
VSB Jeceaba	68,815	268,635	177,707	210,905
TOTAL	**153,408**	**445,097**	**319,290**	**331,072**

	Inputs from electric steel mills			
Plant *(tons)*	**Cast iron purchased**	**Scrap iron**	**of which % of internal recycling**	**Scrap and cast iron used**
VSB Jeceaba	92,274	428,318	31	520,592
Youngstown	19,319	762,398	11	781,717
TOTAL	**111,593**	**1,190,716**		**1,302,309**

One key event in 2018 was the final shutdown of the remaining blast furnace and of the steel mill in Barreiro, Brazil on 15 July 2018. Steel production was transferred to the Jeceaba site, restarting its own blast furnace. Accordingly, 2018 production at the Barreiro steel mill dropped 53% from 2017, and production in Jeceaba conversely increased 56%.

Compared to 2017, the total internal recycling rate for scrap rose from 15 to 20%.

In 2018, the electric process (Youngstown and Jeceaba steel mills) represented 91% of Vallourec's internal steel production, and notably contributed to reducing the usage of natural raw materials from scrap recycling.

STEEL MILL CONSUMPTION IN 2018

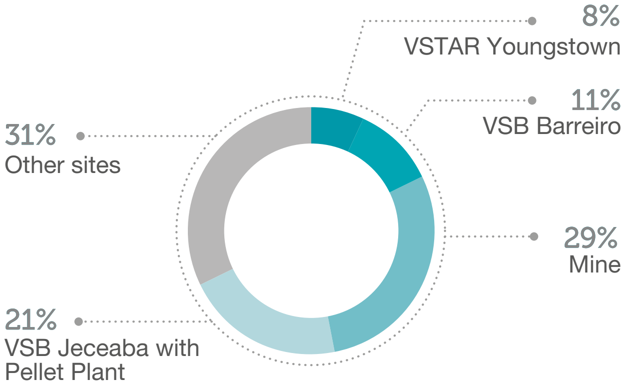
If we consider the steel purchased, the portion from the electrical process goes down to 57%, because the HKM steel mill in Europe and the majority of our Chinese suppliers use the "blast furnace" process.

Water management

The Group considers water management to be one of its major challenges due to its importance to the well-being of populations, the risks of competing usages, shortage, and because water quantitatively represents the main resource needed for the Group's production processes. It is mainly used for:

- extraction of iron ore from the Vallourec Mineração iron mine;
- cooling hot machinery (steel manufacturing and rolling tubes);
- cooling tubes after heat treatment;
- solidifying liquid steel (continuous cast);
- surface treatments, hydraulic operations, non-destructive tube tests and cooling of other tools in the manufacturing process,
- emptying of dissolved or undissolved process substances;
- sanitary uses of personnel employed at the sites.

All of the water used for the Group's entire scope totals nearly 10,600,000 cubic meters. Nearly 30% of this amount concerns the mine, for which the recorded water comes from pumping in groundwater extraction wells, which are mainly immediately released into the natural environment.



A) THE MINE

The Vallourec Mineração "Pau Branco" iron mine is located on the territory of the cities of Nova Lima and Brumadinho, in the State of Minas Gerais (Brazil). It has a total area of 1,373 hectares, of which 32% is industrial area, 20% is an environmental protection region, and 48% is unused space.

At this stage, it is interesting to note that the developments in mine processes have led water usage to be significantly reduced, as follows:

Water intake needed from the "Vallourec Mineração" Mine processes (2014-2018)

Year	2014	2015	2016	2017	2018
Iron ore production *(metric tons)*	4,392,533	4,226,598	4,002,306	4,394,245	4,693,317
Total water intake *(m^3)*	4,402,762	3,147,696	3,304,122	2,967,715	3,097,651
m^3/metric tons of iron ore	1.00	0.81	0.83	0.68	0.66

This clear decrease is the result of a new iron ore treatment process, which, since 2015, has consisted of filtering the water/waste mixture resulting from the process, instead of spreading it (as was done previously) into a 3 million m^3 hydraulic disposal site, retained by a dam. This allowed the humidity rate of the mixture to be reduced from 70% to 15%, and to establish a "dry" storage on the mine site, which eliminates any risk to the stability of the dam, which is now out of service, while the water collected is reused. This process is an industry reference, and in 2017 the mine received the Group's annual "Environment" trophy.


Dry disposal area


Installation of press filters

B) TUBE MANUFACTURING

Water use in the steel mills, rolling mills, and finishing units of Vallourec may be summarized as follows:

Water intake (%)		Water discharged (%)	
Tap water	47	Discharge to external treatment plant	16.4
River water	28.3	Discharge to internal treatment plant	30.4
Groundwater	13	Evaporation	15.1
Rainwater	8.7	Other water outlets (leaks, waste)	38.1
Water harvested (cellars, etc.)	29		
TOTAL INTAKE	**100**	**TOTAL OUTLET**	**100**

It should be noted that the water reuse rate in the circuits of the integrated plants (steel mill and tube mill) total approximately 98%, which allows for limiting the intake of water, which is still the primary resource used in our processes.

C) NUMERICAL ASSESSMENT OF WATER USED

In recent years, water intake has decreased, primarily thanks to the establishment of tools that allow the rate of reuse to increase and rainwater to be collected. Intake has nevertheless gone from 6.18 million cubic meters in 2017 to 6.9 million cubic meters in 2018, due to the increase in production and the integration of the Tianda site in China.

Yet specific water intake (rainwater included) in cubic meters per metric ton processed has significantly improved, going from 1.85 in 2016 to 1.36 in 2017, and to 1.25 m^3/ton in 2018, making the success of the savings actions carried out by the plants a reality. Rainwater collection and reuse developed strongly at certain major industrial sites, which allows surface water and groundwater intake to be reduced. Vallourec has also improved the recognition of these volumes of recovered water, which allowed it to save 600,000 m^3 in 2018.

Numerous actions can be cited, such as water needs monitoring and measurement actions (reduction, or even stoppage of pumps during production shutdowns, recovery or rainwater, recycling and reuse of wastewater).

In 2018, Vallourec Tube France in Saint-Saulve, which is undergoing restructuring, redesigned its pretreatment facilities for the industrial water pumped into the Escaut. These improvements allowed intake to be reduced from 71% in absolute value (i.e., nearly 300,000 m^3 saved) and in specific value, from 7.9 to 4.6 m^3 per metric ton processed.

In late 2014, the Brazilian site in Barreiro launched a plan to reduce the risk of water rationing, despite an already very satisfactory industrial water reuse rate. VSB Barreiro is the largest consumer of water in Belo Horizonte, and is extremely dependent on COPASA, the public entity in charge of water distribution.

Due to a chronic drought, the regional government requested that water consumption be reduced 30% compared to the 2014 benchmark. Consequently, VSB Barreiro implemented an action plan in 2015 to reduce industrial and domestic water loss, increase internal water recirculation, drill wells and develop internal campaigns to change behavior in order to encourage the saving of water resources, and in particular lower the fixed consumption level, with an objective of reducing water consumption from the public network by 32% in comparison to 2014. In 2016, these actions concerned the flow measurement system and the completion of well drilling, which allowed intakes to be reduced 26% compared to 2015. In 2017 and 2018, new progress was made, which allowed the initial objective to be surpassed.

The two large plants at the Rath site (Germany) operate with 33% rainwater.

In Montbard (France), the Vallourec Bearing Tubes plant uses 82% of the rainwater collected in two basins and the Valinox Nucléaire plant fine-tuned a new rainwater treatment and recovery system to produce very high quality industrial water for 25% of its needs.

Water intake – 2002-2018*

Year	Total water intake *(m^3)*	Water intake per metric ton processed *(m^3/metric ton)*
2002	11,526,990	2.71
2007	9,554,272	1.78
2012	7,868,009	1.60
2013	8,857,826	1.60
2014	7,831,288	1.40
2015	5,630,516	1.99
2016	5,672,035	1.85
2017	6,179,371	1.36 (1.23 without rainwater recovery)
2018 *(including Tianda)*	6,889,346	1.25 (1.14 without rainwater recovery)

* *For steel mills, tube mills, finishing lines, and related services.*

New methodology

The Group now considers that except for the mine and for the reasons mentioned above, it is desirable to integrate all of the production units into the reporting, i.e., to also take the forest and pelletization unit into account.

On this basis, 2018 intake rose to 7.50 million m^3 for the entire Vallourec scope, excluding the mine. The corresponding ratios (with and without rainwater) were 1.25 and 1.36 m^3/metric ton respectively, which are very satisfactory levels.

D) QUALITY OF WASTEWATER

Over these past few years, the quality of plant waste has improved.

Process water can be discharged into municipal networks (most sites) or into the natural environment after being treated at internal purification plants. The Group aims to reduce the quantity of discharged wastewater by increasing internal reuse. Sites are monitoring the following parameters, which the Group has been reporting since 2018 in metric tons released into the natural environment. The 2018 assessment is thus as follows, and the 2017 figures have therefore been reviewed:

- SPM (suspended particulate matter): 17.1 tons compared to 15.7 tons in 2017;
- COD (chemical oxygen demand): 77.2 metric tons compared to 63.6 metric tons in 2017;
- BOD (biochemical oxygen demand): 18.0 tons compared to 9.7 tons in 2017;
- TH (total hydrocarbons): 0.35 tons compared to 0.4 tons in 2017;
- Heavy metals: 0.46 tons compared to 0.745 in 2017.

Increases are a result of considering the Tianda plant and the restarting of the Jeceaba blast furnace, which was an exceptional event.

The progress is notably a result of the actions at the Saint-Saulve site, and at the Aulnoye-Aymeries (France) site where a very high-performing dephosphoration system was put into service.

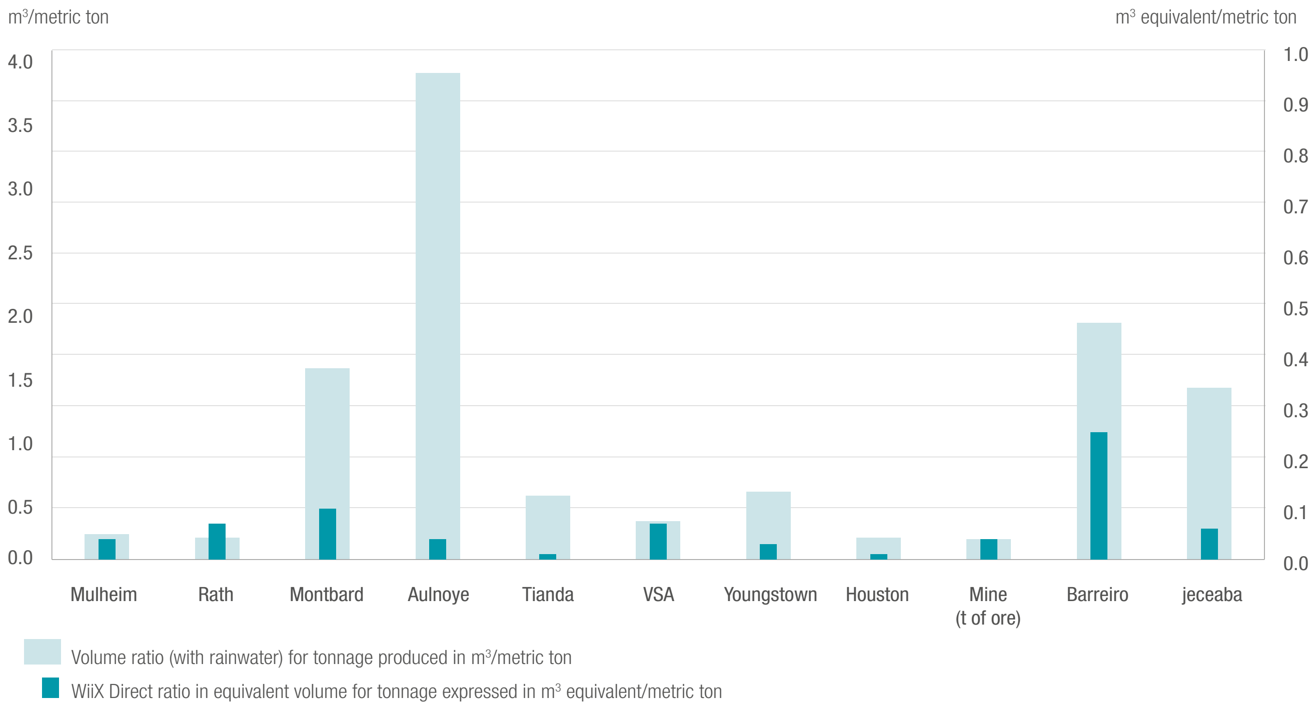
Water management is not limited to measuring intake in natural environments or municipal networks, or to monitoring the quantity and quality of waste. The materiality analysis mentioned above showed that the stakeholders devoted increased attention to water management. That is why the Group is tracking and analyzing its “water footprint” thanks to an indicator known as the “Water Impact Index”. This indicator takes into account the volumes abstracted and discharged, the quality of the abstracted and discharged water, and stress factors (water scarcity and the hydrological context). Expressed in equivalent m^3 as related to the site’s production, it synthetically measures the impact of each site with regard to the available water resources in the basin to which it belongs.

Launched in 2011, this study was repeated in 2015 and again in 2018 (2017 data) for the 11 most important sites, considering the new industrial scope: in Germany (Mulheim, Rath), in France (Montbard, Aulnoye-Aymeries), in China (Tianda), in Saudi Arabia (VSA), in the United States (Youngstown, Houston) and in Brazil (Pau Branco iron mine, Barreiro and Jeceaba). In order to take into account the latest developments in the conditions of catchment areas, a more precise stress factor was used in the study: the AWARE indicator, which was developed in 2016 as part of the WULCA (Water Use in Life Cycle Analysis) university project.

Several sites from the study use recovered rainwater (Rath, Aulnoye-Aymeries and Montbard). Jeceaba pumps river water and is beginning to collect rainwater. Youngstown gets its supply through the municipality from two dams that store rainwater. The Saudi Arabia site is supplied by desalinated ocean water. Each site thus adapts to its immediate environment to reduce its own footprint.

The WIIX measures the impact of water intake and returns in the basin concerned. It is clear that only the Barreiro site merits particular follow-up.

The summary graph below calls for the following comments:



- Mulheim and Rath have strong production, and therefore a low water usage ratio. Water is in large part returned to the natural environment, through purification plants, which results in a low WIIX;
- The two Montbard plants produce special low-tonnage tubes. One of them uses 100% rainwater, and the other 25%. The WIIX thus remains low despite it being a very fragile basin;
- The Aulnoye-Aymeries site contains several very different workshops and primarily uses rainwater collected on its site (88%). The use of this large volume with regard to metric tons produced thus has little impact, despite it being a very fragile basin;
- Tianda is similar to Mulheim: its tap water consumption is a bit high, but the WIIX remains low since it is a region with many rivers and lakes;
- VSA in Saudia Arabia uses desalinated seawater. Its impact is thus low despite being in a desert region;
- Youngstown is an integrated site that has an electric steel mill and two rolling mills. Its water consumption is thus higher, although the Ohio region has numerous dams and rivers that provide good quality water. The WIIX is thus very low;
- Houston has several finishing workshops. The water consumption is controlled and the WIIX low;
- The Pau Branco mine (Brazil) pumps very large quantities of water to be able to access the iron ore, but 90% of this water is returned to the natural environment (watering and river);
- Barreiro is undergoing a full restructuring (shutdown of the second blast furnace midyear) and its water intake should be able to continue to drop. This site is in a growing urban area. The tap water used is thus in competition with the needs of the population;
- Jeceaba is resuming the Barreiro steel production with a blast furnace and electric steel mill, as well as a rolling mill. Water is abstracted from a river and in large part returned.

The general conclusion is that the impact from water intake in the Group's sites is very reasonable, the result of the management efforts taken. Indeed, the average WIIX is around 0.07 m³ equivalent per metric ton with a maximum of 0.25 for the Barreiro site. These figures are comparable to the WIIX of major integrated European steel sites, which are between 0.20 and more than 0.30. The Vallourec Group can thus also avail itself of very responsible water resource management.

Energy policy

ENERGY CONSUMPTION

➔ Commitment to responsible performance

> Improve the energy efficiency of our equipment and reduce carbon emissions from our manufacturing processes

INDICATOR	2019 OBJECTIVE
Energy consumption in kWh/metric ton processed. In 2018, energy consumption was ☑ 3,680 GWh for natural gas, or 666 kWh per metric ton, and ☑ 1,881 GWh for electricity, i.e., 341 kWh per metric ton. Overall, total energy consumption (on a like-for-like basis including Vallourec Tianda (formerly Tianda Oil Pipe) increased 4.5% compared to 2017, while specific consumption dropped by nearly 1%. This strong performance reflects the energy savings actions (investments, ongoing improvements, management).	Set at the beginning of the year, it will incorporate the data from the Tianda site based on the values obtained and analyzed throughout 2017.

In 2018, we integrated electricity, natural gas and fuel (oil, gas oil, propane) from the following sites into Vallourec's energy assessment:

- the Tianda Chuzhou plant (China);
- the pellet manufacturing unit supplying the Jeceaba steel mill (Brazil);
- the Vallourec Mineração iron mine (Brazil).

In 2018, energy consumption (gas and electricity) represented an expense of €235 million (€258 million in 2017 foreign currency), compared to €227 million in 2017 (with the Tianda site), i.e., a 14% increase while energy consumption increased 4.4%. This is explained by several reasons, notably by the production level, geographic mix of production, consumption conditions, and the price and currency effects. This amount is equivalent to nearly 6% of the 2018 revenue, compared to 5.4% in 2017.

The Group also uses biomass as a source of energy for its pelletization unit and blast furnaces in Brazil. It owns 230,000 hectares of eucalyptus plantations and forests, for the production of charcoal, which is used to process the iron ore into pig iron in the Blast furnace.

The table below shows the energy sources used by the Group:

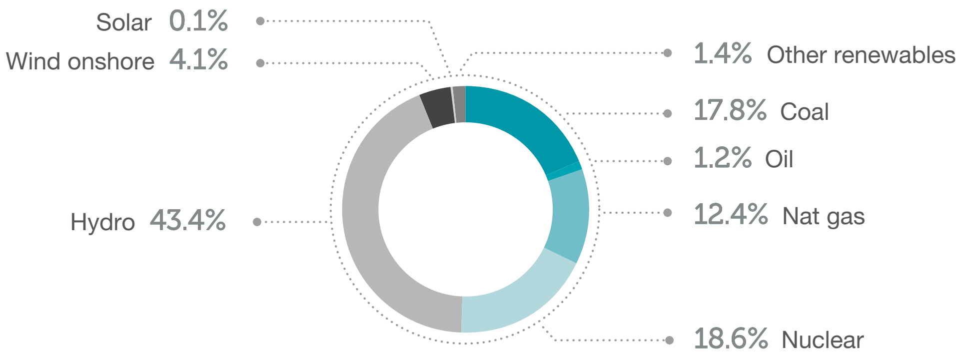
Energy source	Unit	Renewable Energy	Non-renewable Energy	Total
Electricity purchased	GWh	923	959	1,881
Natural gas	GWh	–	3,680	3,680
Fuel	GWh	–	207	207[a]
Charcoal	GWh	2,097	–	2,097
TOTAL	**GWh**	**3,020**	**4,845**	**7,865**
Energy consumed	%	38%	62%	100%

(a) Including since 2015, the fuel needed to produce electricity at certain sites, such as PTCT.

In 2018, renewables accounted for nearly 38% of the energy consumed on a Group scale. This figure was 42% in 2017 and 37% in 2016. The slight drop compared to 2017 is explained by the integration of the Tianda sites in China and the pelletization unit in Jeceaba (Brazil), which uses natural gas.

As concerns electricity, in 2018 (as in 2017), the Group also based itself on information from its providers, “market-based” data, and on “location-based” national energy mix data. This allowed the Group to better measure the impact of its choice of energy supply sources and to better manage them to reduce the Vallourec Group's carbon footprint.

The average "energy mix" is summarized by the graph below:



The share of renewable electricity represents 49.04% of the total, which is satisfactory. It primarily comes from the hydraulic dams of Brazil. The non-renewable portion is distributed between coal (China, United States), nuclear (United States, France), and natural gas (United States, Germany).

The portion of non-carbon electricity (renewable and nuclear) reached nearly 68%.

THE GREENHOUSE PROJECT

In an effort to significantly reduce energy consumption, starting in 2009, the Group established the GreenHouse project, which aimed to reduce total gas and power consumption by 20% by 2020, for an equivalent scope, product mix and level of activity, using 2008 as the reference year. With this project, Vallourec is also acting to promote a "low-carbon" economy, contributing to reducing greenhouse gas emissions. This commitment was further affirmed in January 2018 with the publication of the Group's Carbon Policy, which was signed by the Chairman of the Management Board.

The GreenHouse project is rigorous in its approach and is supported by Vallourec Management System tools and methodologies (see above). It is one of the levers of the Group's Energy and Carbon Policy and centers around the following main elements:

- sharing of best practices, led by Practice Communities, which include energy and industrial process experts in all energy-related areas (thermal, electrical, compressed air and steam production processes) and the organization of numerous Continuing Improvement Groups acting exclusively in the energy sector to improve the Group's performance. Seven objectives on the different aspects of energy efficiency have been drafted and issued as a working document for the continuous improvement groups;
- numerous quick wins as a specific result of the actions in question;
- the introduction of thermal balances and energy audits:
  - thermal balances to date, covering over 80% of the Group's furnaces. The furnace performance analysis helps to identify areas for improvement and to propose investments to increase energy efficiency, such as the installation of regenerative burners, steam heat recovery systems and better insulation,
  - energy audits at the Group's major sites identify the equipment or workshops that use the most energy, and prioritize future actions;
- a self-assessment system for sites controlled by the project leaders.

In 2018, internal steel and tubes production increased 5.3% compared to 2017, on a like-for-like basis, including the 2017 and 2018 production from the Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) plant (China).

The Group's total gas and electricity consumption (including Tianda, the mine, the forest, and the Brazilian pelletization unit) increased by 4.7 and 4.4% respectively compared to 2017.

Energy consumption per metric ton processed in 2018 was 666 kWh/metric ton for electricity and 341 kWh/metric ton for gas, compared to 672 and 343 respectively in 2017 (on a like-for-like basis). Accordingly, between 2017 an 2018, specific energy consumption dropped 0.6% for electricity and 0.9% for gas.

The energy performance for each year was calculated until 2014 using a straight-line model of consumption, taking into account the production volume and mix effect represented by the percentage of heat treatment compared to the 2008 reference year. Production levels and the organization of production (periods of stoppage and work at a given post) for 2015 and 2016 have no longer allowed such a model to be used. Furthermore, the Group's industrial footprint changed considerably in 2017, which led it to decide to change its method. With Vallourec's situation having been stabilized, the Group chose to determine its intrinsic energy performance in 2018 compared to 2017, which became the new reference in place of 2008, which was the source of the Greenhouse project. New objectives for 2025 were set in 2018 based on new assumptions and based on the Group's new scope. They will be published in 2019 under the SBT initiative process (see below).

Several remarkable actions leading to energy savings were carried out in 2018:

- in Aulnoye-Aymeries: establishment of a speed variator on the combustion air fan of a furnace, drop in temperatures of standby furnaces, leading of ongoing improvement groups for energy performance;
- in Youngstown: improvement of compressor performance and monitoring of the network distributing compressed air in the two rolling mills;
- in Jeceaba: charcoal dust supply to pellet plant burners;
- in Tianda: reduction of heat losses and improvement in regulation of the rotary hearth furnace heating billets for the rolling mill.

THE *VALLOUREC ENERGY MANAGEMENT SYSTEM*

To take this to the next level and incorporate sustainable energy management into industrial processes, the Group developed the Vallourec Energy Management System based on the methodology of the GreenHouse project and international energy efficiency standard ISO 50001.

As mentioned in its Energy policy, Vallourec is committed to having its primary production facilities ISO 50001-certified. The certification has been obtained for the Barreiro (Brazil), Vallourec Oil & Gas UK (United Kingdom), Vallourec Tubes France (Saint-Saulve and Aulnoye-Aymeries sites), Vallourec Deutschland (Germany), Valinox Nucléaire (France) and Vallourec China sites and, since 2018, for the Jeceaba site (Brazil). The production at these sites thus represents 40% of the total production.

The success of the certification and the sustainability of results depend on:

- energy efficiency training: several hundreds of operators were trained in dedicated energy efficiency sessions in France, Brazil and Scotland, with experts from each site and the assistance of specialized organizations. The training is given in various technical disciplines, such as compressed air, thermal combustion, industrial cooling, lighting, mechanization and renewable energy;
- real-time metering systems, known as "Advanced Metering Management," at the largest sites in Brazil, France, Germany, Scotland and the United States.

EXPANSION OF ENERGY PERFORMANCE RESEARCH

Vallourec Florestal, which manages the Brazilian forest, is also seeking to improve energy performance. Its teams developed a more efficient carbonization process that improves the mass transformation rate of wood into charcoal from 29% to nearly 35%. The procedure is applied to investments in new furnaces. This has led to (i) a decreased need for wood and cultivated areas for production of cast iron, (ii) a very considerable reduction in methane emissions as compared with m^3 of charcoal, as well as (iii) a reduction in the heat dispersed into the atmosphere.

4.2.4.3 Impacts and emissions

Air quality

To preserve the quality of the air surrounding its plants, the Group systematically measures the levels of atmospheric emissions and implements appropriate solutions to limit each type of emission. The emissions produced by plants are gas compounds and particles.

GAS COMPOUNDS*

- Nitrogen oxide (NO_x) and sulfur dioxide (SO_2) emissions come from furnaces for steel billets and from the heat treatment of tubes. To limit these emissions, all furnaces are fed by natural gas, which is low in emissions, and every year some of the older burners are replaced by more efficient or "low-NO_x" burners that meet the highest technical specifications for this type of emission. In 2018, 719 metric tons of NO_x were emitted (as compared to 633 in 2017), an increase connected to the recovery of activity and the integration of Tianda, and 6.42 metric tons of SO_2 were emitted, compared to 5.9 in 2017.
- Emissions of volatile organic compounds (VOCs) come from our facilities for tube lubrication, lacquering and painting, and for degreasing and cleaning tubes and machinery parts. They also come from oily vapors from rolling or cold-forming facilities and machine tools. In 2018, the nominal amounts of VOCs that were emitted, meaning before trapping and filtration, were estimated at 535 metric tons (260 metric tons in 2017). The quantity of VOCs emitted practically doubled due to the integration of emissions from the Tianda finishing plant, which has numerous lines of solvent varnishes and paints. Atmospheric emissions were thus considerably higher, especially since finishing activity increased in 2018. Actions are put in place every year to reduce VOC emissions at the source, by coordinating with product suppliers and the process community and, if that is not possible, channeling and treating emissions. As concerns vapors from surface treatments, facilities are equipped with a retention and treatment system in compliance with applicable regulations.

After the progress made in the past few years, the main source of the Group's VOC emissions is now linked to the temporary protection of OCTG tubes. Efforts to limit VOC emissions in future years will concern the corresponding facilities.

Without the Tianda site, the Group's annual emissions of VOCs for 2018 would have totaled 323 metric tons due to the clear recovery of finishing line activity.

PARTICLES

- The main potential sources of particulate emissions are steel mill furnaces and hot-rolling. Every year, retention systems are improved to continuously reduce the corresponding emissions.
- The conditions for replacing refractories in electric arc furnaces and ladle furnaces were also modified to avoid the generation of dust. In Youngstown, since the installation of the dust extractors, the working environment has considerably improved. Particle retention is very efficient and abstractions show that the heavy metal content released (chrome, lead, nickel, etc.) is well below the authorized limits.
- Tube mills and finishing plants also produce dust from facilities for hot rolling, grinding and polishing tubes. Processes for sealing, aspiration and filtering are incorporated into the machinery to collect dust at source. Where necessary, these systems can be supplemented by extraction devices and filters on the roof to capture diffused emissions.
- Trucks, cars and other handling equipment circulating outside the buildings are also a source of dust emissions. To ensure that personnel and neighbors are not inconvenienced by dust clouds, the road surfaces are coated with concrete or macadam. They may also be watered during a dry period to limit re-entrainment.

In 2018, the Group's particulate emissions totaled 487 metric tons.

* *The 2017 figures are on a like-for-like basis, i.e., excluding Vallourec Drilling.*

Atmospheric emissions *(metric tons per year)*	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
VOCs	460	551	429	319	260	535
NO_x*	772	729	511	492	633	719
SO_2*	6.9	6.5	4.6	4.4	5.9	6.4
Particles	N/A	N/A	N/A	N/A	N/A	487

* *In 2018, the data calculated using gas consumption represented 89% of the data published.*

Soil

FRENCH FACILITIES

Because of sites being old, all soil studies have been completed at the Group's initiative without being required by the authorities. The results of these investigations prompted some facilities to introduce piezometric sensor-based monitoring of underground water, after obtaining permission from the relevant authorities. The list of monitored sites is included in an official database known as BASOL.

The Cosne-sur-Loire site, which stopped its activities in 2017, continued its treatment of soil and groundwater pollution after the transfer of the machinery to the Villechaud site. In 2017, eight new piezometric tubes for monitoring groundwater were put into service, in addition to the seven already in existence, and the site was completely cleaned. In 2018, with the continued stoppage of activity and in agreement with the DREAL, a rehabilitation project was prepared. At least 77 samples were taken to investigate the soil. These studies will allow technical solutions to be implemented to address certain traces of pollution.

In 2018, investigations and diagnostics were carried out in Déville-lès-Rouen and Saint-Saulve as part of site reindustrialization projects.

In Aulnoye-Aymeries, underground investigations were conducted on an old disposal site for miscellaneous materials. By 2020, it will be confined and placed under monitoring following a new prefectural order.

In Montbard, underground investigations were conducted on an old disposal site, following a 2002 prefectural order.

FOREIGN ENTITIES

After analyses, and with permission from the local authorities, groundwater monitoring systems were set up at two facilities in Germany. As far as the Group is aware, there is no contamination at the other sites.

In Brazil, the only potential risks relate to the Barreiro plant in areas of the site previously used to store waste. A depot formerly used to store slag (a metallurgical by-product of the cast iron process) and a former sludge depot were made compliant. They underwent landscaping and the quality of the groundwater is being periodically monitored by a piezometric system. A program to make a former solid industrial waste storage site (wood, plastic, scrap, etc.) compliant with legislation, which began in 2004, is now being completed: the polluted soil has been removed and the land rehabilitated, allowing it to be considered for reuse for industrial or logistical activities.

In the United States, the industrial land is leased. Soil analyses were conducted at the majority of the sites prior to Vallourec's starting operations, in order to establish a baseline. Many of those sites are located in areas that have been industrial for many years. To the Company's knowledge, there is no record of any significant incident resulting from Vallourec's tube and steel production activities that has led to soil pollution.

Waste and by-product management

➔ Commitment to responsible performance

> Respect our environment by recovering our waste

INDICATOR	ACHIEVEMENT OF THE 2018 OBJECTIVE
Percentage of waste recovered.	The recovered waste rate reached ☑ **95.5%**, sharply up from 2017, considering the change in scope. **2019 OBJECTIVE** Given the progress made, the 2019 objective has been set at 96%.

As is the case with all industrial activities, the Group generates significant quantities of various types of waste. In 2018, 731,488 metric tons of waste was produced, which includes the mine and the pelletization unit (720 kilotons in 2017 with Tianda), and including 3.3% of hazardous waste (3.6% in 2017), a rate that has clearly been reduced in just a few years.

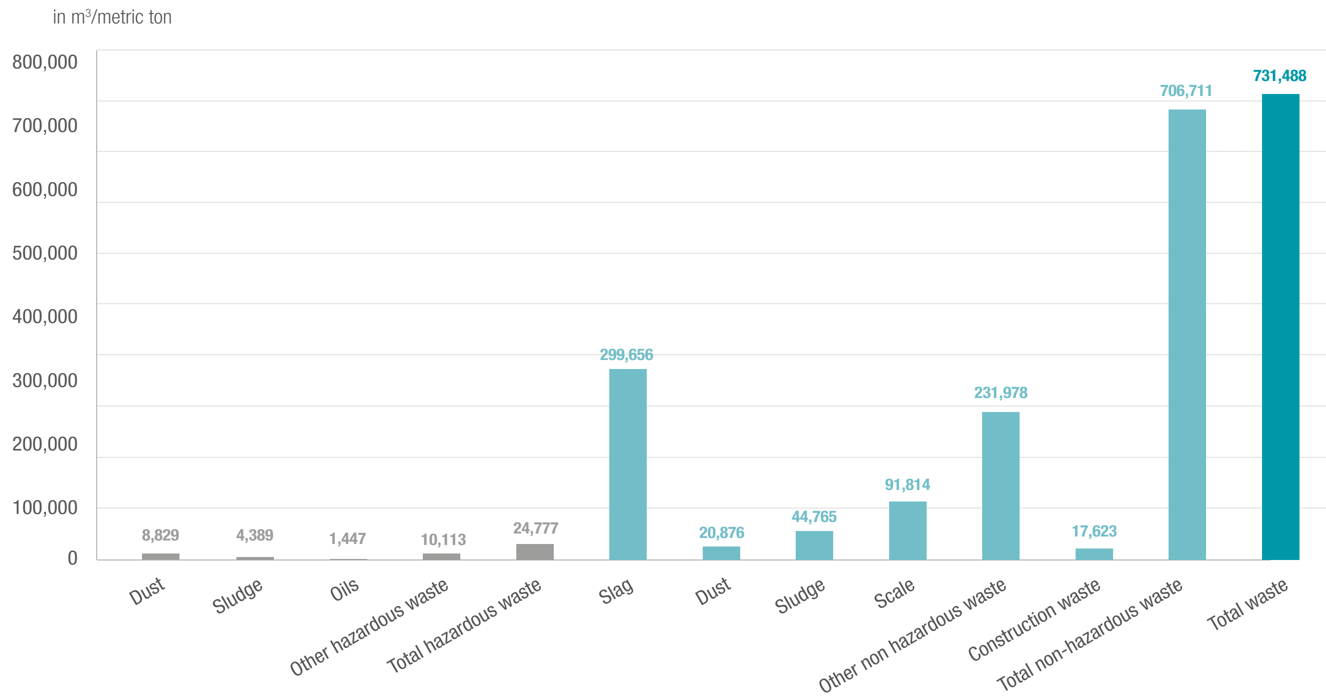
The key indicators for their management are as follows:

	2013	2014	2015	2016	2017	2018
Waste *(in thousands of metric tons)*	626	669	467	459	697 (566)(a)	731
Waste/production processed *(%)*	11	12	17	15	13	13
% hazardous waste	8.6	6.1	6.1	6.0	3.5 (4.3)(a)	3.3
% recovery	92.7	93.5	94.8	94.4	94.0	95.5

(a) The data in parentheses corresponds to the waste balance, excluding mine and pelletization plant.

The business upturn along with Vallourec's new consolidation scope had an impact on the Group's recovery rate. The Mineração iron mine and the Jeceaba pelletization unit generate a lot of recovered waste, leading to a recovery rate that was sharply up from 2017 (95.5%), even though a few sites continue to prefer landfilling over incineration due to cost considerations.

A breakdown of the waste produced appears below:



To mark its commitment to the environmental issues represented by waste management, starting in 2013, the Supervisory Board, at the recommendation of the Appointments, Compensation and Governance Committee, introduced a waste recovery target into the variable portion of Management Board members' compensation.

In this same spirit, the Group joined the AFEP initiative to promote the circular economy, which became public in February 2017 and was updated in 2018.

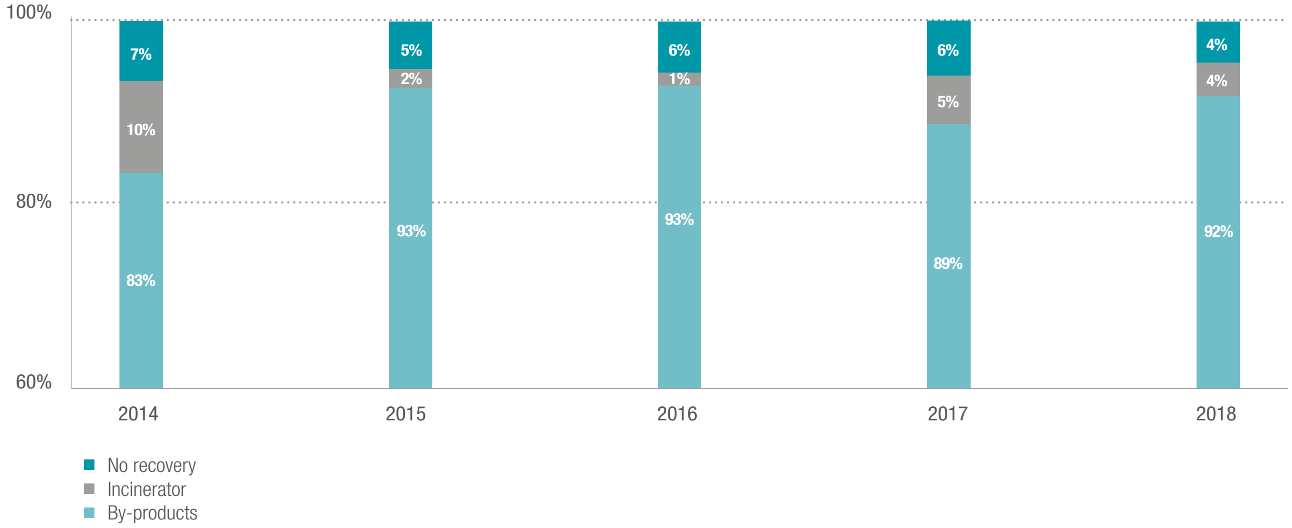
The "By-products" project

Waste management is a major economic and environmental concern for the Group, which considers that most of such waste should now be treated as value-added by-products and generate operating revenue. This is the objective of the "By-products" project.

Waste is now considered a resource to be exploited rather than an unavoidable consequence of production. Depending on its origin and type, it is managed and treated differently in accordance with local regulations, with maximum emphasis on recycling of materials or energy recovery.

In a spirit of continuous improvement, all waste categories are monitored monthly by each site with the aim of reducing volumes. The percentage of recycled waste in the form of material (by-products) was 91.9%, that of waste incinerated to produce energy 3.6%, and that of landfill waste 4.5%. The recycling of materials significantly increased in 2018, due in large part to the recycling of metal waste. Indeed, the change in scope and the exit of certain sites led us to reconsider recycling metal waste externally. Likewise, the closure of the Barreiro blast furnace and the start-up of the Jeceaba furnace led to changes in waste management in Brazil.

Waste by end-use



The main levers of progress under the "By-products" project are as follows: "Reduce, reuse, recycle":

- the reduction of waste volumes, and above all the share of hazardous waste in connection with the decrease in chemical risk;
- identification, consolidation and optimization of output for process sludge (from rolling and surface treatment), metallic residues, scale and dust;
- identification of the best channels for recycling for blast furnace slag sold to the cement industry;
- recovery of metallic waste (turnings, chips, etc.) to processes outside the Group;
- increase in the recovery rate by promoting the recovery of material rather than energy. The consolidated Brazilian sites of VSB Barreiro and VSB Jeceaba, after tests in 2013, have been using blast furnace sludge as a source of enrichment for the soil in eucalyptus forests, and as raw material for the ceramic industry. The steel mill sludge from the VSB Barreiro plant is now 100% recycled using iron ore particles to manufacture sinter feed.

By way of example, in 2018 the local teams opened new waste management channels and generated additional revenue by implementing the following initiatives:

- in Youngstown (United States), "bad" scale, which was previously sent to the landfill. now continues to be mixed with "good" scale. The resulting combination is sold to companies in the cement sector. This new business opportunity has allowed the amount landfilled to be reduced, and has decreased treatment costs. Vallourec Star Youngstown also changed its sludge dehydration practices. The addition of sawdust allowed it to reduce the amounts of sludge that are sent for treatment;
- in Brazil, numerous trial programs were launched in 2017 to reuse certain waste internally through the steel mill, mine or pellet plant (sludge, dust) or to open up new channels for recycling. Additionally, the restructuring of the sites in Brazil also allowed considerable progress to be made to reduce landfilling;
- the renegotiation of certain contracts;
- the sites of the Montbard basin (France) chose to incinerate their waste instead of landfilling it, despite a slight increase in cost applied by the supplier.

TREATMENT OF HAZARDOUS WASTE

Posing a risk to health and the environment, hazardous waste (classified as such due to the hazardous substances it contains) is subject to special treatment. The percentage relating to all waste, i.e., 3.3% in 2018, dropped slightly in comparison to 2017 (3.5%).

The Group has identified two important hazardous waste categories on which it is working:

- organic waste (sludge, oils); and
- solid mineral waste (dust).

Hazardous waste requires specific management: handling and storage are subject to strict safety rules to preserve the environment and health of the staff handling them. Furthermore, this waste is generally not very recoverable as is, and processing costs are significant.

There are thus two possibilities that have been explored by the By-products project: either reducing the portion of hazardous substances at the source, or separating that portion from the rest of the waste concerned through pre-treatment. For example, the water treatment station at the Youngstown site was able to improve the separation of mill scale particles and oil, which is responsible for its hazardous classification. Non-oily mill scale, which is not classified as hazardous, may thus be recovered for its material. The establishment of small waste oil treatment units allowed for a corresponding decrease in the generation of this waste, which is reused internally after treatment.

In Youngstown too, a change in operation for neutralizing the used phosphate and stripping baths allowed these baths to be sent to the evapo-concentrator and thus to reduce the amount of hazardous waste sent for treatment, thereby reducing costs.

Noise

Among actions to continue preventing noise pollution, in January 2012 the Sustainable Development Committee defined a noise action plan. This approach is part of the discussion conducted by the Group in accordance with the Sustainable Development strategic five-year plan to increase attention paid to employee health. The new Health and Safety policy published in 2016 clearly mentions this.

The Group's activities inevitably involve noise.

The noise arises from various sources: steel mill furnaces, the cutting and storage of steel bars, the impact between bars and tubes, and the steel-rolling process. Several types of action are in place to limit noise, reduce it as far as possible or eliminate it entirely. The most effective actions are those that allow noise to be reduced at its source. For example, some plants replace pneumatic movement commands by hydraulic movement commands or incorporate rubber between tubes to avoid a much noisier direct impact. Similarly, the tubes are cleaned with Venturi-type nozzles instead of standard nozzles.

The Vallourec Group wants to best protect its employees and local residents from the noise emitted by the machines (steel mills, rolling mills, cutting) from moving products (impact between bars or tubes) and by transporters (trains, trucks).

To determine noise levels, the sources of noise are measured and analyzed. Depending on local constraints, these measurements are taken internally, at the edge of the site, or at neighboring properties, if the plant is situated close to a residential area. At certain sites, very elaborate systems have been installed. They allow noise to be measured at very precise locations and to determine its source. Simulation software is often used to assess the reduction of noise levels that various insulating systems might provide.

To that end, the following actions have been recommended since 2012:

- establishing noise maps on the most critical and representative sites of sound levels in different workshops and staff exposure based on their number and the length of time spent working in the areas concerned;
- analyzing and improving the behaviors of employees and providers in the workshops;
- implementing best practices for new investments and refittings;
- reducing nuisances at the property limits, and thus for local residents;
- favoring group protection over individual protection measures;
- reducing noise at the source.

The project to install a new saw at the Mülheim site (Germany) shows how the noise disturbance is effectively considered starting from the earliest phases of ecodesign.

The project validation process incorporates an identification of the impacts on the noise in the workshops and the environment. The site has thus contacted an acoustics firm and implemented their recommendations, as follows:

- the machine was delivered covered so as to not exceed the limit of 85dB in the workshop;
- simulations of the impact on the sound level around the plant were made at four points of reference for local residents and allowed it to be verified that the future operation of the saw will not increase the ambient noise level;
- the study also allowed other sources of specific noise to be identified (impact from billets), and two screen walls were installed to absorb the sound.

In 2018, of the 30 industrial sites, employing more than 15,000 employees, 65% of the actions recommended above (compared to 39% in 2014) were completed or undertaken, which represents a strong increase in taking the noise issue into consideration. An additional effort should nevertheless be made to fine-tune knowledge of the noise sources and establish adapted action plans.

During investments, prior documentation on the impact from new noise sources must be provided to the Capex Committee in charge of validating projects. Sound level measurements before and after the completion of work are most often requested.

4.2.4.4 Climate change

Greenhouse gas emissions

The Group published its Carbon policy in January 2018. Its goal is to continue to better understand all of our emissions, reduce our direct and indirect emissions, position them in the dynamic of commitments of the Paris climate agreement, integrate a €40 carbon price into our decision-making processes, pursue the development of products that respect the environment, and make sure that our industrial assets will resist the future impacts of climate change.

Further to the commitments made in 2015 as part of the preparation for COP 21 and to the adhesion to the "business proposals in view of a 2015 international climate change agreement at COP 21 in Paris" initiative launched by 80 international companies, in late 2017 Vallourec, with 90 other French companies, signed a new version of the French Business Climate Pledge in order to contribute to a new low-carbon economy thanks to a significant effort to finance R&D projects and *ad hoc* investments.

It is also worth mentioning that, since 2013, Vallourec has been improving its public report under the Carbon Disclosure Project each year. Its evaluation in terms of transparency and performance has improved, since its ratings between 2012 and 2015 respectively went up from 63 to 98, and from D to C. The results of the abovementioned study and the precision of the information provided helped to further raise the rating of our commitment to a low carbon economy, earning a rating of A- in 2016, which was confirmed in 2017 and 2018.

Accordingly, in 2018 Vallourec examined, with the assistance of specialists, whether its emissions pathway could fit within the "Science based targets" approach by 2025, which aims to assess the compatibility of companies' efforts with the provisions of the 2015 Paris Agreement. Based on the findings of the analysis, the Group's Management decided to join the Science Based Targets Initiative (SBTi) in late 2018.

ANALYSIS OF EMISSIONS

(see detailed table in appendix 4)

Reducing greenhouse gases and, first and foremost, being aware of its emission level, is a goal for Vallourec.

1. It should be noted that in 2015 a detailed analysis of the carbon cycle for the forest operated in Brazil was completed with the help of university and institutional experts.

The study, which went on for several years, aimed to provide evidence that the Company had managed this forest responsibly from a carbon emissions standpoint, that it had a sound methodological basis that would allow it to estimate the emissions with sufficient precision, and, correspondingly, to set a medium-term emissions objective.

The 230,000 hectare forest area operated by Vallourec Soluções Tubulares do Brasil (VSB) within its Florestal subsidiary consists of a so-called native forest, which represents approximately one third of the surface area. It is kept as is, while the other portion is cultivated. Every year, about one seventh of the cultivated forest is cut down for the production of charcoal, and that area is then immediately replanted. As they grow, trees absorb CO_2. The trunks of harvested trees are transformed into charcoal, with a high carbon content, in furnaces designed for that purpose. The charcoal then enters the cast iron manufacturing process needed to manufacture steel in addition to iron ore. This process, which leads to the combustion of charcoal, results in CO_2 emissions. Until now, the generally accepted assumption of the profession in Brazil was that this CO_2 was gradually reabsorbed by the forest during its growth through photosynthesis.

The study in question provided specifics, over a long period, about the quantity of carbon put into play from the two-fold perspective of measuring stock and measuring the flows of carbon and greenhouse gas, taking into account initial deforestation operations. It was conducted by VSB's Sustainable Development Department, with the assistance of the University of Lavras, Professor Caetano of the University of Viçoza, and with the participation of Professor Sampaio as an expert consultant from the SR office of the GeoConsult consultancy firm, all under the methodological control of the National Forests Office, in France.

The study considered the scientific research and data that have been available for the past 30 years, and in particular used the public aerial surveys, which allowed the scope and nature of the native or exploited forest to be reconstituted over this period.

Particular care was taken, firstly in calculating the emissions at each stage in the processes of exploiting the forest and carbonization, using the scientifically recognized methods, and secondly, with regard to analyzing the phenomena of carbon sequestration in the atmospheric and underground biomass. The study lastly concerned the role of soil from the viewpoint of carbon retention, thanks in particular to on-site measurement initiatives on various kinds of soil, and around stumps and roots of trees at various stages of growth. This study will be made public once it is finalized.

In essence it shows that, in the 1983-2013 period, i.e., in 30 years, the forest sequestered 29.6 million metric tons of CO_2 equivalent, after taking into account the particular power of methane as a greenhouse gas emitted during carbonization. It also shows that, after considering the CO_2 emissions during the cast iron manufacturing process in the blast furnaces, the net sequestration over this period is 7.4 million metric tons per year, or on average 250 thousand metric tons per year; even though, until now, due to the conservative assumptions adopted, the estimated annual analysis was an emissions level of approximately 300 thousand metric tons.

Based on this information, it was thus possible to redefine a method for calculating the carbon analysis of the forest/blast furnace system that was used to establish the Group's annual carbon analysis since 2015 on more precise bases.

The calculation done for the 2018 analysis again shows a very significant level of sequestration (more than 3.13 million metric tons of CO_2), which is the result of the forest management process by our subsidiary Florestal. This is why Vallourec considered that the sequestered carbon should be included in the calculation of "scope 1" biogenic emissions as a "negative" emission.

2. Emissions were calculated using the GHG protocol methodology, which distinguishes between direct, fossil and biogenic emissions (scope 1), indirect emissions from electricity consumption (scope 2), and indirect emissions from other sources of emissions based on the Group's full scope (scope 3).

In short, the full simplified carbon analysis is as follows (the detailed analysis is commented on in appendix 4):

Simplified carbon footprint (CO_2e and CH_4 equivalent)

Type of emissions	2013	2014	2015	2016	2017	2018[(a)]
Non-biogenic direct emissions (scope 1) *(CO_2e in thousands of metric tons)*	1,126	1,273	580.3	550.9	652.3	927.1
Biogenic direct emissions (scope 1) *(CO_2b and CH_4b in thousands of metric tons)*			2,321.9	2,121.4	2,348.5	2,626.4
Total biogenic sequestration (scope 1) *(CO_2b in thousands of metric tons)*			(3,275.7)	(3,141.2)	(3,078.6)	(3,132.2)
TOTAL DIRECT EMISSIONS (SCOPE 1) *(CO_2e in thousands of metric tons)*	**1,126**	**1,273**	**(373.5)**	**(468.8)**	**(77.7)**	☑ **421.4**
Indirect emissions (scope 2) *(in thousands of metric tons)*	580	696.2	422.8	518.3	410.6	☑ 436.3
Indirect emissions (scope 3) *(in thousands of metric tons)*	3,195	2,889.9	1,782.9	1,811.3	2,416.2	3844.2
TOTAL EMISSIONS *(in thousands of metric tons)*	**4,901**	**4,859**	**1,832.2**	**1,860.8**	**2,749.1**	**4702.2**
Specific emissions *(in kg per metric ton processed)*	899	882	648	606	608	851

(a) Including the emissions from Vallourec Mineração (the mine), the Jeceaba pelletization unit and the Tianda site.

As concerns the so-called non-biogenic scope 1, the first observation is that (non-biogenic) direct ordinary emissions increased by 275 thousand metric tons between 2017 and 2018. This increase reflects:

- the integration of the Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) sites, the Jeceaba pelletization unit, as well as the iron mine (Mineração) into the scope of the consolidated carbon assessment, nearly 210 thousand metric tons;
- the consideration of new carbon-bearing raw materials consumed by steel mills, 55 thousand metric tons;
- the transfer of Brazilian steel production from the Barreiro site to the Jeceaba site, 10 thousand metric tons.

As concerns the so-called biogenic scope 1, emissions increased by nearly 280 thousand metric tons between 2017 and 2018. This is explained by:

- the consumption of carbon from the pelletization unit that was added, i.e., nearly 100 thousand metric tons;
- the Jeceaba blast furnace, which was started to replace the one in Barreiro, i.e., approximately 120 thousand metric tons;
- the increase in charcoal production on the Florestal site, i.e., 60 thousand metric tons of CO_2 and methane (expressed in CO_2 equivalent) generated during the carbonization process.

Conversely, the sequestration of biogenic CO_2 by the Brazilian forest increased 53 thousand metric tons due to the increased activity of Florestal.

We must also keep in mind that:

- two of the Group's three steel mills (Youngstown in the United States and Jeceaba in Brazil) used the "scrap" method to manufacture their steel. The process, which consists of melting scrap and recycled steel in an electric furnace, emits low levels of CO_2. This industrial feature, which limits the use of fossil carbon in comparison to the cast iron process and its blast furnaces, is one of the reasons why Vallourec's direct emissions have remained moderate;
- in Brazil, the blast furnaces in Barreiro and Jeceaba (before they closed) used charcoal as a primary source of carbon. But as explained above, calculation of the sequestration of the eucalyptus forest has resulted in the Vallourec Group's biogenic direct emissions being negative.

As concerns scope 2, indirect emissions from electrical energy consumption purchased have increased 6.2%, i.e., approximately only 25.5 thousand metric tons of CO_2, despite the integration of the Brazilian mine and pelletization unit (8.8 thousand metric tons) and of the Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) site (50 thousand metric tons) into the consolidation scope. Emissions savings (33 thousand metric tons) are primarily explained by the less carbon-bearing energy mixes.

Indeed the Group was able to note that the emissions factors (kg CO_2/kWh) of our American and Chinese suppliers dropped by 14% and 19% respectively.

As in 2017, this assessment was established based on emission factors (kg CO_2 equivalent/kWh consumed) of Vallourec's local electricity suppliers whenever information was available from them, in particular in France, Germany, Brazil and in the state of Ohio where the Youngstown site (United States) is located.

In 2018, the upstream and downstream indirect emissions (scope 3) increased 59% (1,433 thousand metric tons of CO_2) compared to those calculated for 2017. The strong increase is explained by the consideration of the carbon impact from Chinese steel purchases, produced primarily by the cast iron process, in order to supply the Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) site with steel bars. We have also added the carbon impact from outside purchases of tubes and that of purchases of raw materials for our steel mills. In all, this "upstream" line item increased by 1,620 thousand metric tons of CO_2.

200 kilotons of CO_2 were partially offset thanks to the improvement of the method for calculating emissions from the upstream and downstream distribution chain, which was implemented with the support of an expert firm.

3. Lastly, thanks to the carbon sequestration by its Brazilian forest, Vallourec was able to limit its direct CO_2 emissions (scope 1) to approximately 385 thousand metric tons. With 2018 revenue of €3,920.7 thousand, the carbon intensity (scope 1 and scope 2) of the Group totaled 0.22 kg per euro, compared to 0.09 in 2017 (without the Tianda site), which remains low with regard to industrial standards.

Valllourec continues to be considered a low-emissions entity.

2020 EMISSIONS PROJECTIONS

The Group's new industrial footprint has been effective since 2017. Under these conditions, the 2020 activity forecast allows us to evaluate what our emissions will be for that time horizon. To that end, we have noted that the operation of a single blast furnace in Brazil renders our forest area over-capacity, such that the sale of a large portion of our forest area will necessary in time.

This was the assumption that was used to calculate the 2020 emissions objective, which would thus be slightly less than one million metric tons for scopes 1 and 2, i.e., a carbon intensity of approximately 0.21 kilograms of CO_2 per euro of revenue. Even though the intensity level remains moderate, it will nevertheless be appropriate to consider accompanying measures to further reduce our emissions, such as using low-carbon electricity, establishing measures to offset our emissions and, in the long term, using systems for trapping our emissions, or even using biogas.

That is what the so-called SBTi process mentioned above will be able to validate, as it should allow an emissions objective to be set in 2025, which should logically be less than the current emissions level.

EMISSIONS REGULATION SYSTEMS

Since 2013, both French and German tube mills and the Vallourec Drilling Products site in Aulnoye-Aymeries have fallen within the scope of Directive No. 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing the European Community Emissions Trading Scheme for the third period. It is appropriate to note that the considerable reduction in Vallourec's activity and industrial footprint in France and Germany had the result of reducing the amount of free allocations compared to which the Group could benefit from to date. Therefore, the quotas allotted to the Saint-Saulve steel mill, on the order of 40,000 metric tons per year, have no longer been taken into account since 2017, due to the disposal of majority interests in the Company. The same is true as from 2018 for the quotas allotted to the French site of Vallourec Drilling Products in Aulnoye-Aymeries, due to its sale to Grant Prideco-NOV.

In 2018, the quotas allotted to the sites concerned (five in Germany and four in France) were 168,917 metric tons for Germany (down 1.9% compared to 2017) and to 38,778 metric tons for France (down 57% compared to 2017, due to a reduction in activity at the Vallourec Tubes France sites in Saint-Saulve and Déville-lès-Rouen). Therefore, in 2018, Vallourec still benefited from surplus direct allocations in the order of 27,000 metric tons of CO_2, although this figure was significantly down from 2017 (approximately 60,000 metric tons).

The impact of the mechanism on the Group's activity is not limited to consideration of its own emissions. European electricity suppliers are obligated to fully cover their CO_2 emissions with emission rights, although it is not easy to measure the corresponding impact on the price of electricity supplied. Furthermore, steel suppliers and, in particular HKM, which uses the cast iron coke-ore process, are also obligated to purchase emission quotas. Therefore, given the low average price of these emission quotas in 2018, the full impact of the ETS system provisions on the Group's operating costs remained very moderate in 2018.

Lastly, we should note that in 2017 and 2018, the European authorities agreed to new provisions applicable starting in 2021 for the greenhouse gas emissions allowance and trading scheme for the 2021-2030 period. The impact on the Group is being evaluated, given its own seamless steel tubes production, as well as the activity of its European steel suppliers, including HKM.

Adaptation to the impact of climate change

In 2014, the Group conducted a study of the risks related to the consequences of climate change, distinguishing among eight regions with distinct climate characteristics, namely Hauts-de-France, Burgundy, Rhine-Westphalia, Minas Gerais, Ohio, Texas, Batam Island in Indonesia, and the Shanghai region.

Upon an in-depth examination of the public documents and national adaptation plans, the main phenomena identified were the risks of flooding, heat waves and prolonged drought, periods of frost, disturbance of water resources and the evolution of marine or lacustrine life. Some exceptional events could become more frequent (storms and hurricanes) and damage the Group's facilities. The conditions under which the sites are operated could also worsen (availability of water needed for the tube manufacturing process, working conditions at the plants, operation of equipment during heat waves). In addition, the unique ecosystem of Group-operated forests could change or weaken over the long term. For each of these risks, a probability of occurrence was estimated, and the extent of the consequences also evaluated. Lastly, the upstream and downstream supply chains are also likely to be seriously impacted.

The main conclusions are thus as follows:

	Hauts-de-France France		Burgundy France		Rhine-Westphalia Germany		Minas Gerais Brazil		Ohio/Cleveland United States		Texas/Houston United States		Batam Indonesia		Shanghai China	
	Probability	Impact	Probability	Impact	Probability	Impact	Probability	Impact	Probability	Impact	Probability	Impact	Probability	Impact	Probability	Impact
Increase of average temperature	3	1	3	1	3	1	3	2			3	1	3	1	1	5
Heat waves	3	2	3	2	3	2			3	3	3	4	2	3	2	3
Drought	3	2	3	2	2	1	1	decrease	2	decrease	3	4	1	3		
Depletion of water resources	2	2	2	3	1	1	2	4			3	4	1	3	2	4
Snowfall/frost	3	decrease	2	decrease	3	decrease			3	decrease						
Strong rains, flooding and mudslides	3	3	2	2	3	4	3	5	3	5	2	3	1	5	1	5
Storms, tornadoes, hurricanes, etc.					2	1	2	3			2	5	1	5	1	5
Rising sea level	N/A	N/A	N/A	N/A	N/A	N/A	2	3	N/A	N/A	3	5	3	3	2	5
Drop in levels of rivers, lakes and waterways									3	3						

1	2	3		decrease	1	2	3	4	5
uncertain	*probable*	*very probable*	*data unavailable*	*reduced frequency/intensity*	*faible impact*				*very strong/ costly impact*

The study, which was conducted in 2014, will be updated in 2019, given the Group's new industrial footprint, the risk trends, recent climate events, and the greater precision of the simulation methods. The findings will be published in late 2019.

Each of Vallourec's industrial sites is in charge of further examining, at a local level, the risks that have thus been identified, and of constructing an adjusted adaptation plan, that is particularly in line with the emergency plans required by the local authorities.

This process starts with a general approach and focuses on the situations that would be deemed most critical, and falls within the mapping of major risks that the Company keeps updated, with the support for the Risks Department and the internal control teams. It also relies on the expertise of the insurance companies and takes their recommendations into account.

The raising of the Santa Barbara dam can be cited as an example (see photo opposite). It serves to retain runoff from the Pau Branco mining site in Brazil. The environmental authorities in the state of Minas Gerais recently decided that this type of dam should now be sized to absorb potential rainwater for 10,000 years instead of 100 years. Indeed one of the consequences of climate change is the increased probability that a phenomenon of a certain intensity will occur.

4.2.4.5 Biodiversity

Summary surveys have been conducted over the past few years at the main Vallourec sites, to evaluate the impact of their activities on biodiversity. No major risk has been identified.

Some of the Group's specific activities nevertheless have a direct link to biodiversity and so very specific measures aimed at protecting it have been established for several years already, or are established for a specific project.

Brazil

- The Barreiro site, located in the city of Belo Horizonte, runs an environmental education center at the edge of the city. This 20-hectare center includes three ecosystems: the *cerrado* (savanna), the transitional vegetation, and the *mata atlantica* (Atlantic forest). In 2018, this site developed an environmental recovery project on 2.4 hectares along the edge of the plant, where 800 local trees will be replanted.
- The Jeceaba site created a reference center on the "Atlantic forest" over a surface area of 660 hectares, with the goal of replanting this area with approximately 400 native species of the region. This space includes the legal reserve as well as the "green belt" and "forest belt." A surveillance system for monitoring wildlife has been established. Numerous specimens have been detected, including protected species, which is an indicator of biodiversity and helps protect regional ecosystems.
- The Vallourec Florestal subsidiary operates eucalyptus plantations, which serve to produce the charcoal needed to operate the Jeceaba blast furnace. Approximately half of the surfaces are preserved in their natural state and distributed so as to create corridors for wildlife to circulate. This subsidiary regularly participates in plant and wildlife study projects with Brazilian administrations (Regional Forest Institute), universities (Federation of Universities of Minas Gerais) or international NGOs. In 2018, a project related to understanding the *Pecari Tajacu (Cateto),* a small wild pig typical of the region. The *Cateto* project was recognized by the COPAM (Regional Council for Environmental Policy).
- The Vallourec Mineração subsidiary is located some 50 kilometers from the Jeceaba site, which it supplies with iron ore. As exploitation of this open-pit mine gradually continues, the resulting waste rock is pressed, dried, then put in landfills. The ground is in the end reforested with local species at the rate of six hectares per year. Accordingly, 1,600 replanted hectares have already been returned to nature. Additionally, 200 hectares are allocated for an "Atlantic forest" type natural reserve. A biodiversity study has allowed 176 wild species of mammals, reptiles, fish, and birds to be identified. In particular, endangered species were observed, such as the *"Leopardus guttulus"* (wild cat), the *"Puma concolor"* (puma or cougar), and the *"Chrysocyon brachyurus"* (maned wolf). 154 species of "Atlantic forest" type native plants were inventoried. Moreover, 45 caves were monitored; their specific wildlife (bats) and plants are currently being studied.

In Aulnoye-Aymeries, France

To improve knowledge of biodiversity on this site, an impact study of the Aulnoye-Aymeries area was launched in 2017, with a specialized provider in and around this site which has several plants and is located close to classified natural spaces, a space belonging to the Natura 2000 network, and listed natural heritage areas. The study, which concerned Vallourec's land holdings, the immediate periphery of Vallourec's industrial site, and a study area that was expanded to a radius of 10 kilometers, concerned unusual and invasive species.

This study, which was finalized in 2018, has shown that the same plants and wildlife exist within the site, in the fallow ground, outside, in the immediate proximity, and in the various ecosystems that comprise the Sambre basin, the marshland and flood zones bordering it, as well as in the surrounding fields and pastures.

These habitats and species pertain to conservation issues that fall primarily outside of Vallourec's holdings. However, the diversity noted within the site remains remarkable for a major industrial site such as Vallourec. Indeed, protected species have been observed on land where there is less human activity, such as the majority of the fallow land, the heap on the road to the plant, and even the stormwater basin.

This observation is thus encouraging in terms of the low impact of the Group's activities on biodiversity, and shows that it is also possible for an industrial company to help protect and develop plant wildlife.

Indonesia

For several years, PT Citra Tubindo, in association with "Batam Botanical Garden," has been planting trees, specifically fruit trees, and has maintained a mangrove close to the facilities. These actions slow coastal erosion, halt the penetration of saltwater towards the interior, and protect the shores from storms, as well as enabling carbon to be retained, and the toxic products contained in the water to be absorbed. These actions are supported by the local populations, academic institutions and students. Accordingly, in 2018, more than 300 trees were placed on the site and more than 100 in the botanical garden. The collaboration with the BBG will continue in 2019.

Appendices

Appendix 1 – Report by one of the Statutory Auditors, appointed as independent third party, on the consolidated statement of non-financial performance included in the management report

Fiscal year ended 31 December 2018

To the Shareholders,

In our capacity as Statutory Auditor of Vallourec S.A., (the "Company"), appointed as independent third party (ITP) and certified by COFRAC under number 3-1049(1), we hereby report to you on the consolidated statement of non-financial performance for the year ended 31 December 2018, included in the management report (hereinafter the "Statement"), presented in the Group's management report pursuant to the legal and regulatory requirements of Articles L.225-102-1, R.225-105 and R.225-105-1 of the French Commercial Code.

COMPANY'S RESPONSIBILITY

The Management Board is responsible for preparing a Statement pursuant to the legal and regulatory requirements, including a presentation of the business model, a description of the main non-financial risks, a presentation of the policies applied with regard to those risks, as well as the results of such policies, including key performance indicators.

The Statement has been prepared in accordance with the Company's procedures (hereinafter the "Guidelines"), for which the material items are presented in the Statement and available on request from the Company's registered office.

INDEPENDENCE AND QUALITY CONTROL

Our independence is defined by the provisions of Article L.822-11-3 of the French Commercial Code and in the French Code of Ethics for Statutory Auditors. In addition, we have implemented a quality control system including documented policies and procedures regarding compliance with the ethical requirements, professional guidelines and the applicable legal and regulatory requirements.

RESPONSIBILITY OF THE APPOINTED INDEPENDENT THIRD-PARTY STATUTORY AUDITORS

Our role, based on our work, is to formulate an opinion, having reached a conclusion of moderate assurance on:

- compliance of the Statement with the provisions of Article R.225-105 of the French Commercial Code;
- the fairness of the information supplied pursuant to Article R.225-105 paragraph 3-I and II of the French Commercial Code, namely the results of policies, including key performance indicators, and the actions relating to the main risks, hereinafter the "Information".

Our role include expressing, at the request of the Company and outside the scope of accreditation, reasonable assurance that the information selected(2) by the Company and identified by the symbol ☑ in Chapter 4 of the management report is presented in accordance with the Guidelines in all its material aspects.

Our role, however, does not include expressing an opinion on:

- the Company's compliance with other applicable legal and regulatory provisions, particularly concerning the vigilance plan, the fight against corruption and tax evasion;
- compliance of products and services with the applicable regulations.

Nature and scope of the work

We conducted our work described below in accordance with Articles A. 225-1 *et seq.* of the French Commercial Code defining the conditions under which an independent third party performs its engagement and with the professional guidance issued by the French Institute of Statutory Auditors *(Compagnie nationale des Commissaires aux comptes)* relating to this engagement and to ISAE 3000 (Assurance engagements other than audits or reviews of historical financial information).

We have performed work that allows us to assess the Statement's compliance with legal and regulatory provisions and the fair presentation of the Information:

- we have obtained an understanding of the business of all companies within the consolidation scope, of the main social and environmental risk exposure relating to this business, and, of its effects as concerns respect of human rights, combating corruption and tax evasion, as well as the resulting policies and their outcomes;
- we have assessed the suitability of the Guidelines in terms of their relevance, completeness, reliability, neutrality and understandability, and taking into account industry best practices where appropriate;
- we have verified that the Statement covers each information category pursuant to Article L.225-102-1-III in regards to social and environmental issues, as well as respect of human rights, and combating corruption and tax evasion;

(1) Scope available at www.cofrac.fr.

(2) See the list of indicators presented in Appendix 1 of this report.

- we have verified that the Statement includes an explanation of the reasons that account for the absence of the information required by paragraph 2 of Article L.225-102-1-III;
- we have verified that the Statement presents the business model and main risks linked to the business of all the companies within the consolidation scope, including, where relevant and proportionate, the risks created by its business relationships, its products or services, as well as the policies, actions and results, including key performance indicators;
- we have verified that when it is relevant to the main risks or policies presented, the Statement presents the information contained in Article R.225-105-II;
- we have assessed the process for selecting, and validating the main risks;
- we have inquired about the existence of internal control and risk management procedures implemented by the Company;
- we have assessed the consistency of the results and key performance indicators used with regard to the policies and main risks presented;
- we have verified that the Statement covers the consolidated scope, namely all the companies included in the scope of consolidation pursuant to Article L.233-16 within the limits specified in the Statement;
- we have assessed the collection process implemented by the entity with regard to exhaustiveness and the fair presentation of the information;
- For the key indicators and the other quantitative results[1] that we considered the most important we have implemented:
  - the analytical procedures that involve verifying the accurate consolidation of the collected data, as well as the consistency of their changes;
  - tests of details using sampling techniques that involve verifying correct application of the definitions and procedures and to reconcile the data of supporting documents. This work was performed with a selection of contributing entities[2] and covers between 21% and 80% of consolidated data for key performance indicators and selected results for these tests;
- we have consulted the documentary sources and conducted interviews to corroborate the qualitative data (actions and results) that we considered to be the most important[3];
- we have assessed the consistency of the whole Statement based on our understanding of the group of companies included in the consolidation scope.

We believe that the work we have carried out, based on our professional judgment, is sufficient to provide a basis for our moderate assurance conclusion; a higher level of assurance would have required us to carry out more extensive procedures.

Means and resources

Our work involved the skills of six people and was carried out between November 2018 and March 2019 over a period of approximately eleven weeks altogether. We were assisted in our work by our sustainable development and social responsibility specialists. We have carried out around twenty interviews with the persons responsible for preparing the Statement.

Conclusion

Based on our work, no material irregularity has come to our attention that causes us to believe that the Statement of Non-Financial Performance does not comply with the applicable regulatory provisions or that the Information, taken as a whole, is not presented fairly in accordance with the Guidelines.

(1) See the list of key performance indicators and other quantitative results presented in Appendix 1 of this report.

(2) Social information and safety: Vallourec France S.A. (France); Anhui Tianda Oil Pipe Co., Ltd. (China); Vallourec Deutschland GmbH (Germany); Vallourec Star Youngstown (United States).

Environmental information: Anhui Tianda Oil Pipe Co., Ltd. (China); Vallourec Tubes France Aulnoye, Vallourec Tubes France Saint-Saulve (France); Vallourec Star Youngstown (United States); Vallourec Soluções Tubulares do Brasil Barreiro, Vallourec Soluções Tubulares do Brasil Jeceaba, Vallourec Florestal Ltda (Brazil).

(3) See the list of due diligence procedures presented in Appendix 2 of this report.

Reasonable assurance on a selection of non-financial information

Nature and scope of the work

For the information selected by the Company and identified by the symbol ☑ in Chapter 4. “Corporate social responsibility information” of the Statement, we have performed our work of the same nature as described in the paragraph “Nature and scope of the work” above for the Information considered the most important, but in more depth, particularly regarding the number of tests.

The selected sample represents 46% of the workforce, and between 46% and 80% of environmental information identified by the symbol ☑.

We consider that this work enables us to express a conclusion of reasonable assurance for the information selected by the Company and identified by the symbol ☑.

Conclusion

In our opinion, the information selected by the Company and identified by the symbol ☑ in Chapter 4. “Corporate social responsibility information” has been prepared, in all material respects, in accordance with the Guidelines.

Paris-La Défense, 25 March 2019

KPMG S.A.

Fanny Houlliot	Alexandra Saastamoinen
Partner	*Partner*
Sustainability Services	

Appendix A

Social indicators	Level of assurance
Workforce at 31/12	Reasonable
Breakdown of the workforce by age, gender and geographical area	
New hires	
Departures	
Lost Time Injury Rate (LTIR)	
Total Recordable Injury Rate (TRIR)	
Rate of completion of annual performance interviews among managers	
Rate of absenteeism	
Severity rate	Limited
Number of employees having participated in a training session	
Number of training hours	

Environmental indicators	Level of assurance
Electricity consumption and natural gas consumption	Reasonable
CO_2 emissions for scopes 1 and 2	
CO_2 emissions for scope 3, linked to losses during extraction, storage and transport of energies	
CO_2 emissions for scope 3, linked to purchases of materials, goods and services	
Water intakes (per source)	
Volume of hazardous and non-hazardous waste	
Percentage of waste recovered (including recycled)	
Water discharged	Limited
Quantity of metals per liter of water discharged	
VOC emissions	
NO_x emissions	
Percentage of substances identified as CMR replaced	
Consumption of raw materials – Ore, pellets and scrap metal, charcoal and purchased cast iron	

Appendix B

Qualitative social information
Diversity and equality measures
Employer-employee dialog measures
Qualitative environmental information
Adaptation to the consequences of climate change
Ground quality preservation measures
Waste management and hazardous waste measures
Qualitative societal information
Anti-corruption measures
Human rights measures
Supplier evaluation schemes

Appendix 2 – Methodological note

Designed to inform shareholders and the greater public about the actions taken by Vallourec to promote sustainable development, Chapter 4 of the Registration Document complies with the Grenelle 2 Law of 12 July 2010, and in particular Articles L.225-102-1, R.225-104 and R.225-105 of the French Commercial Code. The information contained herein is derived from database systems deployed worldwide, at each site concerned.

All of the CSR information published in Chapter 4 of the Registration Document was verified by an Independent Third Party Body, whose report appears on page 120 of this document.

These assertions clearly explain the Group's CSR strategy, as well as its actions in these areas.

GUIDELINE INDICATORS

Vallourec defined its guidelines by reproducing the list of CSR information that appears in Article R.225-101-1 of the French Commercial Code *(Code de commerce).* See concordance table below. Other indicators were constructed based on those published by the Global Reporting Initiative (GRI), which proposes CSR reporting indicators for global companies.

Environmental and safety indicators have been drawn from the CR 360 reporting system since late 2016, which has allowed for monthly monitoring and consolidation. They are included in a project definition worksheet provided by the Sustainable Development Department to its network of local contacts in the Group's four working languages (French, English, German and Portuguese).

Social indicators are also the subject of a precise and standardized Group-wide definition, and covered by a detailed procedure.

- Indicators related to workforce and hours

  The data is automatically collected by the GatheringTools system, and then sent to several SIRH tools, including Qbik (consolidating and management of social data). The Human Resources Department collects this data, which goes through an on-site correspondent.

- Training-related indicators

  The data is collected in the LMS (Learning Management System). Calculation and consolidation are completed by the Group Training Department: the Vallourec University Department.

REPORTING SCOPE

The environmental reporting scope is determined according to rules established by Vallourec's Sustainable Development Department. The environmental reporting scope includes:

1. industrial sites. The following are thus excluded from environmental reporting: the Shared Services Center in Valenciennes, the administrative offices and headquarters, and all sales offices. Research centers are also excluded, with the exception of Vallourec Research Center France, whose activity is more varied;
2. as concerns the consolidation of safety indicators, all sites are incorporated, including the registered offices in Boulognes and Rath, except for the small sales offices (less than 20 people);
3. sites belonging to Vallourec for more than six months. This rule is to be considered when a disposal or acquisition occurs. The Vallourec Tianda (Anhui) Co., Ltd (formerly Tianda Oil Pipe) company, which was acquired in late 2016, which was not taken into account in 2017, due to environmental data that was still partial and incomplete, was integrated in 2018;
4. sites with active industrial operations during the year. This excludes construction sites that have not been in operation for more than six months;
5. sites for which Vallourec owns more than 50% of the voting rights. Conversely, the sites for which Vallourec is a minority shareholder are not consolidated (for example, this is the case for the HKM steel mill in Germany).

The social reporting scope includes companies within the tax consolidation scope, with the exception of the company Vallourec Niko Tubes Holding GmbH, created in 2018, which will be integrated within the social reporting in 2019.

CONSOLIDATION PRINCIPLES

1. The companies and sites included in the reporting scope in accordance with the rules described above are not accounted for using the equity method, but are treated equally in the reporting consolidation – that is, as wholly owned by the Group.
2. Precautionary principle: consolidation is established on the basis of prudent assessments to avoid transfer risk and reputational risk.
3. Accrual principle: all fiscal years are independent from one another.

Consolidation and auditing

Environmental indicators are consolidated and audited monthly by the Sustainable Development Department (timeliness, fairness, completeness). In case of doubt or inconsistency, the Regions and sites involved are questioned and must provide sufficient explanation to clarify the given indicators, as well as the achievement or shortfall of the targets set for the year. This step is essential to ensure the quality of the reports and the integrity of the indicator monitoring system within a continuous improvement process. In addition, to verify and compare the data, the Sustainable Development Department issues a quarterly summary to General Management and to all sites.

Safety indicators are issued monthly, after verification, to General Management, the Regions and divisions, and all sites.

PRODUCTION CALCULATIONS

By "metric ton processed" Vallourec means metric ton produced in each plant (number of units of work produced in the plant), whether of steel, hot-rolled tubes or cold-finished tubes. The production of each plant is added together to calculate the total production in metric tons processed or work units.

For consolidated sites, such as Vallourec Star in Youngstown (United States), and Vallourec Soluções Tubulares do Brasil (VSB) in Barreiro and Jeceaba (Brazil), the total production is the sum of the steel and tubes produced.

Production of iron ore by Vallourec Mineração, the manufacture of pellets in Jeceaba, as well as the production of charcoal by Vallourec Florestal are, however, not included in the Group's total production.

By "metric ton shipped" Vallourec means metric tons of tubes and accessories shipped to customers during the year. This production indicator is published in the Group's results.

Environmental data are routinely expressed in absolute and relative terms, in both graphs and tables of quantified results.

Relative values are divided either by production, expressed as metric tons of tubes processed (which allows different sites to be compared) or metric tons of tubes shipped, expressed as metric tons of tubes (which helps in estimating the environmental footprint of tubes shipped to customers).

VERIFICATION OF CSR INFORMATION

All of the CSR information published in Chapter 4 of the Registration Document was verified by an Independent Third Party. A selection of indicators identified by the symbol ☑ for more in-depth verifications, with a check at the reasonable assurance level. For each piece of information presented, Vallourec has prepared a file to demonstrate a complete and rigorous implementation of its policy.

METHODOLOGICAL LIMITATIONS AND SPECIAL CASES

The following table lists some exceptions or special rules.

Issue	Plant concerned	Description
Atmospheric emissions of NO_x and SO_2	All those consuming natural gas	In the absence of measures performed by the site on the quality of the gases emitted from its combustion facilities, the NOx and SO2 emissions are calculated by multiplying its natural gas consumption (in kWh) for the following emissions factors: 0.0001944 for NOx and 1.73913*10^(-6) for SO2 (EF source: suppliers of gas in France)
Wastewater quality	Vallourec Tubes France (tube mills in Saint-Saulve, Déville and Aulnoye), Vallourec Deutschland Rath, Vallourec Star Houston, PT Citra Tubindo, VSB Jeceaba	Indicators for monitoring wastewater quality (SPM, COD, TH and 10 metals) are only consolidated for sites that discharge wastewater directly into the environment after internal processing at their effluent treatment plants. These indicators are calculated based on the weighted average concentration per flows of discharged wastewater. This data is based on a list of metals established by the Group, with the knowledge that the data reported by the sites only concerns the analyses imposed by the local regulations.
Waste	All plants	"Historical" waste (hazardous/non-hazardous) produced prior to the reporting period and stored on site is not counted in the total tonnage of consolidated waste. Waste is classified as hazardous or non-hazardous according to the local regulations.
Sludge from blast furnaces and steel mills	VSB	In Brazil, sludge generated by blast furnaces is classified as non-hazardous waste, and is a totally different type of waste from tube mill sludge.
Dust from blast furnaces and steel mills	VSB	In Brazil, dust generated by blast furnaces is classified as non-hazardous waste, and is a totally different type of waste from the other types of dust produced by the other steel mills.
Methane	Vallourec Florestal	When estimating methane emissions, the calculations are based on the statistical study in Appendices 5 and 6 of the "Project Design Document Form (CDM PDD) – Version 03" registered as a CDM 8606 project at UNFCCC: "Carbonization Project – Mitigation of Methane Emissions in the Charcoal Production of V & M Florestal, Minas Gerais, Brazil", which is available at: https://cdm.unfccc.int/Projects/DB/BVQI1354824411.24/view According to that study, process methane emissions depend on the gravimetric yield of wood carbonization in furnaces (Appendix 5), or the ratio between the final mass of dry charcoal (after combustion) and the initial mass of wood (Appendix 6).
Sequestration of Florestal	Vallourec Florestal	The method for calculating amounts of CO_2 sequestered by the forest during the reference year is as follows. It derives from information drawn from the study conducted in cooperation with numerous scientific authorities (See 4.5.4.1). Annual sequestration is estimated when the tree is cut to be transformed into charcoal. The reference value is thus the annual charcoal production. The reference study allowed a 30-year observation period to be identified, considering the amount of charcoal produced, the amount of carbon absorbed by the tree trunk and the amount absorbed by the roots and stumps in the soil. It was thus possible to calculate the ratios of carbon sequestered by the roots in relation to the tonnage of charcoal produced and ultimately consumed in the blast furnaces, and the ratio of carbon absorbed by the tree trunk, also in relation to the charcoal produced. These ratios are then used to calculate the amounts of carbon sequestered annually. The amounts of carbon emitted during carbonization of the trunks and the amounts of methane emitted during the carbonization process in the *ad hoc* furnaces are also in proportion to the charcoal produced.
Water consumption	Vallourec Mineração	The water consumption of the site only corresponds to the part used for the extraction and land watering process, and not to the mine water that is sent directly into the river like rainwater.
Raw materials	All plants	Indicators of raw materials (iron ore, iron ore pellets, charcoal, charcoal dust, scrap, cast iron) correspond to the amounts used for steel production. Scrap is considered by Vallourec as a by-product and is not included in either the waste or the recovery rate indicator.
Compensation	All	The "Compensation" indicator is calculated as the sum of staff compensation, social security charges and pension expenses.
Turnover	All	The turnover rate includes departures and arrivals for the year in question and is defined as follows: (number of departures + number of arrivals for the year) x 2 x 100 / (workforce at 31/12 of the preceding year). It includes departures, arrivals, and transfers of the workforce within the zones. The reasons for departure included are: retirement, resignation, dismissal, and other (death, change of category, contract termination, termination after trial period).

Method of accounting for lost days following a workplace accident in the United States	All	In the United States, lost days for workplace accidents are not counted beyond the 180th day in accordance with applicable OSHA regulations. This accounting method is specific to the United States and differs from the rule recommended by the Group for accounting for lost days.
Number of training hours	All	The data relating to the number of training hours published covers classroom-based learning that exceeds two hours and e-learning. The percentage *of employees trained is calculated in relation to the number of employees that have had access to training during the fiscal year and not to the workforce at the end of the period.* Classroom-based learning of less than two hours is excluded from this data.
Number of hours worked	Vallourec Tianda (formerly Tianda Oil Pipe)	Hours worked do not include the hours of truck drivers who deliver the billets, provide internal transportation between the workshops, and load the products for delivery to a port of destination or to customers. The estimated impact represents less than 0.4% for the Vallourec Group as a whole in 2018.

Appendix 3 – Concordance table between the information required under Articles L.225-102-1 and R.225-105-1 of the French Commercial Code and the information in this chapter

1°	**GROUP BUSINESS MODEL**	Profile (p.2) / 3.2 / 3.6 / 3.8 (p.32 / 56 / 66)
2°	**DESCRIPTION OF THE MAIN RISKS**	
a)	**Environmental issues**	4.1.1 / 4.2 Introduction / 5.1.1 / 5.1.2 (p.74 / 78 / 136 / 138)
b)	**Social issues**	4.1.1 / 4.2 Introduction / 5.1.2 (p.74 / 78 / 138)
c)	**Corruption and tax evasion issues**	4.2 Introduction / 5.1.3 (p.78 / 143)
d)	**Human rights issues**	4.1.1 / 4.2 Introduction / 5.1.2 / 5.1.3 (p.74 / 78 / 138 / 143)
3°	**DESCRIPTION OF THE POLICIES APPLIED AND THEIR RESULTS**	
a)	**Environmental issues**	4.2.4 (p.101)
b)	**Social issues**	4.2.2 (p.81)
c)	**Corruption and tax evasion issues**	4.2.1 (p.79)
d)	**Human rights issues**	4.2.1 / 4.2.2.2 / 4.2.2.3 / 4.2.2.6 (p.79 / 89 / 91 / 96)
4°	**SOCIAL INFORMATION**	
a)	**Employment**	
1.	Total number and breakdown of employees by gender, age and geographical segment	4.2.2.1 (p.81)
2.	New hires and dismissals	4.2.2.1 (p.81)
3.	Compensation and compensation trends	4.2.2.4 (p.93)
b)	**Organization of work**	
4.	Organization of working time	4.2.2.1 (p.81)
5.	Absenteeism	4.2.2.1 (p.81)
c)	**Health and safety**	
8.	Health and safety conditions at work	4.2.2.2 (p.89)
10.	Workplace accidents, including their frequency and severity, and occupational illnesses	4.2.2.2 (p.89)
d)	**Employee relations**	
6.	Dialog between employers and employees, including procedures for informing, consulting and negotiating with staff	4.2.2.3 (p.91)
7.	Review of collective bargaining agreements	4.2.2.3 (p.91)
e)	**Training**	
11.	Training policies implemented, particularly for environmental protection	4.2.2.5 (p.94)
12.	Total number of training hours	4.2.2.5 (p.94)
f)	**Equal opportunity**	
13.	Measures taken to promote gender equality	4.2.2.6 (p.96)
14.	Measures taken to promote the employment and integration of the disabled	4.2.2.6 (p.96)
15.	Anti-discrimination policy	4.1.3 / 4.2.2.6 (p.77 / 96)
5°	**ENVIRONMENTAL INFORMATION**	
a)	**General environmental policy**	
20.	Organization of the Company to take environmental issues and, where appropriate, environmental assessment or certification efforts into account	4.2.4.1 (p.101)
22.	Resources devoted to the prevention of environmental risks and pollution	4.2.4.1 and 5.1. 2 (p.101 / 138)
23.	The amount of provisions and guarantees for environmental risks, provided that such information is not likely to cause serious harm to the Company in an ongoing dispute	4.2.4.1 (p. 101) and Note 17 to the financial statements (p.211)

b)	**Pollution**	
24.	Measures to prevent, reduce or remediate discharges into the air, water and soil which seriously impact the environment	4.2.4.3 (p.111)
27.	Consideration of all forms of pollution specific to a business, particularly noise and light pollution	4.2.4.3 (p.111)
c)	**Circular economy**	
	Waste prevention and management	
	• waste prevention, recycling, reuse, other forms of recovery and elimination measures	4.2.4.3 (p.111)
	• actions to combat food waste	N/A
	Sustainable use of resources	
28.	• water consumption and water supply according to local constraints	4.2.4.2 (p.103)
29.	• consumption of raw materials and measures to improve efficiency in their use	4.2.4.2 (p.103)
30.	• energy consumption, measures to improve energy efficiency and use of renewable energy	4.2.4.2 (p.103)
31.	• land use	4.2.4.3 (p.111)
d)	**Climate change**	
	Significant items for greenhouse gas emissions generated from the Company's activity, particularly through use of goods and services that it produces	4.2.4.4 (p.115)
	Measures taken for adaptation to the consequences of climate change	4.2.4.4 (p.115)
32.	The medium- and long-term reduction objectives set voluntarily for the reduction of greenhouse gas emissions and the means implemented to this end	4.2.4.4 (p.115)
e)	**Biodiversity protection**	
34.	Measures taken to preserve or enhance biodiversity	4.2.4.5 (p.119)
6°	**SOCIETAL INFORMATION**	
a)	**Societal commitments to support sustainable development**	
35.	Impact of the Company's business on employment and local development	4.2.3.3 / 4.2.3.4 (p.98 / 99)
36.	Impact of the Company's activity on neighbors or local populations	4.2.3.3 / 4.2.3.4 (p.98 / 99)
	Relations maintained with the Company's stakeholders and dialog with them	4.2.3 (p.97)
38.	Partnership or sponsorship actions	4.2.3.4 (p.99)
c)	**Subcontracting and suppliers**	
39.	Consideration of social and environmental issues in the purchasing policy	4.2.3.3 (p.98)
40.	Consideration of relations with suppliers' and subcontractors' and their CSR responsibility	4.2.3.3 (p.98)
d)	**Fair practices**	
42.	Measures for consumer health and safety	4.2.3.2 (p.97)
7°	**ANTI-CORRUPTION INFORMATION**	
	Actions to prevent corruption	4.2.3.3 / 4.2.1 (p.98 / 79)
8°	**INFORMATION ON ACTIONS THAT SUPPORT HUMAN RIGHTS**	
	Promotion of and respect for the fundamental conventions of the International Labour Organization	
16.	• respect for freedom of association and the right to collective bargaining	4.1.2 (p.75)
17.	• elimination of discrimination in respect of employment and occupation	4.1.2 (p.75)
18.	• elimination of forced or compulsory labor	4.1.2 (p.75)
19.	• effective abolition of child labor	4.1.2 (p.75)

9	ADDITIONAL INFORMATION	
	The consequences of the Company's activity on climate change and the use of goods and services that it produces	4.2.4.4 (p.115)
	Societal commitments to support sustainable development	4.2.3.3 / 4.2.3.4 (p.98 / 99)
	Societal commitments to support the circular economy	4.2.4.2 / 4.2.4.3 (p.103 / 111)
	Societal commitments to combat food waste	See below
	Societal commitments to combat food insecurity	See below
	Societal commitments to support respect of animal welfare	See below
	Societal commitments to support responsible, equitable, and sustainable food	See below
	Collective agreements reached within the Company and their impact on the Company's economic performance as well as on employees' working conditions	4.2.2.3 (p.91)
	Actions to combat discrimination and promote diversity	4.1.3 / 4.2.2.6 (p.77 / 96)

In light of the Group's activities, the Company considers that it is not relevant to report on its commitments regarding combating food waste, combating food insecurity, promoting respect of animal welfare, and responsible, equitable, and sustainable food.

Appendix 4 – Summary of workforce-related and environmental indicators

Social indicators

	2013	2014	2015	2016	2017	2018
Workforce	24,053	23,709	20,964	18,325	20,093	☑ 19,164
Turnover *(%)*	9	12	17	9	13	14

	2013	2014	2015	2016	2017	2018
Safety						
LTIR[(a)]	2.26	1.32	1.24	1.41	1.24	☑ 1.0
TRIR[(b)]	5.51	4.23	3.25	2.61	3.13	☑ 2.95
Severity rate	0.12	0.06	0.07	0.06	0.045	0.050
Training						
Number of employees having participated in a training session	14,912	14,537	145,779	13,779	13,615	13,990
Number of training hours	582,000	513,597	473,009	506,459	282,542	303,588

(a) LTIR (lost time injury rate): number of accidents with lost time per million hours worked.

(b) TRIR (total recordable injury rate): number of accidents declared per million hours worked.

% of women (permanent employees)

	Production staff		Technical and supervisory staff		Managers		Total	
	2017	2018	2017	2018	2017	2018	2017	2018
Europe	2%	2%	33%	33%	23%	22%	12%	12%
Brazil	5%	5%	26%	29%	24%	25%	10%	10%
NAFTA	1%	2%	26%	27%	23%	22%	10%	10%
Asia	13%	12%	28%	28%	17%	16%	16%	16%
Middle East	-	-	15%	15%	11%	17%	6%	8%
Africa	9%	8%	14%	13%	-	-	11%	11%
WORLD	**5%**		**29%**		**22%**		**12%**	

Breakdown between permanent and non-permanent contract staff

	Permanent		Fixed-term contract (including apprentices)		Temporary	
	2017	2018	2017	2018	2017	2018
Europe	7,038	6,327	521	553	450	226
Brazil	6,677	6,572	107	180	102	323
Asia	2,696	2,560	216	351	114	159
NAFTA	2,406	2,386	0	0	40	188
Middle East	362	254	12	15	13	0
Africa	56	53	2	3	5	25

Environmental indicators*

Indicators	Units	2013	2014	2015	2016	2017	2018
Production	**Metric tons "processed"**	**5,456,271**	**5,508,079**	**2,826,499**	**3,068,607**	**4,524,518**	**5,523,792**
	Metric tons shipped	2,159,000	2,322,800	1,410,865	1,281,500	2,256,100	2,364,000
Water intake	**m^3/year**	**8,786,030**	**7,831,288**	**5,630,516**	**5,672,035**	**6,179,371**	**☑ 7,480,278**
	m^3/metric ton "processed"	1.61	1.42	1.99	1.85	1.37	1.35
	m^3/metric ton shipped	4.07	3.37	3.99	4.43	2.74	3.17
Water discharged	**m^3/year**	**5,494,232**	**4,087,062**	**3,616,090**	**3,179,631**	**3,203,321**	**3,221,422**
	m^3/metric ton "processed"	1.01	0.74	1.28	1.04	0.71	0.59
	m^3/metric ton shipped	2.54	1.76	2.56	2.48	1.42	1.37
	Total metals released g/m^3	0.81	1.29	1.23	0.94	0.60 (1,261 kg)	0.10 (457 kg)
Waste							
Non-hazardous waste	Metric tons/year	572,669	628,005	438,266	430,980	673,111	☑ 706,711
Hazardous waste	Metric tons/year	53,737	40,909	28,549	27,670	24,763	☑ 24,777
% recovered waste	%	93	93	94.8	94.38	94.0	☑ 95.5
Total waste	Metric tons/year	626,406	668,914	466,815	458,650	697,887	731,488
	kg/metric ton "treated"	115	121	165	149	154	132
	kg/metric ton shipped	290	288	331	358	309	309
Energy							
Natural gas	GWh/year	3,708	3,751	2,498	2,531	2,939	☑ 3,680
	kWh/metric ton "processed"	680	681	884	825	649	666
	kWh/metric ton shipped	1,717	1,615	1,771	1,975	1,302	1,492
Electricity	GWh/year	1,812	1,873	1,205	1,376	1,590	☑ 1881
	kWh/metric ton "processed"	332	340	426	448	351	341
	kWh/metric ton shipped	839	806	854	1,074	705	796
CO_2 (a)							
Total direct emissions (scope 1)(a)	Metric tons/year	1,127,592	1,273,427	(373,538)	(468,853)	(77,744)	☑ 421,397
	kg CO_2 equivalent/metric ton "processed"	207	231	(132)	(153)	(17)	76
	kg CO_2 equivalent/metric ton shipped	522	548	(265)	(366)	(35)	178

* *Data on the Group's total consolidation scope except for water, which excludes the mining figures.*

(a) *Energies = electricity, natural gas, gasoline, gas oil, propane.*

Analysis of GHG emissions 2018

Scope	Businesses	Mine	Forest
Scope 1 **Non-biogenic direct CO_2 emissions**	Natural gas combustion		
	Fuels for internal transportation	17,484	17,745
	Production of iron and steel		
	Total – scope 1 non-biogenic	**17,484**	17,745
Scope 1 **Biogenic direct CO_2 emissions**	Carbonization of charcoal		1,070,984
	Atmospheric and underground sequestration		(3,132,193)
	Combustion of charcoal		
	Total – CO_2 scope 1 biogenic		(2,061,209)
Scope 1 **Biogenic direct CH_4 emissions**	Carbonization of charcoal		394,906
Scope 1 **Non-biogenic and biogenic direct emissions**	**Total – scope 1**	**17,484**	**(1,648,558)**
Scope 2 **"Supplier base" indirect emissions**	Electricity purchased Total – scope 2	45	2
Scope 3 **Other emissions, indirect(a)**	Upstream and downstream external transport ordered by the Company		
	Waste treatment		
	Employee transportation and travel		
	Purchases of materials, goods and services		
	Emissions related to the carbon content of industrial equipment proportionate to amortization and depreciation		
	Emissions linked to losses during extraction, storage and transportation of energies(b)		
	Total – scope 3		
TOTAL ACROSS ALL COMPONENTS		**17,529**	**(1,648,556)**

(a) The items appearing under this entry are those for which the Company has an action or direct influence, and for which data is available. To date, emissions pertaining to client processes are neither known nor taken into account. In an effort to improve knowledge of scope 3 in light of its importance, the Group will again examine the content of these items in 2019, with the assistance of a specialized consultant, and will likewise evaluate, if possible, upstream and downstream emissions connected to its customers and suppliers' activity.

(b) Energies = electricity, natural gas, gasoline, gas oil, propane.

Summary of emissions in metric tons of CO_2 equivalent

Production of iron and steel	Rolling and heat treatments of tubes	Finishings & Services	Sub-total (metric tons CO_2e)	% sub-subtotal	% subtotal	% total
78,225	456,259	145,148	679,631	73	42	9
2,252	1,257	10,051	48,789	5		
198,720			198,720	21		
279,197	**457,516**	**155,199**	**927,141**	**100**		
			1,070,984	20	41	
			(3,132,193)	58		
1,160,559			1,160,559	22		
1,160,559			**(900,650)**	100		
			394,906	100	18	
1,439,755	**457,516**	**155,199**	☑ **421,397**	**100**	**100**	
166,673	167,857	101,697	☑ 436,274	100	100	9
-	-		215,077	6		82
-	-		123,990	3		
-	-		46,784	1		
-	-		☑ 3,122,761	81		
-	-		150,447	4		
-	-		☑ 185,464	5		
-	-		**3,844,523**	100		
1,606,164	**625,373**	256,896	**4,702,194**	**100% = 851 PER METRIC TON "PROCESSED"**		

Risks and risk management

Chapter 5

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5.1 Risk factors

The Group operates in a rapidly changing environment that generates numerous risks, some of which are outside its control.

The Group has evaluated the importance of the specific risks to which it considers itself to be exposed due to the probability of their occurrence and the estimated size of their negative impact. These risks are presented below and are organized by categories according to their type. In each category, the most important risk factors according to the aforementioned evaluation are indicated first.

Investors should note that other risks may exist or could arise that the Group is not currently aware of or has not considered at the date of this Registration Document, which could have a material adverse impact on the Group, its activities, its financial position, results or outlook.

5.1.1 Risks related to the Group's strategy and activities

Risks related to the Group's dependence on customers in the oil sector

The Group's activity is dependent on the level of expenses incurred by Oil & Gas companies for exploration, production and development of oil and natural gas reserves. In 2018, 63% of the Group's consolidated revenue was earned in the Oil & Gas sector, excluding Petrochemicals.

Since 2015, spending by Oil & Gas companies has been significantly impacted by the sharp drop in world oil prices, which began in late 2014 due to the overproduction of oil in relation to demand, in particular coming from the United States (shale oil) and due to the consistent production levels of the OPEC countries. This considerable drop in world oil prices led Oil & Gas companies to intensify cost control, significantly reducing their expenses and optimizing their inventory levels, which had a material impact on the demand for tubes and put pressure on tube prices. In 2017, OPEC agreements, which were staggered throughout the year to limit their oil production, allowed world prices to stabilize. Compliance with these agreements has allowed for synchronized growth in the majority of countries in the world, and continued recovery in oil prices, which reached their high in October 2018. Starting in November 2018, the combined increase of production, crude stocks, as well as commercial reserves, particularly American reserves, led to a drop in oil prices.

Since 2014, changes in the spot price per barrel of Brent were as follows: from an average of USD 99 in 2014, with a peak price of USD 115 in June 2014, the average price dropped to USD 52 in 2015, then to USD 44 in 2016, rising again to USD 66.70 as at 31 December 2017. Throughout 2018, oil prices gradually rose (reaching their peak in October 2018 at USD 86.07) then starting to drop as from November 2018, and ending at a price of USD 50.57 as at 31 December 2018. In 2018, the average number of international rigs (excluding North America) only rose 4%, with an average of 988 units in 2018, compared to an average of 948 units in 2017. This was notably in regions where national companies that are less sensitive to the price per barrel operate (such as the Middle East).

In the United States, conversely, the correlation between price per barrel and number of rigs is much more sensitive. West Texas Intermediate (WTI) went from an average price of USD 51 in fiscal year 2017 to USD 65 in 2018. This rebound in the price of oil, combined with the drop in the break-even point of American operators led to a +18% increase in the average number of rigs between 2017 and 2018 (an average of 1,032 units in 2018, compared with an average of 875 units in 2017). These favorable conditions allowed Vallourec to significantly increase its sales in the United States and to consider raising its sale prices, which it began to do in July 2017.

According to the Group's internal estimates, the share of tube consumption in a complex and integrated offshore project is less than 2% of the total project cost, although this proportion varies according to the complexities and types of drilling. This share may reach up to 9% of the total cost of the project for unconventional onshore drilling in the United States. The level of Exploration and Production investments thus had a direct impact on the consumption of tubes and on the Group's results.

The recovery in oil prices and an alignment between supply and demand for oil in 2018 led to an increase of approximately 11% in oil company expenses compared to the 2017 fiscal year. According to IHS [(1)] and Barclays [(2)] estimates, investment expenses in exploration and production for Oil & Gas recorded growth of between 8 and 11% between 2017 and 2018, which was primarily driven by investment expenses in North America. This market trend had a positive impact on Group volumes, revenue and the operating income. Since 1 February 2016, the Group has deployed a Transformation Plan to improve its short- and long-term competitiveness (see Section 3.6 of this Registration Document.) This Plan, which includes plans to reduce investments, operating costs and capacity, has in particular allowed the Group to transform its operational structure and balance its production capacities around four regions. The Group cannot, however, be certain that these measures will be sufficient to limit the impact of the market environment, which is still difficult, as concerns its operating revenue and financial position (see "Risks related to the industrial restructuring plan" below). Moreover, if oil prices were to start falling again, this could have a significant adverse effect on the Group's activity, financial position, operating income, and outlook.

Likewise, the investments of Oil & Gas companies could be subject to other negative factors such as changes in applicable laws and regulations, changes in the political situation or weather conditions. These factors could consequently have a negative impact on the Group's activity, results and outlook.

(1) IHS Markit – Global Upstream Spending, December 2018.

(2) Global 2018 E&P Spending Outlook, January 2019.

Risks related to the cyclical nature of the tube market

The tube market is traditionally subject to cyclical trends which result both from economic changes as described above in the Oil & Gas sector, and from macroeconomic conditions which have an impact on the other business sectors of the Group, including mechanicals, automotive, construction and power generation which, together, accounted for 28% of consolidated revenue in 2018. These sectors have important business cycles which follow the trends in the economic climate and which are likewise influenced by other factors, such as the growth outlook.

Deterioration in the global economic climate and the financial markets could have a significant adverse effect on the Group's revenue, income, cash flow and outlook.

In order to prevent such risks from occurring, or to limit their impact, the Group implements the following measures:

- diversity of applications for its products in the energy (hydrocarbon, nuclear and wind), petrochemical, mechanicals, automotive, and construction sectors;
- geographical diversity of its markets worldwide;
- promotion of long-term partnerships with major customers; and
- flexibility, i.e.:
  - the production substitution capability developed among some of the Group's 50 production sites in more than 20 countries,
  - seeking to reduce fixed costs at each of its sites, and
  - the capacity to broadly adjust variable costs as the activity evolves.

Risks related to the industrial restructuring plan

Since 1 February 2016, the Group has deployed a Transformation Plan (see Section 3.6 "Transformation Plan" of this Registration Document), in particular through an industrial restructuring project that aims to:

- streamline industrial production, in particular by reducing European capacities by 50% and focusing activities on value-added solutions and products;
- optimize its industrial footprint by developing new, more competitive production centers, in particular in Brazil and China; and
- significantly reduce costs in the context of the industrial plan.

Although the Group is rolling out the strategic initiatives linked to the industrial restructuring plan in accordance with the schedule, and is making every effort to attain the objectives announced within this plan, the Group could encounter many difficulties, as follows:

- the Group's customers could turn to other suppliers if they feel their products and services, product lead time or quality no longer meet their expectations following the transfer of production to Brazil or China;
- the Group cannot guarantee that implementing the industrial restructuring will be sufficient, given the particularly poor economic climate, nor that it will achieve the results it anticipates within the expected time frames. If the Group was unable to effectively implement the industrial reorganization or if it did not produce the expected results, this could have a significant adverse effect on its results, financial position and outlook.

Risks related to dependence on particular customers

In 2018, the Group earned 25% of its consolidated revenue from its five largest customers and 37% of its consolidated revenue from its ten largest customers (see Section 3.2.2.2 "Principal Customers" of this Registration Document). No customer accounted for more than 10% of the Group's consolidated revenue in 2018. Historically, customer loyalty has been strong (no sudden switches to another supplier) thanks to good relations with the Group and the quality of its products.

Nevertheless, most customers are not generally required to purchase a fixed amount of products or services over a given period and could decide to terminate their contracts, not renew them, or renew them on terms, particularly with respect to pricing, that are less favorable for the Group. This could have a significant adverse effect on the Group's business, financial position and results.

Generally, the Group has only very rarely been exposed to a significant risk on outstanding receivables of its main customers. The Group has nevertheless established specific credit committees to systematically evaluate the financial risks assumed with its customers. However, in a deteriorating world economic environment, the risk that a worsening of its customers' financial position will expose the Group to the risk of payment default cannot be ruled out.

Risks related to competition

The Group operates in a highly competitive international environment. To respond sufficiently to this competitive pressure, Vallourec's strategy is to stand out from its competitors by specializing in premium solutions for the energy markets. Meeting the complex needs of demanding customers in sophisticated markets requires a level of local know-how, innovation, quality, and related services that few manufacturers are in a position to provide.

The Group nonetheless faces competition with varying degrees of intensity in the Group's different sectors:

- in the Oil & Gas sector, the Group's main differentiating element is premium connections, for OCTG tubes in particular. These patented connections ensure perfect sealing for tube columns, thereby meeting customers' safety, environmental and performance requirements. However, strong competition in the OCTG commodity tubes market brings downward pressure to bear on prices throughout the market, including the prices of premium connections and tubes and in particular those that are the least differentiated. Oil companies, particularly International Oil Companies (IOCs), are seeking to develop a strategy of qualifying low-cost suppliers, particularly Chinese suppliers, for increasingly high-end products, as low-cost players have progressed technically and developed premium connections for the least differentiated categories. This has also had the effect of increasing pressure on the prices of established operators, who have significantly reduced their prices in an effort to be able to win tenders. This new competition has particularly impacted the Europe/Africa (EA) and Middle East/Asia (MEA) Regions. The intensification of the competitive landscape in an increasingly globalized seamless tube market could cause losses in market share, and impact the Group's volumes, revenue and profitability;
- in the Group's other sectors of activity:
  - in the power generation sector, premium solutions contain high-alloy steel capable of withstanding extreme temperatures and pressure, requiring top-level metallurgical skills and state-of-the-

art technology. The Group has noted increased competition since 2009, in particular in the Chinese market, due to the decision of some customers to give preference to local manufacturers who have entered the market for higher grade products, potentially at the expense of the stringency of the customers' technical requirements,

- in the petrochemical, mechanicals, automotive and construction sectors, the Group faces stronger competition as customer requirements are less sophisticated. The Group nevertheless has strong positions in Europe and Brazil, thanks to local operations that enable it to offer short lead times and related services. It works to innovate so as to create new, differentiated product ranges, such as fine-grain steel for industrial cranes and PREON® solutions for the construction of industrial buildings.

In order to prevent such risks from occurring, or to limit their impact, the Group implements the following measures:

- a premium-positioning strategy, underpinned by growth, innovation, close relations with customers and competitiveness;
- a major focus on innovation and the development of tubular solutions generating long-term partnerships with highly demanding customers;
- defense of the Group's industrial expertise through patents and protection of trade secrets; and
- a reduction in its cost base to protect its margin in a competitive environment leading to pressure on prices.

Risks related to maintaining advanced technology on key products

The tubes market is subject to technological change. It is not possible at this point in time to foresee how such change could affect the Group's activities in the future.

Third party technological innovations could affect the competitiveness of the Group's existing products and services and have a negative impact on the value of existing patents and the revenue generated by the Group's licenses. The Group's financial results and outlook could be affected and the Group might find itself at a competitive disadvantage if it were unable to develop or access (either alone or through partnerships) new technology, products or services ahead of its competitors, or if its new technology, products or services were not to have the success counted on in the market.

Furthermore, the risk that competitors may access some of the Group's manufacturing secrets or certain innovations that are not yet patented or that are not eligible to be patented cannot be entirely ruled out. The procedures established by the Group's Security Department and IT Department, as well as the signing of confidentiality agreements, can limit this risk, although it cannot be completely eliminated. The Group's results and outlook could therefore be affected.

In order to prevent such risks from occurring, or to limit their impact, the Group in particular implements the following measures:

- a major program of investment in new production tools and in innovation, leading to the opening since 2011 of new production centers, R&D units and test stations close to the Group's markets, especially in the United States and Brazil;
- the proliferation of front end innovation type multi-business procedures, often directly involving the Group's customers. These aim to identify customer needs as accurately as possible and to generate new concepts for solutions that create a difference in value, adapted for customers;
- a strengthened digital strategy, designed to further enrich the Group's offer, its processes, and methods of cooperation. This is notably demonstrated by the launch of Vallourec.smart in late 2018 for its innovative digital service offers;
- the launch of partnerships and the management of initiatives such as the Open Innovation Challenge, aiming at fostering collaborations between key digital players, including "nimble" SMEs, and allowing the Group to increase competence in areas as varied as Data Science, predictive models, artificial intelligence, augmented reality or even additive manufacturing;
- monitoring technological developments in the market to systematically gain access to the most recent techniques and their commercialization;
- protecting inventions through patents in key countries as well as maintaining and defending these patents; and
- protecting expertise, including trade secrets, through systematic confidentiality agreements and dedicated procedures.

5.1.2 Operational risks

Risks related to an industry that consumes raw materials and energy

Tube production consumes raw materials such as iron ore, coal, coke and scrap. The Group has some in-house sources of supply and diversifies its external sources of supply whenever possible.

More generally, raw materials and energy represent a significant expense for the Group.

An increase in the price of raw materials and energy leads to a corresponding increase in the production cost of the Group's finished products. Uncertainty surrounding economic trends along with a highly competitive environment in the international market for tubes means that the Group's ability to effect any increases in raw materials and energy prices in its orders is uncertain. This could reduce Group margins and have a negative impact on earnings.

These risks carry a probability and impact that Vallourec aims to reduce through the following measures:

- owning some of its own sources of supply (iron ore mine, eucalyptus plantation in Brazil) and maintaining a variety of external sources of supply wherever possible;
- continuously reducing consumption, particularly by computer-modeling of furnaces and making processes more reliable; and
- effecting any changes in supply prices on the Group's revenue through the adjustment of its selling prices.

Risks related to defective or faulty production

The Group's positioning in the market for premium tubular solutions requires the implementation of a demanding quality control program for its products and services. However, the Group cannot totally eliminate the risk that some of its products or services may have production or manufacturing defects, or faults which could potentially cause damage to property, personnel or installations attached to the tubes, lead to an interruption of business for customers or third parties, or cause environmental damage. Although the Group follows quality control procedures for its products and services that meet the most rigorous benchmark requirements in order to provide products and services without production defects or faults, defects or faults could occur in Group products or services. This could potentially require damages to be paid by the Group, cause a fall in demand for these products and services, or damage their reputation for safety and quality, resulting in a significant impact on the financial position, earnings and image of the Company's and the Group's businesses.

These risks carry a probability and impact that Vallourec aims to reduce through the following measures:

- implementing a product quality control process that takes into account the requirements of the strictest standards such as ISO 9001, ISO/TS, API, EN 10210 and ABNT in Brazil;
- obtaining qualification from the most demanding customers, especially on oil, nuclear, and automotive markets;
- a continuous improvement approach, managed by Vallourec Management System (VMS), in particular aims to bolster the capability of all industrial processes;
- a focus on the major quality risks that could unfavorably impact customers;
- strengthened management of customer claims to reduce the risks of defects reappearing as much as possible; and
- contractually limiting its liability, to the extent possible.

Industrial and environmental risks

DESCRIPTION OF THE INDUSTRIAL AND ENVIRONMENTAL RISKS

In the various countries in which the Group operates, particularly in Europe, the United States, Brazil and China, its production activities are subject to numerous environmental regulations that are extensive and constantly changing. These regulations concern, in particular, management of major accidents, the use of chemicals (REACH regulations in Europe and their equivalent outside of Europe), disposal of wastewater, disposal of special industrial waste, and noise pollution. They serve to ensure that the Group manages the various environmental risks to which it is exposed, including air, water and soil pollution, the risks of natural disasters due to climate change, and the risk of impacting biodiversity. The Group's activities could, in the future, be subject to even more stringent regulations requiring it to incur expenditure in order to comply with regulations or pay new taxes.

All French plants require authorization to operate in accordance with the provisions of Law No. 76-663 dated 19 July 1976 (as amended), relating to facilities classified for environmental protection and with Decree No. 77-1133 dated 21 September 1977 codified in Article R. 512-1 of the French Environmental Code. Any major changes at these sites (investments, extensions, reorganization, etc.) require the updating of said authorizations in collaboration with the local Regional Departments for the Environment, Land-use Planning and Housing (*Directions régionales de l'environnement, de l'aménagement et du logement* - DREAL). Vallourec's facilities in other countries are subject to similar local regulation, requiring specific permits in various areas relating to the environment, including water, air, waste and noise. All of the Group's foreign facilities have the prescribed permits, which are regularly renewed pursuant to local regulations and local usage.

The Group endeavors to strictly comply with these authorizations and, more generally, with the laws and regulations applicable in France and abroad on environmental matters, according to the principles presented in its Sustainable Development Charter and in the Group's Environmental Policy, which the Management Board approved in 2011 and 2014. The Group is also striving to take all precautions that would allow it to prevent environmental incidents; it should be noted that almost all of the sites are ISO 14001 certified, with production of certified sites corresponding to 99.8% of the total production, including the Tianda site in China and the Jeceaba site in Brazil, which was certified in 2018.

It is clear that the very nature of the Group's industrial activity carries environmental risks. The Group could consequently be faced with an environmental accident that could have a material impact on the continuing operation of the sites concerned, and on its financial position.

In addition, the regulatory authorities and courts may require the Group to carry out investigations and clean-up operations, or even restrict its activities or close its facilities temporarily or permanently, and/or require it to pay fines. Given the long industrial history of several of the Group's sites (whether currently in use or obsolete), the soil or ground water may have been polluted and pollution may be discovered or occur in the future. Vallourec could be required to decontaminate the sites concerned. As regards its former activities, the Group could be held responsible in the event of damage to persons or property, which could adversely affect Vallourec's results. To that end, and applying the regulations, the estimated cost for clean-up of the French sites concerned in the event of cessation of their activities was reduced from €3 million to €1.5 million due to a reduction of the industrial scope and a more detailed analysis of the areas concerned. Moreover, the Group's commitment to the Regional Departments for the Environment, Land-use Planning and Housing to provide any necessary amounts, which was covered by a bank guarantee, will be simplified.

The accounting data relating to environmental matters is recorded in the Group's consolidated balance sheet under "Provisions" (see Section 6.1.7 C, Note 17 to the consolidated financial statements). Future expenses for rehabilitation of sites are recognized by the Group using the accounting principles described in Section 6.1.7, paragraph 2.12 in the Notes to the consolidated financial statements.

ASSESSMENT OF INDUSTRIAL AND ENVIRONMENTAL RISKS

Operating entities assess the industrial and environmental risks of their activities before developing them, and then regularly during operations. They comply with the regulatory requirements of the countries in which the activities are carried out and have developed specific risk assessment procedures. The sites are regularly audited for the environmental risks they face, specifying for each risk the probability of occurrence and potential scale. This assessment is based on a regional or central approach, depending on the importance of the site.

At sites with significant technological risks, risk analyses are performed when new activities are developed, and are updated when significant changes are made to existing installations. They are then periodically updated using a methodology adapted to local regulatory obligations. Each site prepares its own emergency or internal prevention measures depending on the risk analysis relating to the establishment. In France, the level of risk is reduced since only the Valinox establishment in Montbard is covered by "Seveso 3" with a "lower tier" classification.

Similar measures are taken at the Group's other industrial sites.

In addition, environmental impact studies are carried out before any industrial development including, in particular, an analysis of the initial state of the site, taking account of its vulnerabilities and the choice of measures to reduce or prevent incidents. These studies also take into account the impact of the site's activities on the health of neighboring populations. They are performed using common methodologies. In countries that implement authorization procedures and monitor project progress, no project is launched until the appropriate authorities approve it based on the studies submitted to them.

All Vallourec entities monitor regulatory changes in order to ensure that they comply at all times with local and international regulations and standards relating to assessment and management of industrial and environmental risks.

Lastly, in 2014 the Group completed, with the assistance of a specialized firm, an analysis of the risks inherent to climate change (droughts, floods, heatwaves or cold snaps, submergence of land, high winds, etc.). This study relied on available scientific information and existing national adaptation plans. For each of the Group's major industrial basins, it identified risks and estimated their probability of occurrence and severity. It is now the responsibility of each site to establish the measures to be taken with regards to personnel and equipment, in order to reasonably prepare for the identified risks. These measures should be added to the sites' environmental roadmaps. These risks have appeared in certain risk mapping at the regional level (North America) or for each entity (Valinox) and are consequently evaluated site by site under the loss prevention policy carried out with our insurer's experts. This policy may result in technical recommendations that are more stringent than the national technical standards, more frequently updated, and based on the recognized expertise of R&D and engineering centers. For example, as concerns flood risk, the recommendation is to consider a 500-year risk. It is noted that institutions that follow these recommendations are hardly impacted by the occurrence of catastrophic events.

In the same way, American factories have established a prevention plan which lists the measures to take starting D-5, through the day a hurricane strikes, for both the property and people concerned.

The Group's carbon policy, which was published in 2018, also stresses the importance of ensuring the resiliency of industrial plants to various climate risks. For example, upon more extensive consideration of climate change-related risks, the Brazilian authorities determined that the exceptional rain risk for a 100-year period should be substantially increased in relation to the dikes protecting the dam intended to collect water and some sediment resulting from the Group's operation of the mine. Consequently, the dikes in question are being raised.

The supply chain is also subject to climate risks. It is thus the responsibility of the Purchasing Department, in conjunction with the most affected suppliers, to examine the measures to be adopted under the supplier risk assessment plan.

The above-mentioned study will be updated in 2019 due to academic progress that has been made on the subject in terms of geographical precision, and based on the Group's new industrial footprint. Lastly, analytical matrices will be prepared to help each of the sites more precisely determine their potential impacts from the risks in question, and the measures to take at both the technical and behavioral levels.

MANAGEMENT AND TRACKING OF INDUSTRIAL AND ENVIRONMENTAL RISKS

Risk assessment results in the establishment of risk management measures designed to reduce the likelihood of accidents occurring and limit their consequences and environmental impact. These measures relate to the design of the facilities, strengthening of protective measures, organizational structures to be put in place, and even compensation for any environmental impact if it seems inevitable. These studies may be accompanied, on a case-by-case basis, by an assessment of the cost of the measures to control risk and reduce impact.

Vallourec seeks to minimize the industrial and environmental risk inherent in its activities by setting up efficient organizational structures and quality, safety and environmental management systems, obtaining certification or assessing its management systems, performing stringent inspections and audits, training staff and heightening the awareness of all parties involved, as well as by implementing a policy of environmentally friendly investments that reduce industrial risks. Each significant investment project is assessed according to a precise methodology. This process is formalized with the use of a mandatory model document, which explains the various kinds of impact (eco-design sheet) in accordance with the risks listed above. The Capex Committee, which examines the characteristics of the most important projects on a monthly basis in view of approving them stage by stage, systematically analyzes these kinds of projects and may postpone their approval if deficiencies are detected.

Risks related to occupational safety and health

The importance of the industrial labor force to the Group's business makes the management of employees' health and safety particularly vital. Health and safety management is a priority and a fundamental value for Vallourec. Despite the efforts used by the Group, Vallourec cannot rule out the fact that workplace accidents and illnesses may arise that could render it liable in the event of serious illnesses or accidents.

Determined to act on all safety levers, in 2018 Vallourec continued its CAPTEN+ Safe safety improvement program in application of its Health and Safety policy, which was reviewed in 2016. At the end of 2018, the Lost Time Injury Rate (LTIR) was 1.02, an improvement compared to 2017 (1.24), and the reported accident rate reached 2.97, having improved since 2017 (3.13), although still higher than the 2016 rate. Vallourec did not report any fatal accidents in 2018, for the fourth consecutive year.

The safety improvement program involves rolling out the following main measures at all Group sites:

- establishing safety management committees at all levels of the Company;
- safety visits conducted by supervisory staff at all organizational levels;
- employee involvement in reporting all incidents, hazardous conditions or actions, even the most minor;
- ongoing risk assessment for safety concerns and preventive actions;
- establishing continuous improvement teams (CITs) on safety issues; and
- the roll out of a specific action plan to prevent fatal accidents.

As regards health, the Group decided to structure the governance of actions taken to preserve the health of its employees and stakeholders by entrusting this engagement to the Sustainable Development Department. In a group like Vallourec, health issues entail numerous aspects, such as the exposure to hazardous products or environments, exposure to noise, or the risks from using insufficiently ergonomic positions. These issues also concern medical monitoring, corporate healthcare coverage, and psychosocial risks. Lastly, even though steel is not a harmful product, an analysis of our customers' work conditions merits examination.

In France, some of the Group's subsidiaries are involved in civil proceedings relating to the use of asbestos. These proceedings (of which there are incidentally very few), have been brought by certain employees or former employees who believed they had contracted an occupational illness linked to asbestos, with the aim of obtaining a judgment that would give them supplementary social security benefits. Although the outcome of all the current asbestos-related cases cannot be predicted with reasonable certainty, the Group does not expect them to have a material adverse effect on its financial position and the image of the Company and the Group. However, the Group cannot be sure that the number of existing cases linked to asbestos or new cases will not have material adverse effects on its financial position. Despite all the attention that the Group pays to the health and safety of its employees, the occurrence of accidents or an increase in occupational illnesses remains a risk.

Risks related to Group equipment failures

The Group's success in meeting orders depends on a high level of asset reliability. The Group could nevertheless suffer breakdowns of equipment or unavailability for other reasons such as damage, fire, explosion or a computer virus. Such failures could cause delays in the delivery of orders in progress or subsequent orders for which these assets were to be used. Although the Group follows a regular maintenance program in order to keep all of its assets in good working order, it cannot exclude the possibility that breakdowns could occur. Equipment failures may lead to dissatisfaction on the part of the Group's customers, have an impact on the cost of orders and, therefore, significantly affect the financial position, results and image of the Company or the Group.

These risks carry a probability and impact that Vallourec aims to reduce through the following measures:

- a regular maintenance program to maintain all assets in good working order;
- the performance of regular external audits to prevent damage, including from equipment breakdowns, fires, explosions and natural disasters (see above concerning the particular case of climate risks);
- a business continuity plan (BCP) at the Group's main sites to reduce the impact of equipment failure on customers and costs, by preparing rapid solutions to restore operations and/or alternative production processes.

Risks related to information systems

The Group uses complex information systems (in particular to manage its sales, logistics, accounting and reporting), which are essential for conducting its commercial and industrial activity. Despite a policy to strengthen the emergency programs of its information systems, of its infrastructure (including providing access to service providers and partners), as well as its clients, a failure of one of them could have a material adverse impact on the activity, financial position, results or outlook of the Group.

The launch of an ambitious strategy to digitize its production tools and the creation of new services for customers could increase the risk of theft or loss of information, including personal information.

Despite a certain number of proactive measures that have already been deployed, and others that will be in 2019, the Group could fall victim to complex and targeted attacks of its IT networks. A growing number of companies have indeed recently been the victims of intrusions or attempted intrusions in their information systems. The techniques implemented to hack, disrupt, degrade the quality of or sabotage information systems are constantly evolving; they are sometimes not listed and it is often impossible to identify them before an attack is launched. Despite all of the precautions taken and its multiple means of defense, the Group might not be able to protect itself against such hacking techniques, or to rapidly establish an appropriate and effective response system. Any breakdown or interruption in the Group's IT systems that is linked to such intrusions or to other factors, could have a material adverse effect on the activity, financial position, results or outlook of the Group.

The Group cannot guarantee that it will not suffer an uninsured loss.

As concerns Vallourec's information system, the multi-year audit plan for the information system security of the Group was renewed for the 2014-2018 period, and its scope was expanded to new regions, such as the Middle East, United States and Asia Pacific.

Since 2014, the Information Systems Department has undertaken and developed a program aiming at strengthening its capacity to detect intrusion attempts, by establishing network monitoring mechanisms for the majority of the sites in its Regions.

In 2016, this system was strengthened in an effort to adapt to new threats and was geographically extended in Europe and the Middle East, in order to better cover the new production units. A plan concerning the improvement of security for industrial equipment, primarily that of the lower IT levels of the plants, which are close to production workshops, progressed in Europe and the Middle East.

The deployment of the hard disk encryption solution for computers, considerably improving data protection in case of loss or theft of laptops and cell phones has been continued.

A strengthened detection and analysis system for messaging was established during 2018, in addition to the classic measures, to combat an increase in attempts to steal the identities of our users, suppliers, and partners.

The organization of meetings to monitor information security indicators with all the Regions allowed all players to be involved in the challenges of managing risk, and enabled the risk mapping to be unified and updated.

This action helped to better define our need to strengthen our "cyber" insurance policy in 2019.

Actions to educate employees on protecting information and support for major projects related to risk management and internal control included:

- performance and follow-up of the action plan for an internal control campaign for all the Group's Regions;
- the updating and application of a Group IT Charter with the aim of strengthening users' best practices and hygiene measures, by integrating a section on cloud uses (platform and services that are not hosted by Vallourec);
- the continuation of the program on compliance with the framework of the new European General Data Protection Regulation (GDPR), subject to the protection of the Legal Department;
- a mandatory training program for all employees in information protection, as well as a training program and tests on phishing threats (identify theft);
- updating of the guidelines for IT security rules and procedures, which are published under the Group guidelines available on the intranet;
- adoption of standards and best practices in cybersecurity thanks to the identification of a security partner ecosystem;
- from an organizational viewpoint, the establishment of a full-time equivalent position in the United States starting in November 2018;
- in the Middle East, the remaining region requiring an effort, the start-up in 2018 of an ambitious security program to be continued for 2019; and
- a program to protect our digital services, with the safeguarding of two data lakes with partners (technical and organizational audits).

Risks related to the Group's activities in emerging countries

The Group conducts a significant part of its business in emerging countries, in particular because its strategy of being located close to its customers in these countries enables it to improve its responsiveness and to develop appropriate products and services in these countries. The risks associated with doing business in emerging countries may include political, economic and social instability (which can result in nationalization and expropriation of assets, uncertainty as to applicable law and inconsistent application of laws, and the impact of international sanctions, etc.), as well as financial instability and an increased exchange rate risk. There are also risks for personnel deployed on assignment or permanently (with a heightened risk of events such as industrial accidents or terrorism). The Group may not be in a position to take out insurance or hedge against all of these risks, and may also encounter problems in performing its activities in such countries, which could have an impact on its employees and/or results, growth or outlook.

In order to prevent such risks from occurring, or to limit their impact, the Group implements the following measures:

- for personnel deployed on temporary or permanent assignments: systematic health and safety risk assessment procedures, as well as systematic emergency and protection procedures for each of the high-risk countries where the Group frequently deploys personnel, and specific procedures for the other countries, with the support of recognized outside providers in all cases; and
- for its business operations exposed to political, economic, social or financial instability and foreign exchange risks: alternative means of production situated in other countries and the development of business continuity plans designed to increase, as far as possible, the resilience of the business at local level.

Risks related to Human Resources

Vallourec's success depends on retaining key personnel within the Group and recruiting qualified staff. It also depends to a large extent on the strong and continuing contribution made by its key managers. If the Group were to lose an important member of its management team, whether to a competitor or for any other reason, this could reduce its capacity to implement its industrial or business strategy successfully.

The Group has put in place a number of Human Resources management programs designed to limit the possible impact of these risks, which have increased in the current economic climate, such as performance appraisals, definition of succession planning for key employees in each Region and/or Central Department, and programs to develop different categories of personnel, including future leaders. These different programs are monitored regularly by the Executive Committee.

The Group's performance also depends on the talents and efforts of highly qualified staff. Its products, services and technology are complex and its future growth and success depend largely on the skills of its engineers and other key personnel. Ongoing training of already skilled staff is also necessary to maintain a high level of innovation and adapt to technological change. The ability to recruit, retain and develop top-quality teams is a critical factor for the Group's success, and particular attention is currently being devoted to it, as a failure to do so could have a negative impact on its operating performance or development. In order to limit the risks related to the economic climate and to the launch of the Transformation Plan, Human Resources management programs are being monitored, and those programs that impact employee retention have been particularly strengthened.

5.1.3 Legal and tax risks

Call options stipulated in certain industrial cooperative agreements linking Vallourec to Nippon Steel Corporation (NSC, formerly NSSMC) and Sumitomo Corporation

Certain industrial cooperative agreements linking the Group to Nippon Steel Corporation (NSC, formerly NSSMC) and Sumitomo Corporation contain reciprocal change of control clauses under the terms of which each party has, in certain circumstances, a call option over the other party's interest or a termination right depending on the circumstances, in the event of a change of control of the other party (or of the entity that controls it).

NSC and/or Sumitomo Corporation therefore have, in the event of a change of control of Vallourec Tubes or of Vallourec, the right to acquire the shares held by the Group in the capital of VAM USA LLC.

The agreements entered into on 1 February 2016 which came into effect on 1 October 2016, amended the reciprocal change of control clauses relating to Vallourec Soluções Tubulares do Brasil (VSB, formerly known as Vallourec & Sumitomo Tubos Do Brasil), in order to take into account Vallourec Tubos do Brasil's contribution of almost all of its assets to VSB, and thus the expansion of VSB's business scope. In the event of a change in control of Vallourec Tubes, Vallourec Tubos do Brasil or Vallourec, NSC benefits from the right to acquire the Jeceaba plant which was the scope of VSB's business before the 1 February 2016 agreement came into effect.

In return, the Group has the right, under certain circumstances, to acquire the shares held by the NSC group and Sumitomo Corporation in VSB in the event of a change in control of NSC or Nippon Steel and Sumikin Tubos do Brasil (or the entities controlling them).

Moreover, in the event of a change of control of Vallourec Oil & Gas France (VOGFR), Vallourec Tubes, or Vallourec, NSC has the right to cancel the Research and Development contract entered into by VOGFR and NSC on 1 April 2007, while retaining the right to use the research and development results jointly obtained and to enable any licensees to benefit from such results, as VOGFR benefits from the same rights in the event of a change in control of NSC. If NSC exercises its right of cancellation, it will also be entitled to continue to use the VAM® trademarks for three years from the date of such cancellation.

Risks related to weaknesses in internal control and/or risks of fraud or corruption

The Group's international profile involves complex processes at entities with different levels of sophistication in terms of internal control, evolving in a variety of legal environments, and running different information systems. In this context, Vallourec runs a risk of completing inaccurate and/or inappropriate or fraudulent transactions or operations. Some of the Group's activities are performed in countries which have a risk of corruption, which exposes it to civil and/or criminal sanctions which could have a negative impact on the Group's financial position or image.

To limit these risk factors, Vallourec began in 2013 a plan to strengthen its internal control mechanism, which is designed to better structure and coordinate the actions taken. This process particularly relies on a body of rules and procedures that is disseminated to all subsidiaries. These rules and procedures are regularly updated to ensure they are in line with changes in Vallourec's processes and risks.

The essential values of Vallourec also incorporate an ethical component. The Group's requirements have been formally established in the Code of Ethics, which has been extensively disseminated among all personnel.

In 2016, an amended version of the Code of Ethics was adopted and rolled out within the Group's entities in order to strengthen Vallourec's commitments to combat corruption and abide by competition rules, all while maintaining the values and principles of action for employees, associates, customers, suppliers and stakeholders.

In 2018, the Group bolstered its internal mechanisms for preventing and detecting corruption, in particular by publishing an Anti-Corruption Code of Conduct and rolling out a professional whistleblowing system within all Group entities. This prevention system was certified by ETHIC Intelligence.

In order to ensure that the principles and controls required by all of the procedures are respected, regular audits are conducted by the Internal Audit Department, according to the multi-year audit plan.

Export control/customs duty risks

As with its international business, the Group exports its products and services to numerous countries. Some countries (in particular in Europe and the Americas) may be subject to economic and financial sanctions, which apply to the Group. Exports to these countries are thus subject to prior authorizations from the competent authorities or to prohibitions or restrictions, in particular that are sector-specific.

These international sanctions, and their rapid evolution, are likely to have an impact on the Group's internal policies and activities. The Group could be sanctioned if it does not comply with these regulations.

Vallourec strives to reduce these risks, primarily by using the following measures:

- monitoring all regulations that could have an impact on the Group's business;
- publication of internal procedures which in particular lead to prior checks on sensitive transactions, as well as strengthened verifications;
- establishment of specific clauses in contracts; and
- raising teams' awareness about export control issues.

The Group may also be impacted by the various trade protection instruments that have created customs barriers in Vallourec's business sectors, in particular for steel products.

Risks related to intellectual property

Risks related to intellectual property primarily stem from:

- disputes brought by third parties against the Group;
- the appropriation of its technologies by competitors; and
- fraudulent use by third parties of its trademarks.

To limit the impact of these risks, the Group has an Intellectual Property Department and a Legal Department comprised of qualified and experienced personnel who are responsible for (i) taking the necessary measures to protect and ensure its intellectual property rights are respected, while ensuring the rights of third parties are respected, and (ii) educating Group employees on the importance of better protecting and defending its intangible assets.

Preserving the Group's intellectual property also entails protecting its investments in Research and Development, and its technological edge.

To that end, the Group pursues its efforts at both national and international levels to:

- protect its innovations through patents and secrecy (e.g. confidentiality agreements, specific procedures to maintain trade secrets);
- protect its distinctive marks, such as trade names, domain names and trademarks; and
- preserve the value of its intellectual property through its global network of licensees.

However, the laws and regulations, as well as the legal system in some countries in which the Group operates do not necessarily provide such extensive and effective protection for intellectual property rights, and/or the means to combat counterfeiting at this time as in countries such as France, Germany or the United States.

That is why the Group, in addition to the civil and criminal legal actions it is taking, as well as successful counterfeit seizures, is also simultaneously developing technical trademarking and authentication techniques for there to be greater product traceability, including by intermediate distributors and customers themselves. In particular, Vallourec has industrialized and qualified its Valguard solution, which permits the safeguarding of both the certificates relating to Vallourec tubes, notably through a QR code, and the products themselves, thanks to a cutting-edge marking using a "Vallourec DNA" tracer.

These actions and technical solutions are key elements in the counterfeiting prevention policy used by the Group.

Like other tubular products and accessories manufacturers, the Group has indeed been faced with the existence of counterfeit products for sale on the market, which use the trademarks of Vallourec and its subsidiaries, and are sometimes even accompanied by false certificates. Counterfeiting activities aim to confuse customers in terms of the source of products, thereby allowing the counterfeiters to unfairly derive a profit from the Group's investments and reputation. There are thus multiple risks involved: in addition to the risk of losing customers drawn to cheaper products, there is a material risk of accidents if the counterfeit products have problems with quality and do not comply with the applicable standards. These risks could have an impact on the Group's image, and, indirectly on its financial results.

In order to more effectively combat counterfeiting, the Group has not only created, in 2015, a Counterfeit Committee, but has moreover been one of the founding members of the Steel Alliance Against Counterfeiting (SAAC), which combines the most well-known manufacturers of tubular products in the world market to combat counterfeiting. The Group has also doubled its campaigns to raise awareness among the public authorities and market players concerned. To that end, 2018 was particularly rich in both targeted and comprehensive initiatives to raise awareness, in particular through the public interventions during the Abu Dhabi International Petroleum Exhibition & Conference (ADIPEC) and in international conferences, alongside major players like Interpol, the World Customs Organization and the Emirates Intellectual Property Association.

If, despite all of the measures taken, the Group was unable to successfully protect, maintain and defend its intellectual property, it would risk losing a portion of its technological edge, customers and income sources; this could have a significant adverse effect on its activities, results and image.

Tax and tax evasion risks

The Group's entities conduct sales, industrial and/or financial activities in various countries and have the necessary personnel, equipment, and assets there for that purpose. The contracts entered into by the Group's entities, with one another or with third parties, formalize these activities. As an international group that carries out its activities in numerous countries, Vallourec has structured its sales, industrial and financial activities, as well as its contracts, in compliance with the various regulatory and legal requirements to which it is subject, and according to its sales, industrial and financial objectives. Through this structure, as well as with the regular monitoring of changes in these legal and regulatory requirements, the Group particularly aims to limits potential tax risks (including any tax evasion risks).

To the extent that the laws and regulations of the various countries in which the Group's entities are located or operate do not establish clear or definitive guidelines, the tax regime that is applied to its activities, transactions or intragroup restructurings (whether past or future), is or may sometimes be based on interpretations of French or foreign tax regulations and laws. The Group cannot guarantee that these interpretations will not be challenged by the competent tax administrations in the jurisdictions concerned. More generally, any breach of the current tax laws and regulations in the countries in which the Group or Group's entities are located or operate could result in reassessments of taxes owed, or the payment of late interest, fines and penalties. Furthermore, the tax laws and regulations could change or be modified through their interpretation and application by the jurisdictions or tax administrations concerned, in particular in the context of joint initiatives occurring on an international or community scale (OECD, G20, European Union).

Each of the preceding factors could result in an increase in the Group's tax burden, and have a material adverse impact on its financial position and results.

The Group has been and may in the future be subject to recovery proceedings and tax disputes in some countries in which the Group entities are located or operate. When the Group considers that a loss relating to the tax disputes is probable, a provision is made according to the best estimate of foreseeable expenses. The outcome of the ongoing tax proceedings might, however, differ from the Group's forecasts and positions, or from the amount that may be provisioned in the consolidated financial statements. The Group cannot provide assurance that these provisions will be sufficient to cover the amounts to be actually disbursed at the end of these proceedings.

The Group's future results, the French and foreign tax rules, and tax controls or disputes could limit the Group's capacity to use its tax deficits, and thus impact its financial position.

The Group has significant tax losses (for which the accounting impacts are described in Note 5 of the appendix to the consolidated financial statements for the fiscal year ended 31 December 2018, which appears in Section 6.1.7 C of this Registration Document).

The Group's ability to effectively use these losses will depend on a number of factors, including (i) the ability to achieve tax benefits and the extent to which such benefits cover losses, (ii) the limits applicable to any tax losses imposed by the French and foreign laws and regulations, (iii) the consequences of current or future tax audits or disputes, and (iv) any changes in the applicable laws and regulations.

The impact of these factors could increase the tax pressure to which the Group is subject, and thus have an adverse effect on its effective tax rate, financial position and results.

Risks related to disputes

In the normal course of its business, the Group is involved in lawsuits and may be subject to inspections or inquiries by tax or customs authorities, and other national and supranational authorities. The Group recognizes a provision whenever a tangible risk is identified and a reliable estimate of the cost arising from said risk can be made.

To the Group's knowledge, at this time, with the exception of the disclosures in Note 17 to the consolidated financial statements, there are no governmental, judicial or arbitration proceedings, including any proceeding of which the Company is aware that is pending or has been threatened, which could have or has had material effects on the financial position or profitability of the Company and/or Group over the last 12 months.

5.1.4 Financial and market risks

Given its financial structure, the Group is exposed to (i) liquidity risks and (ii) market risks, including interest rate, foreign exchange, credit and equity risks.

A description of market and liquidity risks is provided in Notes 8 and 16 to the consolidated financial statements in Section 6.1.7 C of this Registration Document.

Liquidity risks

As at 31 December 2018, the maturities of current bank loans and other borrowings totaled €1,000,872 thousand; the maturities of non-current bank loans and other borrowings totaling €1,796,637 thousand are shown in the table below:

Breakdown by maturity of non-current loans and other borrowings (> 1 year)

(in € thousand)	> 1 year	> 2 years	> 3 years	> 4 years	5 years or more	Total
As at 31/12/2017	**413,043**	**12,287**	**13,638**	**780,004**	**598,147**	**1,817,119**
• Finance lease	8,298	8,315	8,354	8,398	17,426	50,791
• Other non-current borrowings	2,713	3,421	776,641	399,076	563,995	1,745,846
AS AT 31/12/2018	**11,011**	**11,736**	**784,995**	**407,474**	**581,421**	**1,796,637**

The Group's financial resources are composed of bank financing and market financing.

The majority of long-term and medium-term bank financing has been put in place in Europe via Vallourec and, to a lesser extent, via the subsidiaries in Brazil and the United States (see below). The Vallourec credit lines (€2,150 million) do not benefit from any security or guarantee.

Market financing is arranged exclusively by Vallourec.

Within the context of deteriorating market conditions and results of the Group, Vallourec's rating was downgraded to B-, with a negative outlook.

As at 31 December 2018, the Group complied with its covenants and the terms and conditions for obtaining and maintaining all of the above facilities.

The Company conducted a specific review of its liquidity risk and considered itself to be able to meet its future maturities.

IN EUROPE

In February 2014, Vallourec took out a confirmed credit facility for the amount of €1.1 billion, maturing in February 2019, plus two one-year extension options. In addition to the first one-year extension obtained for €1.078 billion, the second extension was granted in July 2016 for the sum of €989 million, which was then raised to €1,034 million in July 2017. The new maturity date is in 2021. This credit line is available for the Group's general funding purposes. As at 31 December 2018 this line had not been drawn.

In June 2015, Vallourec agreed to a confirmed bilateral line of €90 million until February 2019 with two one-year extension options, which were granted in July 2016. As at 31 December 2018 this line had not been drawn.

In September 2015, Vallourec took out a confirmed credit facility for €400 million maturing in July 2019. An initial one-year extension (until July 2020) was granted in July 2016 for the full amount. A second extension was granted in February 2019, extending this financing from July 2020 to February 2021 in the amount of €300 million. As at 31 December 2018 this line had not been drawn.

In May 2016, Vallourec took out a confirmed credit facility for €450 million maturing in February 2020. An additional one-year extension was granted in February 2019, extending this financing from February 2020 to February 2021 in the amount of €300 million. As at 31 December 2018 this line had not been drawn.

In May 2018, Vallourec took out a credit line for €110 million with the European Investment Bank maturing in April 2027. This line of credit is available to finance the Group's Research & Development, and digitization projects. As at 31 December 2018 this line had not been drawn.

Each of these bank facilities requires Vallourec to maintain its consolidated net debt-to-equity ratio ("bank covenant") at less than or equal to 100%, calculated as at 31 December each year. The Group's consolidated debt to equity ratio was 72% as at 31 December 2018, as calculated under the Group's bank loan covenant. As defined in the bank loan agreements, the banking covenant ratio is the ratio of the Group's consolidated net debt (including the shareholder's loan in Brazil) to the Group's equity, restated for gains and losses on derivatives and for foreign currency translation reserves (gains and losses of consolidated subsidiaries in foreign currency).

A change in control of Vallourec could trigger repayment of all or part of the debt, as decided by each participating bank. It is also stipulated that the entire debt will be immediately due and payable if the Group defaults on one of its debt obligations (cross default), or in case of a major event with consequences for the Group's business or financial position and its ability to repay its debt.

In addition to this bank financing, the Group aims to diversify its sources of financing on the markets. For example, Vallourec launched a commercial paper program on 12 October 2011 to meet its short-term needs. The program has a €1 billion ceiling. As at 31 December 2018, Vallourec had outstanding €161.4 million for maturities ranging from 1 to 12 months. This commercial paper program is rated B by Standard & Poor's.

In August 2012, Vallourec also issued two long-term private bonds totaling €455 million. The amounts and terms of these two private placements are €400 million for seven years with an annual coupon of 3.25% for one, and €55 million for 15 years with an annual coupon of 4.125% for the other.

On 30 September 2014, Vallourec issued a €500 million bond, maturing in September 2024, with a fixed annual coupon of 2.25%.

On 27 September 2017, Vallourec issued a €250 million bond, consisting of Bonds Convertible into New Shares and/or Exchangeable for Existing Shares, maturing in October 2022, with a fixed annual coupon of 4.125%, a 37.5% conversion premium and a unit par value of €6.89.

On 11 October 2017, Vallourec issued a €400 million bond, which received a matching contribution on 23 October 2017 in the amount of €150 million (i.e. €550 million in total) maturing in October 2022 with a fixed annual coupon of 6.625%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

On 12 April 2018, Vallourec issued a €400 million bond, maturing in October 2023, with a fixed annual coupon of 6.375%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

As at 31 December 2018, the market value of these fixed-rate bond issues was €403.9 million, €61.7 million, €525.3 million, €554.6 million and €404.9 million, respectively.

These bond issues were intended to diversify and increase the amount and extend the maturity of the financial resources available to the Group.

They specifically include a change of control clause that would trigger the mandatory early redemption of the bonds at the request of each bondholder in the event of a change of control of Vallourec (in favor of a person or a group of people acting jointly), entailing a reduction in the Company's financial rating.

The bonds may also be redeemed early at the request of the bondholder or Vallourec, depending on the case, in the event of certain standard cases of default for this type of bond issuance or a change in Vallourec's position or in the tax regulations.

BRAZIL

In 2010, Vallourec & Sumitomo Do Brasil, now known as Vallourec Soluções Tubulares do Brasil (VSB), entered into a finance lease with a nominal value of BRL 570 million relating to equipment needed to operate the plant at Jeceaba. As at 31 December 2018, the residual amount outstanding on this finance lease was BRL 251 million.

UNITED STATES

Vallourec Star LP benefits from a bilateral bank line of credit established in 2016 for a total amount of USD 80 million, expiring in March 2019. The amount used as at 31 December 2018 totaled USD 80 million. This line contains clauses relating to the indebtedness of Vallourec Star LP and a change of control clause.

Rating risk

A review of Vallourec's debt rating could increase the cost of borrowing and in certain cases limit Vallourec's access to the capital that the Company needs.

Vallourec's financial rating from the rating agencies relies, in part, on factors that are beyond its control, such as the conditions affecting the Oil & Gas market in general or those impacting certain countries or regions where the Group conducts its business. The rating agencies may modify Vallourec's rating at any time, in particular due to a change in economic conditions or a deterioration in the Group's performance or results. A downgrading of Vallourec's rating could have a material adverse effect on its results and financial position.

Market risks

INTEREST RATE RISKS

The Group is exposed to interest rate risk on its variable-rate debt.

In December 2009, VSB took out a loan from Banco Nacional de Desenvolvimento Econômico e Social (BNDES). This 4.5% fixed-rate loan was repaid in January 2018. VSB also concluded a fixed-rate finance lease in 2010.

Vallourec issued:

- in August 2012, two long-term private placement bonds totaling €455 million. The respective amounts and terms of these two private placement bonds are €400 million for seven years with an annual coupon of 3.25% for one, and €55 million for 15 years with an annual coupon of 4.125% for the other;
- in September 2014, a €500 million bond issue, maturing in September 2024, with a fixed annual coupon of 2.25%;
- in September 2017, a €250 million bond issue, consisting of bonds convertible into new shares and/or exchangeable for existing shares, maturing in October 2022, with a fixed annual coupon of 4.125%, a 37.5% conversion premium and a unit par value of €6.89;
- in October 2017, a €400 million bond issue, with a matching contribution of €150 million (i.e. €550 million in total) maturing in October 2022 with a fixed annual coupon of 6.625%;
- in April 2018, a €400 million bond, maturing in October 2023, with a fixed annual coupon of 6.375%.

As at 31 December 2018, financial debt exposed to changes in variable interest rates was €142.8 million (about 5% of total gross debt). No other material fixed-rate credit facility will reach contractual maturity in the 12 months following the 31 December 2018 reporting date, apart from the private placement of €400 million maturing in August 2019, the commercial paper (€161.4 million as at 31 December 2018) maturing in more than one year, the bilateral line granted by JP Morgan to Vallourec Star in the amount of €69.9 million (USD 80 million) maturing in March 2019, as well as various credit facilities (€32.3 million as at 31 December 2018) of Brazilian and Chinese subsidiaries.

Given the Group's interest rate risk hedging policy, the impact of a 1% rise in short-term rates in the euro zone, on Brazilian and Chinese rates, and UK and US money market rates would result in a €1.4 million increase in the Group's annual financial expenses, based on an assumption of complete stability of the financial liabilities and constant exchange rates, and after taking into account the effects of any hedging instruments. This impact does not take into account the interest rate risk on commercial paper with a maximum maturity of 12 months and on cash in short-term investments (with a maximum maturity of three months).

The tables below summarize the Group's position with regard to interest rate risk in 2018 and 2017:

Total debt as at 31/12/2018

(in € thousand)	Other borrowings	Cash
Fixed rate on date granted	2,654,662	–
Variable rate on date granted swapped to fixed rate	-	–
Fixed rate	**2,654,662**	**–**
Variable rate	142,847	739,576
TOTAL	**2,797,509**	**739,576**

Total debt as at 31/12/2017

(in € thousand)	Other borrowings	Cash
Fixed rate on date granted	2,381,008	–
Variable rate on date granted swapped to fixed rate	-	–
Fixed rate	**2,381,008**	**–**
Variable rate	182,331	1,021,035
TOTAL	**2,563,339**	**1,021,035**

FOREIGN EXCHANGE RISK

Foreign currency translation risk

The assets, liabilities, revenues and expenses of the Group's subsidiaries are expressed in various currencies. The Group financial statements are presented in euros. The assets, liabilities, revenues and expenses denominated in currencies other than the euro are translated into euros at the applicable rate so that they can be included within the financial statements.

If the euro rises (or falls) against another currency, the value in euros of the various assets, liabilities, revenues and expenses initially recognized in that other currency will fall (or rise). Therefore, changes in the value of the euro may have an impact on the value in euros of the assets, liabilities, revenues and costs not denominated in euros, even if the value of these items in their original currency has not changed.

In 2018, net income, Group share, was generated to a significant extent by subsidiaries that prepare their financial statements in currencies other than the euro (mainly in US dollars and the Brazilian real). A 10% change in exchange rates would have had an upward or downward impact on net income, Group share, of around €3.1 million. In addition, the Group's sensitivity to long-term foreign exchange rate risk is reflected in the changes that have occurred in recent years in the foreign currency translation reserves booked to equity (-€648.5 million as at 31 December 2018) which, in recent years, have been linked mainly to changes in the US dollar and Brazilian real.

Foreign currency translation reserve – group share

(in € thousand)	31/12/2017	31/12/2018
USD	193,059	251,022
GBP	(12,107)	(12,031)
BRL	(738,432)	(880,712)
CNY	19,532	16,192
Other	(26,513)	(22,930)
TOTAL	**(564,461)**	**(648,459)**

As far as the Group is aware, translation risk is unlikely to threaten its financial equilibrium.

Transaction risk

The Group is subject to exchange rate risks due to its business exposure linked to sales and purchase transactions entered into by some of its subsidiaries in currencies other than their functional currency.

The main foreign currency involved is the US dollar (USD): a significant portion of the Group's transactions (approximately 35% of Group revenue in 2018) are invoiced in US dollars by companies whose functional currency is not the US dollar. Exchange rate fluctuations between the euro, the Brazilian real and the US dollar may therefore affect the Group's operating margin. Their impact is, however, very difficult to quantify for two reasons:

- there is an adjustment phenomenon on sales prices denominated in US dollars, which is related to market conditions in the various sectors of activity in which Vallourec operates;
- certain sales and purchases, even though they are denominated in euros, are influenced by the level of the US dollar. They are therefore affected indirectly and at some time in the future by movements in the US currency.

The Group actively manages its exposure to foreign exchange risk to reduce the sensitivity of its net profits to currency fluctuations by setting up hedges once the order is placed and sometimes once a quotation is given.

Orders, and then receivables, payables and operating cash flows, are thus hedged with financial instruments, mainly forward purchases and sales.

Order cancellations could therefore result in the cancellation of hedges implemented, leading to the recognition in the consolidated income statement of gains and losses with regard to these canceled hedges.

To be eligible for hedge accounting as defined under IAS 39, the Vallourec Group has developed its cash management and invoicing systems to facilitate the traceability of hedged transactions throughout the duration of the hedging instruments.

As at 31 December of the last two years, forward foreign exchange contracts to hedge foreign currency-denominated purchases and sales amounted to the following:

Hedging contracts with regard to commercial transactions – exchange rate risk

(in € thousand)	31/12/2017	31/12/2018
Forward exchange contract: forward sales	805,754	1,158,870
Forward exchange contract: forward purchases	64,563	30,339
Currency options: sales	–	–
Currency options: purchases	–	–
Raw materials and energy – purchases, options	–	–
TOTAL	**870,317**	**1,189,209**

Contract maturities as at 31/12/2018

Contracts on commercial transactions *(in € thousand)*	Total	1 year	1 to 5 years	> 5 years
Exchange contracts: forward sales	1,158,870	1,082,223	76,647	–
Exchange contracts: forward purchases	30,339	30,339	–	–
Currency options: sales	–	–	–	–
Currency options: purchases	–	–	–	–
Raw materials and energy – purchases, options	–	–	–	–
TOTAL	**1,189,209**	**1,112,562**	**76,647**	**–**

Forward sales (€1,159 million of the €1,189 million total) correspond mainly to sales of US dollars. These contracts were transacted at an average forward EUR/USD rate of 1.20 and an average forward USD/BRL rate of 3.92. In 2018, as in 2017, the hedges entered into generally covered an average period of about 10 months and mainly hedged highly probable future transactions and foreign currency receivables.

In addition to hedges on commercial transactions, Vallourec has implemented forward contracts for USD 165 million (€143.8 million) and for CNY 270 million (€33.5 million) since 2011.

These instruments are intended to hedge the foreign currency loans and checking accounts established by the financial holding company Vallourec Tubes in the currency of the subsidiaries receiving them. The forward purchases and sales mature at various times in 2019, as and when the hedged loans and borrowings mature.

CREDIT RISKS

Vallourec is subject to credit risk on financial assets for which no impairment provision has been made and whose non-recovery could affect the Company's results and financial position.

The Group has identified three main types of receivables that have these characteristics:

- security deposits paid in connection with tax disputes and the tax receivables due to the Group in Brazil;
- trade and other receivables;
- derivatives that have a positive fair value:
  - security deposits and tax receivables due to the Group in Brazil: there is no specific risk in respect of these receivables, even if the outcome of the disputes is unfavorable, since the risk has already been assessed and a provision recognized in respect of these receivables, and the funds have already been paid in full or in part,
  - the Group's policy on the impairment of trade and other receivables is to recognize a provision when indications of impairment are identified. The impairment is equal to the difference between the carrying amount of the asset and the present value of expected future cash flows, taking into account the position of the counterparty.

The Group considers that as at 31 December 2018, there is no reason to assume that there is any risk in respect of receivables for which no provision has been made and which are less than 90 days overdue. Trade receivables more than 90 days past due and not impaired amounted to €55.6 million as at 31 December 2018, or 9% of the Group's total net trade receivables.

However, Vallourec believes that its credit risk is limited given its existing customer risk management procedures, which include:

- the use of credit insurance and documentary letter of credits;
- the long-standing nature of the commercial relationship with the Group's major customers; and
- the commercial collection policy.

In addition, as at 31 December 2018, trade receivables not yet due amounted to €419.8 million, or 70% of total net trade receivables. The following table provides an analysis by maturity of these trade receivables:

As at 31 December 2018 *(in € million)*	0 to 30 days	30 to 60 days	60 to 90 days	90 to 180 days	over 180 days	Total
NOT YET DUE	**302.2**	**81.5**	**9.3**	**26.2**	**0.6**	**419.8**

EQUITY RISK

Treasury shares held by Vallourec as at 31 December 2018 are allocated to allocation plans for certain employees or executive corporate officers of the Group.

In this context, Vallourec holds:

- 155 treasury shares acquired in 2011 under the share buyback plan of 7 June 2011, after vesting of 27,534 shares in 2012, 86,377 shares in 2013, 91,929 shares in 2014, 108,600 shares in 2015, 30,524 shares in 2016, 54,871 shares in 2017, and 10 shares in 2018 under the various performance share plans;
- 1,131 treasury shares acquired in 2012 under the share buyback plan of 31 May 2012, after vesting of 94,600 shares in 2014, 225,684 shares in 2016, and 78,585 shares in 2017 under the various performance share plans;
- 89,753 treasury shares acquired in 2014 after vesting of 128,689 shares in 2017 and 81,558 shares in 2018 for the various performance share plans.

To the best of its knowledge, the Group had no other exposure to equity risk as at 31 December 2018.

Risks related to impairments of goodwill and fixed assets

The Group faced a worsened economic climate which led it to record an impairment on 31 December 2014 of property, plant and equipment and intangible assets of the Vallourec Europe CGUs and of assets from the Jeceaba (Brazil) plant held in the Vallourec Soluções Tubulares do Brasil (VSB) joint venture. In 2016, the acquisition of VSB had the result of solidifying the impairment recorded in 2014.

As at 31 December 2018, goodwill was €358.4 million, (see Section 6.1.7 C, Note 1 to the consolidated financial statements).

Impairment tests performed in 2018 do not lead to impairments being recorded for loss in value beyond the isolated asset impairments (see Section 6.1.7 C, Note 2.3 to the consolidated financial statements).

The Group cannot rule out the possibility that the occurrence of future events could result in an additional impairment of certain fixed assets and/or goodwill. Potential significant impairments could have an adverse effect on the financial position and results of the Group for the fiscal year for which such charges could be recorded, and on its liquidity (with regard to the ratio contained in the banking agreements described above in the paragraph "Liquidity risks").

5.2 Risk management and internal control system

5.2.1 Risk management

Risk management and internal control are rolled out in all companies in which Vallourec directly or indirectly holds the majority of share capital. Companies whose shares are listed or under joint control have an appropriate system and internal control structure, consistent with current local legislation.

Internal control and internal audit rely on the results of the risk analysis, in order to improve the Group's internal control mechanisms and define its internal audit plan, respectively.

5.2.1.1 Objectives and general principles of risk management

Risk management provides management leverage for the Group, and primarily contributes to:

- securing the Group's decision-making processes and other procedures in order to promote the achievement of its objectives; and
- creating and preserving the Group's value, assets and reputation.

Furthermore, risk management aims to:

- promote consistency between the Group's actions and values; and
- mobilize the Group's employees around a common vision in terms of primary risks and raise their awareness of the risks inherent to their business.

Vallourec adopts a detailed cross-company approach in its "Group Risk Management Policy". The Risk Management Department provides methodological support for promoting and implementing this policy. This favors the development of internal control by anticipating risks and reviewing the "best practices" for controls.

Risks are managed by the industrial and sales units and by the functional departments.

The Risk Committees set up within each major entity and Region, and the Management Board evaluate the risks and determine the controls and action plans aimed at limiting the impact and/or the probabilities of these risks occurring.

5.2.1.2 Risk management system

Identifying risks consists of determining the main risks the Group faces with its operational and functional departments. In collaboration with the entity in question, the Risk Management Department analyzes these risks and maps them, an exercise which in particular aims to agree on a list of risks and to determine how to reduce, transfer, eliminate or accept them. Priorities are determined not only according to probability of occurrence and/or consequences of risks, and control level, but also of the progress of control improvements through benchmark practices in the subject area.

Risk maps are in place for each of the major entities, Regions, and for the Management Board. Each map incorporates main risks, along with their likely scenarios, internal and external experiences with such risks, controls in place and "best practices".

Risk management is provided by the Regions and Management Board during the annual committee meetings in which the Head of risk management participates, in order to provide ideas and guarantee that actions are consistent at Group level. Each Committee meeting is attended by the relevant entity manager and their main assistants. Functional managers affected by specific risks may also be invited, in particular managers from the Departments of Technology, Research and Development and Innovation, and Information Systems. Each Committee meeting handles the following matters:

- validation of diagnosis, allocation and follow-up of action plans for each priority risk;
- validation of the key risk indicators, which ensures the relevance of new controls after closure of the action plan, and the on-going application of said controls.

The Group works collaboratively with its insurers to supplement this work of identifying and mitigating industrial operating risks and to roll out business continuity plans.

5.2.2 Internal control

5.2.2.1 General internal control principles and objectives

The Group's internal control system was developed and implemented with significant involvement from the Group's staff. It aims to provide reasonable assurance that the following four objectives can be achieved:

- compliance with laws and regulations in force;
- proper application of the instructions issued and compliance with the policies laid down by the Management Board;
- proper operation of internal processes (in particular those relating to achieving objectives and safeguarding assets); and
- accuracy of accounting and financial information.

The internal control process is constantly evolving in order to adapt to changes in the economic and regulatory environment and the Group's structure and strategy.

Independently of these developments, the key control activities for internal control and risk management processes are regularly reviewed, at least annually for the most critical control activities.

In order to ensure the consistency of daily actions led worldwide on behalf of the Group, Vallourec has put in place a set of key internal control procedures. These constitute the basis for the internal rules which apply to all its employees and to its units.

At the heart of Vallourec's internal control system, these procedures provide a framework for the actions of each employee. They relate, in particular, to ethics, compliance with laws and regulations, the delegation of authority, the separation of assignments and tasks, the confidentiality of information, the prevention of insider trading, the procedure for relations with the media and financial communication.

ETHICS AND COMPLIANCE WITH LAWS AND REGULATIONS

The Group's structure and actions in terms of ethics and compliance with the laws and regulations are more extensively described in Section 4.2.1 "Ethics and Compliance" of this Registration Document.

DELEGATION OF AUTHORITY

The level of authority given to each manager within the Group must remain compatible with the maintenance of an overall level of control, with the Group's strategy, and with the application of rules common to all Group entities.

To meet these requirements, the aim of the delegated authority procedure at Group level is to clearly define the prerequisite approval levels for the main commitments entered into by any Group entity. Delegations of authority may not contravene applicable statutory and regulatory provisions.

Led by the Internal Control Department, this procedure is adapted as often as needed. It is implemented in each Region in the areas for which the subdelegations have been authorized by the Group. The strict application of these delegations of authority is systematically confirmed during the internal audits of the Group's entities.

CONFIDENTIALITY OF INFORMATION

Against a backdrop of intense competition, the Group needed to make all employees aware of their obligations as regards confidentiality. Vallourec therefore drew up a Confidentiality Charter with the aim of enabling it to carry out its business under the best possible conditions in the face of competition and of protecting people working for Vallourec by informing them of the confidentiality obligations with which they must comply.

PREVENTION OF INSIDER TRADING

Vallourec has a Code of Good Conduct on the prevention of insider trading that may occur in connection with transactions in its shares. This Code concerns not only Vallourec's corporate officers, but all of the Group's employees and partners.

Its objective is to ensure compliance with precautions in order to (i) protect staff at all levels by making them aware of stock exchange regulations and applicable penalties, so as to enable them to avoid being the subject of legal proceedings, (ii) protect Vallourec and the Group, in particular from the risks of damage to its image and reputation and a decline in the value of its shares, and (iii) retain the confidence of investors and maintain equality of treatment between shareholders.

The Group's Legal Director performs an ethics function, and is mainly in charge of overseeing compliance with the provisions of the Code of Good Conduct, although each employee involved is ultimately responsible for compliance with the applicable regulations. In particular, the Legal Director updates the insider lists required by current regulations and keeps them available for the French securities regulator (*Autorité des Marchés Financiers* – AMF).

PROCEDURES FOR RELATIONS WITH THE MEDIA

Vallourec defined procedures for relations with the media, as well as a set of best practices to be followed on social networking sites, which aim to safeguard the development of the Group's image and the promotion of its activities, while ensuring its messages are consistent and its reputation is protected.

All information for the media, whether provided or requested, and when it concerns in particular a press release, conference, interview or telephone call, is subject to an internal validation process.

Likewise, all activity on social networking sites must be conducted in accordance with the best practices that have been formally adopted by the Communications Department and posted on Vallourec's Intranet.

FINANCIAL COMMUNICATIONS

Vallourec has drawn up a financial communications procedure, which aims to ensure that the Group's system of providing financial information to the public complies with applicable statutory and regulatory provisions.

Annual and interim financial reports and quarterly financial information are the subject of an internal approval process prior to their release and filing with the AMF.

5.2.2.2 Internal control mechanism

The Management Board sets the internal control policy and ensures it is implemented by the executive management of each Group entity.

To ensure the consistency of the Group's procedures worldwide, the Management Board relies on the functional departments to draw up procedures, give instructions and ensure compliance with them.

In 2013, the Group launched a plan to strengthen its internal control mechanism over three years, in an effort to better structure and coordinate existing procedures.

In 2014, the Group focused specifically on preparing, disseminating and monitoring a self-assessment mechanism on internal control. This tool relies on a new set of internal control guidelines, which were developed by Vallourec using objectives which go beyond the reliability of financial information. These are based on an analysis of the risks inherent in key processes and on identifying their key control points. In preparing them, Vallourec relied on the recommendations of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in its 2013 edition, and on the provisions of the Reference Framework of the French securities regulator in its 2010 edition. Specific controls were included to prevent fraud.

In 2016, the Group provided all of its managers with training on internal control. The objective was to strengthen the culture of each of the managers in this area. This enables them to closely adapt the internal control mechanism of their entity based on the guidelines and priorities given by the corporate Internal Control Department.

In 2017, a new self-assessment session based on the improved questionnaire was conducted. This allowed points for improvement and joint action plans to be identified, which were completed in 2018.

In 2018, a shortened version of the self-assessment process focusing on the most critical legal and managerial obligations was prepared, to be applied annually.

Moreover, the Internal Audit Department always participates in these processes with the objective of evaluating the quality of the self-assessment at the internal control level approved by each company manager, through the evaluation of a predefined number of "key" checkpoints.

INTERNAL CONTROL MECHANISM FOR FINANCIAL AND ACCOUNTING INFORMATION

Financial and accounting reporting

Preparation of financial and accounting information is centralized based on the subsidiaries' financial statements, adjusted to comply with Group standards. The information is collected via reporting and consolidation software at all the consolidated subsidiaries.

The subsidiaries report monthly in the following month. Accounting consolidation is comprehensive and completed quarterly, within the same period of one month. The reporting of off-balance sheet contingent liabilities and commitments is an integral part of the quarterly consolidation process.

External financial information

Vallourec publishes quarterly information as at 31 March and 30 September each year, including, in particular, the consolidated statement of financial position and income statement. The preparation of the quarterly, interim and annual consolidations is the responsibility of the Management Board. The Statutory Auditors conduct an audit of the annual financial statements and a limited review of the interim financial statements. They generally do not audit the quarterly financial information.

Cash management and financing

The Cash Management and Financing Department is in charge of the Group's financing strategy and manages banking liquidity and access to market financing.

The Cash Management and Financing Department ensures that cash flow is optimized and controlled through:

- forecasts prepared by companies in the Group;
- centralizing euro, pound sterling, Chinese yuan and US dollar cash flow at the main European companies;
- centralized cash management in Chinese yuan for the main Chinese companies at Vallourec (China) Co. Ltd;
- centralized cash management in US dollars for some US companies at Vallourec Holding, Inc. and Vallourec Tubes; and
- monthly cash management reports in Brazilian real at the Brazilian companies.

Long-term (more than one year) financing and investment are managed by the Cash Management and Financing Department. Financing and investments of less than one year are delegated to subsidiaries according to a specific Group procedure: quality of the banks involved, risk-free investment, and monitoring of the financial guarantees given.

The Cash Management and Financing Department is also responsible for foreign exchange and interest rate risk management strategy.

To this end, currency hedging operations for sales in US dollars, pound sterling, Chinese yuan, Norwegian krone, Kuwaiti dinars, and Canadian dollars are centralized for the Group's main companies.

Currency and currency hedging operations are governed by rules established by the Group's Cash Management and Financing Department and, more generally, all the cash management operations specific to each company are conducted within the framework of a general cash and risk management policy.

The Cash Management and Financing Department ensures debts, investments and foreign exchange transactions of subsidiaries are tracked. As part of this tracking, it prepares a monthly report, which is sent to the Management Board.

Procedures and instructions for financial and accounting reporting

With the objective of producing high-quality financial and accounting information, Vallourec has established procedures and instructions tailored to its French and foreign subsidiaries. These procedures are classified by topic and deal mainly with accounting, cash and cash equivalents, and reporting issues, and with the IFRS framework.

Details of the procedures are available on an intranet site that can be consulted by all of the Group's finance staff.

To ensure consistency between financial and accounting data on the one hand, and management tools and rules on the other, the Group has drawn up a set of procedures in a Management Manual, summarizing the definitions, principles and rules for management control and for the production of financial information. This document is disseminated among employees who are in charge of preparing and controlling management and financial information. Its purpose is to contribute to the quality and consistency of this information.

OTHER KEY INTERNAL CONTROL MECHANISMS

Industrial capital expenditure

The Management Board reviews the Group's capital expenditure position presented by the Capital Expenditure, Projects and Engineering Department several times per year. It examines budgets, capital expenditure authorizations, and actual and forecast expenses.

According to the procedure, "Management of CAPEX projects", projects with an expected cost of over €1 million follow a specific qualification and authorization process through three stages of Front-End Loading.

The Qualification Committee includes the Group's experts, examines the fundamental aspects of the projects at each of the three stages (market assumptions, technical choices, budget, planning and risks) and meets once a month under the aegis of the Capital Expenditure, Projects and Engineering Department. The Authorization Committee brings together either the Director of Capital Expenditure, Projects and Engineering, and the Director of Management Control for projects over €1 million, or the members of the Management Board for projects of more than €5 million. During these committee meetings, the projects are compared in terms of alignment with strategy, profitability and risks, all within the framework of the Group's budget.

The Capital Expenditure, Projects and Engineering Department participates as a member of the steering committees for major industrial projects in progress, in order to implement "best practices" of governance and management. The goal is to reliably complete these projects in line with expected costs, quality and time frames. It also audits certain projects underway, in order to ensure that best project management practices are effectively implemented.

The Capital Expenditure, Projects and Engineering Department carries out a monthly check on compliance with annual objectives and, in conjunction with the Regions concerned, ensures that corrective measures are taken if any discrepancy is noted.

A posteriori controls are carried out on expenses, expected objectives and the profitability of capital expenditure projects at the initiative of the Capital Expenditure, Projects and Engineering Department, and with the support of the Management Control Department. Such controls are performed on projects authorized in earlier years that are in production.

Management system

Vallourec has management systems (Vallourec Management Systems – VMS), which are implemented at all Group companies. VMS has been structured around seven main components:

- the Human Resources management system, including, in particular, the Talent 360 system, on which the management of performance, annual appraisals and professional appraisals depend;
- the CAPTEN+ Safe program, which coordinates all actions to continuously improve work safety;
- programs related to sustainable development, following the commitments of the Group's Sustainable Development Charter;
- management systems contributing to industrial excellence, which specifically comprise the quality management and lean management systems. Lean management aims to improve performance in terms of productivity, level of stock and time to complete orders;

- systems that include activities related to excellence in sales, including marketing, key account management, and the implementation of valued offers;
- Research and Development management systems, through the innovative project management system; and
- the major projects management system described in the Group's Qualification and Authorization Management Handbook, which coordinates the activities and deliverables required for managing industrial investments.

In addition to the control of processes and continuous improvement, VMS is responsible for ensuring that initiatives are consistent with the aims of the Group's strategic plan.

The functional departments assist the Group's entities in rolling out VMS, sharing and capitalizing on "best practices", and developing managers' expertise.

Quality – safety

The Quality Department and the Group Safety Department are in charge of proposing the guidelines and objectives of the Group to General Management, in terms of quality and safety, and of defining applicable standards on the subject for the Group as a whole.

Under VMS, these standards define the suitable systems, methods and specific tools to be implemented to consistently improve product quality and control of manufacturing processes, on the one hand, and the safety of people and equipment, on the other. They are defined in compliance with the quality management standards (ISO 9001 or ISO/TS 16949, API, ASME, etc.) and safety standards (OHSAS 18001, ISO 45001).

The Quality Department and the Safety Department handle promotion of these standards, assist with their implementation, set up the necessary training programs and oversee the sharing of best practices. Through the visits they make to all Group sites, in addition to the audits carried out by external certification bodies, they ensure these practices are well understood and properly applied to all processes which contribute to customer satisfaction.

The Vallourec Quality approach takes into account the requirements of the most stringent standards, in particular those relating to standardization, problem resolution, the control of variations in quality and risk prevention.

The safety improvement program, known as CAPTEN+ Safe, relies on the commitment of management as a whole, the involvement of all employees and the establishment of appropriate follow-up indicators.

Sharing the Management Board's concern regarding safety and quality, the Supervisory Board starts each of its meetings with a progress review of the Group's safety and quality performance.

Sustainable development

Sustainable development is managed within Vallourec by the Sustainable Development Department, which reports to the Group's General Counsel, General Secretary and a member of the Executive Committee.

In 2014, the Sustainable Development Department presented the Executive Committee with a five-year strategic plan. Its main provisions, approved by the Supervisory Board during its meeting of 30 July 2014, were incorporated into the Company's strategic guidelines. The deployment of this plan has been presented annually to the Executive Committee to report on its progress and propose new actions. The Strategy Committee of the Supervisory Board has also been informed of progress on an annual basis. In late 2018, a specialized committee dedicated to Corporate Social Responsibility (CSR) was created within the Supervisory Board. This new committee is responsible for studying and monitoring CSR matters and the way the Group focuses on promoting the creation of value over the long term, taking into account social and environmental challenges related to its activities.

The Sustainable Development Department's main role is to mobilize the Regions and functions to make progress in sustainable development and social responsibility, in particular by identifying the expectations of the various stakeholders of the business, as well as the best practices to be developed.

Whenever necessary, the Sustainable Development Department submits the decisions to be implemented by the Divisions and functional departments to the Executive Committee.

The Sustainable Development Department is in charge of communicating the information required pursuant to 2017 laws transposing the European directive of 22 October 2014 relating to the publication of non-financial information and replacing the so-called "Grenelle 2" law, the purpose of which is to emphasize the Company's policies and commitment to social, environmental, societal, ethical and tax issues, as well as the progress achieved. This information is included in the Statement of Non-Financial Performance in this Registration Document.

The Sustainable Development Department is also directly responsible for environmental actions. It coordinates and leads the initiatives of those responsible for environmental matters in the Regions and business units. They are tasked with the particular duty of ensuring compliance with applicable laws and regulations on operations, and with improving environmental performance pursuant to Vallourec's Sustainable Development Charter and the Group's Environmental Policy, which in particular concerns water, waste, hazardous products, emissions and noise. Annual or bi-annual audits, depending on the importance of the sites, are conducted locally. An environmental performance report is published every quarter for the managers concerned. In 2016 the Group installed new a software application specifically for the management of environmental data and safety. This application now simplifies the collection and verification of data and offers new features to the sites that help them with their own local reporting.

The goal of achieving ISO 14001 certification for all production sites has been attained.

The Sustainable Development Department also supervises the energy performance improvement program conducted by the Process Communities, which has an objective of reducing specific consumption by 20% before 2020, based on 2008 production guidelines. It now appears that this objective will be surpassed in the context of the Group's new industrial footprint. To this end, the Sustainable Development Department adjusts practices and ensures that the operational entities invest in new energy-efficient, "eco-designed" equipment. These actions were also aimed at reducing greenhouse gas emissions.

Since 2013, numerous sites, including Barreiro, Jeceaba, Vallourec Deutschland, Vallourec Oil & Gas UK Ltd and Vallourec (China) Co., Ltd. (1) in China have obtained ISO 50001 certification for energy management. The Youngstown and Tianda sites should also be certified in the medium term.

(1) Formerly Vallourec (Changzhou) Co., Ltd.

Innovation, Research and Development

The Development and Innovation Department (D&I), which comprises product lines, the R&D centers, the Key Account Managers and the Innovation teams, established procedures at Group level concerning the management of new products, industrial processes and services, the project portfolio management for product lines, and the Group's idea generation process (Front-End Innovation). The defined processes and governance are consistently applied by the entities concerned. These procedures also incorporate aspects of intellectual property.

The product lines projects are undertaken according to various criteria, including their value for our customers, their technical feasibility, and the associated risks. The project committees review the risk analysis.

The selected projects benefit from specific training and assistance actions that are conducted by experienced professionals, to speed up the implementation and to reduce the time-to-market for solutions.

The product line innovation portfolios include ideas under investigation and projects under development. These portfolios are reviewed regularly for decision-making and prioritization of projects, based on the value and associated risks criteria.

Purchases

In 2018, the Purchasing Department pursued and consolidated its internal control continuous improvement process. This process occurs at the stage of the initial purchase (product specification, selection of suppliers and contracts) through processing (receipt of the necessary quantities at the price agreed to and under the determined delivery and payment conditions).

At the start of the process, the Purchasing Department centralizes the analysis of all purchases in order to have good visibility on the most strategic goods and services among the Group's purchases. It has set up a specific information system to ensure that visibility. On this basis, purchase strategies are determined in cooperation with internal customers and validated by management. Taking commercial practices into account, it focuses on precisely formalizing the contracts and orders to avoid later disputes.

In an effort to make competitive, high quality, and responsible purchases, suppliers are selected based on analytical matrices. These simultaneously consider the financial health of the suppliers, their level of social and environmental responsibility and, of course, the criteria of quality, lead times and overall cost.

At the end of the purchase process, and in addition to the control of supplier invoices, a quality control process is likewise conducted for the products or services that require it. Purchase orders, receiving controls and supplier payments are rigorously carried out by different entities.

A process is in place to systematically assess supplier risk. In addition, quarterly reviews are carried out to ensure that every effort is being made to minimize and then eliminate these risks.

In order to prevent any conflicts of interest and any unethical relations between the Purchasing Department and suppliers, every major purchase has to be approved by both the internal client and the Purchasing Department. This decision is made based on a comparative analysis of offers and suppliers.

The emphasis on formalizing procedures and educating buyers, mainly through e-learning, has also allowed the entire Purchasing Department to gain further knowledge on risk management and internal control.

Information systems

The multi-year audit plan for the information system security of the Group was renewed for the 2014-2018 period, and its scope was expanded to new regions, such as the Middle East.

In 2014, the Information Systems Department strengthened its capacity to detect attempts at intrusion by putting in place network observation and analysis mechanisms for all the Regions. In 2015, the mechanisms were extended in France to improve coverage of all sites.

A plan concerning industrial security, primarily that of the lower IT levels of the plants, which are close to production workshops, progressed in France.

The roll-out of a hard drive encryption solution for laptops continued.

A strengthened analysis system for messaging was established in addition to the classic measures.

The commissioning of the SAP application at Vallourec Star, LP and its roll-out at Vallourec Oil and Gas France was successfully completed.

A plan to harmonize financial reporting, and the adoption of a standard accounting plan for all of the Group's units, was executed and a software program to track and manage suppliers for Purchases was set up and centralized.

Actions to educate employees on protecting information and support for major projects related to risk management and internal control included:

- performance and follow-up of the action plan for an internal control campaign for all the Group's Regions;
- development of a Group IT Charter with the aim of strengthening users' best practices;
- pooling of CNIL (French data privacy agency) practices with the Legal Department;
- a training program on protecting information; and
- updating of the guidelines for IT security rules and procedures, which are published under the Group guidelines available on the intranet.

Human Resources

The Human Resources Department relies on an internal control process for all of its functioning: duties, training and talent management, the working environment, compliance with the Vallourec Group's internal regulations and the prevailing statutory and regulatory provisions, compensation management and the protection of private data and information in the social and human fields.

Within the context of talent management, the Human Resources Department identifies key positions in the Group, analyzes the risks of misconduct, and consequently prepares development and succession plans. Furthermore, Human Resources (HR) management ensures that there is an available group of people who have the necessary expertise and abilities to perform the duties with which they have been entrusted.

Various control activities relating to the Human Resources process are monitored in cooperation with the Group HR Director.

HR managers took part in training and workshops provided in 2018 in their reporting entity and within their function, taking responsibility, whenever necessary, for the improvement action plans that resulted from these sessions.

Commercial relations

With the aim of specifying and formalizing certain practices regarding contractual relations with its customers, Vallourec has developed a procedure for managing customer risk (limits regarding credit and delegation of authority, and credit insurance) and drawn up general sales terms to be applied by all Group entities, in order to make practices consistent throughout the Group and reduce risk exposure.

The procedures for reviewing contracts and candidates for invitations to tender were reviewed in 2012, in order to roll out a new tool to evaluate and summarize the legal risk associated with sales. The rolling out of this new tool improves the effective analysis of the legal conditions that apply to sales contracts signed by the Group's subsidiaries with their customers, and allows discrepancies in relation to the Group's standards to be precisely managed and related statistics to be recovered. The general conditions and standard documents are regularly updated in order to monitor changes in the market and regulations.

Furthermore, the Legal Department and the Risk Management Department work together closely. They provide monitoring in order to identify "best practices" for managing the contractual legal risk, with a view towards ongoing improvement.

Insurance

The main industrial risks are covered by two types of Group insurance:

- a general insurance policy (direct material damage to Group property, not subject to specific exclusions, as well as any resulting costs and consequential losses); and
- a third-party liability insurance policy (liability arising as a result of injury or loss caused to third parties during operations or after delivery or service).

5.2.3 Entities and persons involved in risk management and internal control

5.2.3.1 The Management Board

The Management Board, acting directly or by delegation, is responsible for the quality of the internal control systems and risk management. It designs and implements the internal control and risk management systems, which have been tailored to the Group, its activity and organization, and in particular defines relevant roles and responsibilities within the Group.

It conducts on-going oversight of internal control and risk management systems with the dual objective of preserving their integrity and improving them – in particular by adapting them to structural changes and the business environment. It initiates any corrective action necessary to correct issues that are identified and stays within the scope of the accepted risks. It ensures that these actions are properly conducted.

The Management Board makes sure that the appropriate information is communicated within the desired period of time to the Supervisory Board and Audit Committee.

5.2.3.2 The Supervisory Board

The Supervisory Board is informed of the basic characteristics of the internal control and risk management mechanisms selected and implemented by the Management Board to manage risks: the organization, roles and duties of the main players, the process, risk reporting structure and operational follow-up of the control mechanisms. It acquires an overall understanding of the procedures relating to the preparation and processing of the accounting and financial information.

The Supervisory Board sees to it that the major risks identified, which have been incurred by the Group, are addressed by its strategies and objectives, and that these major risks are taken into account in the Group's management.

In particular, the Supervisory Board verifies with the Management Board that the mechanism for managing the internal control and risk management systems is sufficient to ensure the reliability of the Group's financial information and provides a true and fair view of its results and financial position.

5.2.3.3 The Finance and Audit Committee

Pursuant to Article L. 823-19 of the French Commercial Code *(Code de commerce),* the Finance and Audit Committee is responsible for the following:

- monitoring the process of preparation of financial information;
- monitoring the effectiveness of the internal control and risk management systems as well as the internal audit system, regarding the procedures for the preparation and processing of accounting and financial information, without prejudice to its independence;
- issuing a recommendation to the Supervisory Board on the Statutory Auditors proposed for appointment by the Shareholders' Meeting;
- monitoring the Statutory Auditors in the completion of their assignment, particularly the statutory audit of the parent company and consolidated financial statements;
- ensuring compliance with the requirements for the independence of Statutory Auditors and taking the necessary steps to comply with the rules on capping audit fees for services other than certification of the financial statements; and
- approving the provision by the Statutory Auditors of services other than certifying the financial statements, where such services are not prohibited.

The Finance and Audit Committee ensures that the internal control and risk management systems are effectively monitored, based on the information that is communicated to it by the Management Board, or which it requests. It ensures there are internal control and risk management systems, and that they are used, and makes sure that the weaknesses identified are addressed by corrective actions. Conversely, it does not take part in implementing said systems.

In order to carry out its role of monitoring the effectiveness of the internal control and risk management systems, as well as the internal audit system, regarding the procedures for preparation and processing of accounting and financial information, the Finance and Audit Committee takes formal note of the results of the internal audit and external audit work conducted on these subjects, in order to ensure that if any problems are detected, appropriate action plans are put in place and thoroughly implemented.

5.2.3.4 Head of risk management and internal control

The Head of risk management and internal control ensures that the overall risk management process, as defined by the Management Board, is rolled out and implemented. To that end, it puts in place a structured, permanent and adaptable mechanism which aims to identify, analyze and address the main risks. It carries out the risk management system and provides methodological support to the Company's operational and functional departments. In 2014, Vallourec adopted a new "Internal Control" function which is shared with the Risk Management function. This allowed it to go from development to a sustainable structure in 2015, with the aim of strengthening the internal control culture within the Group. In 2016, training provided to all Group senior executives strengthened the internal control culture at Vallourec.

5.2.3.5 Internal Audit Department

The Group's Internal Audit Department is an independent and objective entity, which reports to a member of the Management Board. Its purpose is to handle all topics, without restriction.

The Internal Audit Department, whose duties, powers and responsibilities are formally set out in an internal audit policy, helps the Group achieve its objectives by evaluating the proper implementation of internal control and risk management mechanisms, using a systematic and methodical approach. It identifies the weaknesses of these mechanisms, issues proposals for corrective actions, and makes sure, until they are resolved, that the audit points noted are addressed with proper follow-up.

The Internal Audit Department may also participate in specific engagements, such as operations relating to business acquisitions or disposals, project assistance, or investigations.

In order to draft its annual audit plan, the Internal Audit Department takes into particular consideration the Group's risk mapping, as well as the requests of the Management Board and the Heads of Regions and functional departments. The purpose of the annual audit plan that is prepared using these methods is to audit all of the Group's entities, in which it directly or indirectly holds a majority interest, over a three- or four-year period.

At the end of each audit, the Internal Audit Department issues a report, which leads to recommendations, which are systematically followed up on. It simultaneously reports on its work and findings, as well as on the degree of progress of action plans, by presenting summaries to the Finance and Audit Committee on a semi-annual basis.

The Internal Audit Department is implementing an ongoing improvement process, which aims to improve the internal audit process, in particular by adapting the detailed work programs to the most significant risks. Given the climate of heightened cybercrime, a specific IT systems audit program was prepared in 2018, to be systematically deployed in 2019.

5.2.3.6 Employees

Each employee concerned and, in particular, the Heads of offices, Regions and functional departments have the necessary information to operate and oversee internal control and risk management systems, with regard to the responsibilities and objectives he/she has been assigned.

Vallourec's core values also include an ethical component in terms of conduct, the requirements of which are relayed by the Group's Code of Ethics, which applies to all levels of the Company.

5.2.4 Role of the Statutory Auditors

The Statutory Auditors formally examine the internal control and risk management mechanisms, relying on internal audit work to obtain a greater understanding and to formulate, completely independently, an opinion as to their effectiveness.

They certify the financial statements and, within this context, can identify during the fiscal year significant risks and major weaknesses in internal control which could have a significant impact on accounting and financial information.

They present their observations on the internal control procedures which relate to the preparation and treatment of the financial and accounting information, and attest to the preparation of other information required by law.

5.2.5 Limits on risk management and internal control

In contributing to the effectiveness of its operations, the efficient use of its resources and the control of risk, the Group's internal control and risk management system plays a key role in the management and supervision of the Group's various activities. However, like any system of control, it cannot guarantee that the Group's objectives will be achieved or that all risks, in particular, of error or fraud, will be totally eliminated or contained.

The Group's international profile requires complex processes at entities with different levels of maturity in terms of internal control, evolving in a variety of legal environments, and running different information systems. In this context, Vallourec faces risks related to internal control, which could lead to inaccurate and/or inappropriate transactions or operations being carried out. Vallourec could also be the victim of fraud (theft, embezzlement, etc.). However, Vallourec has developed a structured and formalized process to review its internal control on an on-going basis, as the developments of this report attest. This approach is based on a set of rules and procedures circulated to all subsidiaries. Reviews and regular audits are conducted to make sure they adhere to them. These rules and procedures are regularly updated to ensure they are in line with changes in Vallourec's processes. Vallourec's fundamental values also incorporate an ethical behavior component, the requirements of which are set out in the Group's Code of Ethics, effective since 2009 and widely circulated to all staff. It applies to all Company levels.

5.3 Insurance policy

The Group's policy regarding protection against risks of accident is based on taking out insurance policies, supplemented with an operational program of developing, rolling out and managing preventative measures. This policy is coordinated by the Human Resources Department for the life sector (life insurance, mutual health cover), and by the Risk Management and Insurance Department for the safety of individuals, and for all other aspects.

Industrial risks insured within the Vallourec Group are covered by two main types of insurance taken out with first-rate insurers:

- insurance for property damage;
- civil liability insurance.

The Group's policy with regard to establishing insurance coverage for industrial risks is designed to achieve the following objectives:

- to take out shared insurance policies to ensure, firstly, the consistency of transferred risks and insurance coverage purchased and, secondly, to leverage economies of scale, while taking into account the specific characteristics of the Group's different businesses and contractual or legal constraints;
- to optimize thresholds and means of action in the insurance or reinsurance markets by appropriate deductibles.

The Group's insurance policy consists of defining the overall insurance coverage policy for the Group's activities, using the analysis of the requirements of the subsidiaries to select adequate insurance solutions, with the help of external providers (brokers, consultants, insurers), and to decide whether to maintain the financial consequences of such events within the Group or transfer them to the insurance market.

Implementation of the insurance risk coverage policy takes into particular account the insurability of the risks linked to the Group's activities, the available capacities in the insurance and reinsurance markets, the premiums proposed in light of the coverage offered, and exclusions, limits, and sublimits and deductibles.

The basic principles of Vallourec's insurance policy consist of:

- pursuing an active policy of prevention and protection for industrial sites, aimed at reducing the frequency and scale of accidental risks of fire or explosion, as well as detecting other exposures to natural or environmental disasters. To date, more than 90% of the insured values were included in at least one multi-risk audit by the insurers' loss prevention engineers, under the framework of a plan to conduct annual visits to the Group's major industrial sites;
- an active policy for the prevention of contractual risks was established, in particular through the nearly systematic use of the CLEAR formula, which primarily aims to control contractual liability clauses that could have a potential financial impact on the Group's results;
- organizing a mechanism for distributing casualty premiums according to the subsidiary scoring criteria established by the insurer with a system of awarding a bonus/malus depending on the score, in an effort to encourage subsidiaries to fine-tune their objectives for preventing damage from fire/equipment breakdowns; and
- communicating detailed information on the Company to the insurance and reinsurance markets.

The Group takes out global insurance coverage for all its subsidiaries for third party liability and physical loss. The primary insurance contracts that cover all Regions and/or central Departments are detailed below.

5.3.1 Insurance for property damage and business interruption

This insurance covers all direct physical loss to the Group's insured property, not subject to exclusions, as well as any costs and consequential losses.

Deductibles applied to physical loss range from €100,000 to €1,000,000 per claim, according to the severity of the risk concerned.

Insurance for operating losses and supplementary operating expenses is taken out on a case-by-case basis according to each risk analysis, taking into account the existing emergency plans (PCAs).

5.3.2 Civil liability insurance

5.3.2.1 General civil liability insurance

This insurance covers the Group for any liability arising as a result of damage caused to third parties, either resulting from the Group's operations or after delivery of goods or services, as well as for professional civil liability.

The indemnity also includes a limit on liability.

In respect of both property and civil liability insurance, contracts are split between a main Group contract and local contracts integrated into the main contract. The Group contract prevails where terms or limits differ from those of local contracts issued by the partners of the lead insurer.

The insured cap for third-party civil liability and products was raised in 2011, 2012, 2014, and 2018 to take account of the increased size of the Group and the prevailing levels of compensation on the market in this area.

5.3.2.2 Assistance-repatriation insurance

An assistance-repatriation insurance policy for employees seconded abroad (travelers, personnel under a site contract (rotators) and expatriates) covers all Vallourec Group subsidiaries.

5.3.2.3 Civil liability of corporate officers

The Group has taken out liability insurance covering corporate officers against the risk of claims made against them that could result in them being held personally, jointly and severally liable for loss suffered by third parties and which could be attributed to a real or alleged professional error committed by them during performance of their duties.

5.3.3 Insurance policy

The insurance policy described above gives a picture of the Group's situation for prior periods at a given moment in time and cannot be considered representative of a permanent situation. The Group's policy with regard to insurance may change at any time according to market conditions, specific opportunities and the Management Board's assessment of the risks incurred and the adequacy of insurance coverage. The Group cannot guarantee that it will not suffer an uninsured loss.

Assets, financial position and results

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6.1 Consolidated financial statements

6.1.1 Vallourec Group's statement of financial position

In € thousand	Notes	31/12/2017	31/12/2018
NON-CURRENT ASSETS			
Net intangible assets	*1*	88,695	71,277
Goodwill	*1*	348,200	358,416
Gross property, plant and equipment	*2.1*	5,734,621	5,608,306
Less: accumulated amortization and depreciation	*2.1*	(2,757,732)	(2,917,667)
Net property, plant and equipment	*2.1*	2,976,889	2,690,639
Biological assets	*2.2*	71,494	59,611
Equity affiliates	*3*	101,529	134,358
Other non-current assets	*4*	137,163	156,100
Deferred taxes – assets	*5*	242,440	250,215
Total		**3,966,410**	**3,720,616**
CURRENT ASSETS			
Inventories and work in progress	*6*	1,003,833	1,135,017
Trade and other receivables	*7*	567,923	598,558
Derivatives – assets	*8*	32,451	3,347
Other current assets	*9*	230,612	215,931
Cash and cash equivalents	*10*	1,021,035	739,576
Total		**2,855,854**	**2,692,429**
Assets held for sale and discontinued operations	*11*	64,119	-
TOTAL ASSETS		**6,886,383**	**6,413,045**

In € thousand	Notes	31/12/2017	31/12/2018
EQUITY	*13*		
Capital		915,976	915,976
Additional paid-in capital		1,417,897	1,417,897
Consolidated reserves		1,190,448	630,674
Reserves, financial instruments		6,694	(9,342)
Foreign currency translation reserve		(564,461)	(648,459)
Net income for the period		(536,691)	(502,455)
Treasury shares		(3,833)	(2,034)
Equity – Group share		**2,426,030**	**1,802,257**
Non-controlling interests	*15*	**458,545**	**462,019**
Total equity		**2,884,575**	**2,264,276**
Shareholder loan	*22*	71,702	28,892
NON-CURRENT LIABILITIES			
Bank loans and other borrowings	*16*	1,817,119	1,796,637
Employee benefit commitments	*19*	208,565	214,359
Provisions	*17*	50,552	40,578
Deferred taxes – liabilities	*5*	18,284	15,313
Other long-term liabilities	*18*	10,571	9,217
Total		**2,105,091**	**2,076,104**
CURRENT LIABILITIES			
Provisions	*17*	148,799	136,298
Overdrafts and other short-term borrowings	*16*	746,220	1,000,872
Trade payables		581,622	582,272
Derivatives – liabilities	*8*	12,894	31,831
Tax liabilities		16,945	29,919
Other current liabilities	*20*	305,881	262,581
Total		**1,812,361**	**2,043,773**
Liabilities held for sale and discontinued operations	*11*	12,654	-
TOTAL EQUITY AND LIABILITIES		**6,886,383**	**6,413,045**

6.1.2 Consolidated income statement

In € thousand	Notes	2017	2018
Revenue	*23*	**3,749,641**	**3,920,677**
Cost of sales [(a)]	*24*	(3,297,148)	(3,342,399)
Administrative, sales and research costs [(a)]	*25*	(439,587)	(404,929)
Others	*26*	(10,676)	(23,094)
EBITDA		**2,230**	**150,255**
Depreciation of industrial assets	*28*	(297,020)	(265,653)
Other depreciation and amortization	*28*	(44,457)	(34,136)
Impairment of assets and goodwill	*29*	(65,105)	(53,249)
Asset disposals, restructuring costs and non-recurring items	*29*	(79,236)	(74,356)
Operating income (loss)		**(483,588)**	**(277,139)**
Financial income		26,007	14,289
Interest expenses		(155,129)	(189,490)
Net interest expenses		(129,122)	(175,201)
Other financial income and expenses		(32,010)	(34,353)
Other discounting expenses		(12,451)	(10,077)
Financial income/(loss)	*30*	**(173,583)**	**(219,631)**
Pre-tax income (loss)		**(657,171)**	**(496,770)**
Income tax	*31*	100,615	(4,917)
Share in net income/(loss) of equity affiliates	*33*	(3,173)	1,320
Net income/(loss) from continuing operations		**(559,729)**	**(500,367)**
Net income/(loss) for the consolidated entity		**(559,729)**	**(500,367)**
Attributable to non-controlling interests		(23,038)	2,088
Group share		**(536,691)**	**(502,455)**
Group share:			
Net earnings per share	*14*	(1.2)	(1.1)
Diluted earnings per share	*14*	(1.2)	(1.1)

(a) Before depreciation and amortization.

6.1.3 Statement of comprehensive income

In € thousand	2017	2018
Net income/(loss) for the consolidated entity	**(559,729)**	**(500,367)**
Other comprehensive income:		
Actuarial gains and losses on post-employment benefits	12,738	(19,887)
Tax attributable to actuarial gains and losses on post-employment benefits	(2,443)	1,559
Items that will not be reclassified to profit or loss	**10,295**	**(18,328)**
Exchange differences on translating net assets of foreign entities	(452,178)	(86,168)
Change in fair value of hedging financial instruments	29,716	(14,628)
Change in fair value of available-for-sale securities	8,665	-
Tax attributable to the change in fair value of hedging financial instruments	1,836	(1,218)
Tax attributable to the change in fair value of available-for-sale securities	-	-
Items that may be reclassified subsequently to profit or loss	**(411,961)**	**(102,014)**
Other comprehensive income/(loss) (net of tax)	**(401,666)**	**(120,342)**
Total comprehensive income/(loss)	**(961,395)**	**(620,709)**
Attributable to non-controlling interests	(88,539)	498
Group share	**(872,856)**	**(621,207)**

6.1.4 Statement of changes in equity, Group share

In € thousand	Capital	Additional paid-in capital	Consolidated reserves	Foreign currency translation reserve	Reserves – changes in fair value of financial instruments – net of tax	Treasury shares	Net income or loss for the period	Total equity, Group share	Total non-controlling interests	Total equity
POSITION AS AT 31 DECEMBER 2016	**902,476**	**1,404,786**	**1,993,343**	**(176,574)**	**(33,482)**	**(49,003)**	**(758,016)**	**3,283,530**	**494,432**	**3,777,962**
Change in foreign currency translation reserve	-	-	-	(387,388)	-	-	-	(387,388)	(64,790)	(452,178)
Financial instruments	-	-	-	-	31,947	-	-	31,947	(395)	31,552
Actuarial gains and losses on retirement commitments	-	-	10,611		-	-	-	10,611	(316)	10,295
Available-for-sale financial assets	-	-	-	-	8,665	-	-	8,665	-	8,665
Other comprehensive income (loss)	-	-	*10,611*	*(387,388)*	*40,612*	-	-	*(336,165)*	*(65,501)*	*(401,666)*
2017 net income/(loss)							**(536,691)**	**(536,691)**	**(23,038)**	**(559,729)**
Comprehensive Income	-	-	*10,611*	*(387,388)*	*40,612*	-	*(536,691)*	*(872,856)*	*(88,539)*	*(961,395)*
Appropriation of 2016 net income/(loss)	-	-	(758,016)	-	-	-	758,016	-	-	-
Change in share capital and additional paid-in capital	13,500	13,111	-	-	-	-	-	26,611	-	26,611
Change in treasury shares	-	-	(34,222)	-	-	45,170	-	10,948	-	10,948
Dividends paid			-	-	-	-	-	-	(262)	(262)
Share-based payments	-	-	10,571	-	-	-	-	10,571	-	10,571
Changes in consolidation scope and other (see Note 16)	-	-	(31,839)	(499)	(436)	-	-	(32,774)	52,914	20,140
POSITION AS AT 31 DECEMBER 2017	**915,976**	**1,417,897**	**1,190,448**	**(564,461)**	**6,694**	**(3,833)**	**(536,691)**	**2,426,030**	**458,545**	**2,884,575**
Change in foreign currency translation reserve	-	-	-	(84,110)	-	-	-	(84,110)	(2,058)	(86,168)
Financial instruments	-	-	-	-	(16,279)	-	-	(16,279)	433	(15,846)
Actuarial gains and losses on retirement commitments	-	-	(18,363)		-	-	-	(18,363)	35	(18,328)
Available-for-sale financial assets	-	-	-	-	-	-	-	-	-	-
Other comprehensive income (loss)	-	-	*(18,363)*	*(84,110)*	*(16,279)*	-	-	*(118,752)*	*(1,590)*	*(120,342)*
2018 net income/(loss)							**(502,455)**	**(502,455)**	**2,088**	**(500,367)**
Comprehensive Income	-	-	*(18,363)*	*(84,110)*	*(16,279)*	-	*(502,455)*	*(621,207)*	*498*	*(620,709)*
Appropriation of 2017 net income/(loss)	-	-	(536,691)	-	-	-	536,691	-	-	-
Change in share capital and additional paid-in capital	-	-	-	-	-	-	-	-	-	-
Change in treasury shares	-	-	(1,799)	-	-	1,799	-	-	-	-
Dividends paid			-	-	-	-	-	-	(266)	(266)
Share-based payments	-	-	(155)	-	-	-	-	(155)	-	(155)
Changes in consolidation scope and other (see Note 16)	-	-	(2,766)	112	243	-	-	(2,411)	3,242	831
POSITION AS AT 31 DECEMBER 2018	**915,976**	**1,417,897**	**630,674**	**(648,459)**	**(9,342)**	**(2,034)**	**(502,455)**	**1,802,257**	**462,019**	**2,264,276**

6.1.5 Statement of changes in non-controlling interests

In € thousand	Consolidated reserves	Foreign currency translation reserve	Reserves – changes in fair value of financial instruments – net of tax	Net income or loss for the period	Non-controlling interests
POSITION AS AT 31 DECEMBER 2016	**449,922**	**93,070**	**970**	**(49,530)**	**494,432**
Change in foreign currency translation reserve	-	(64,790)	-	-	(64,790)
Financial instruments	-	-	(395)	-	(395)
Actuarial gains and losses on retirement commitments	(316)	-	-	-	(316)
Available-for-sale financial assets	-	-	-	-	-
Other comprehensive income (loss)	*(316)*	*(64,790)*	*(395)*	*-*	*(65,501)*
2017 net income/(loss)	**-**	**-**	**-**	**(23,038)**	**(23,038)**
Comprehensive Income	*(316)*	*(64,790)*	*(395)*	*(23,038)*	*(88,539)*
Appropriation of 2016 net income/(loss)	(49,530)	-	-	49,530	-
Dividends paid	(262)	-	-	-	(262)
Changes in scope and other	53,888	(997)	23	-	52,914
POSITION AS AT 31 DECEMBER 2017	**453,702**	**27,283**	**598**	**(23,038)**	**458,545**
Change in foreign currency translation reserve	-	(2,058)	-	-	(2,058)
Financial instruments	-	-	433	-	433
Actuarial gains and losses on retirement commitments	35	-	-	-	35
Available-for-sale financial assets	-	-	-	-	-
Other comprehensive income (loss)	*35*	*(2,058)*	*433*	*-*	*(1,590)*
2018 net income/(loss)	**-**	**-**	**-**	**2,088**	**2,088**
Comprehensive Income	*35*	*(2,058)*	*433*	*2,088*	*498*
Appropriation of 2017 net income/(loss)	(23,038)	-	-	23,038	-
Dividends paid	(266)	-	-	-	(266)
Changes in scope and other	3,593	(351)	-	-	3,242
POSITION AS AT 31 DECEMBER 2018	**434,026**	**24,874**	**1,031**	**2,088**	**462,019**

6.1.6 Cash Flow Statement

In € thousand	Notes	2017	2018
Consolidated net income (including non-controlling interests)		**(559,729)**	**(500,367)**
Net amortization, depreciation and provisions		319,814	280,577
Unrealized gains and losses linked to changes in fair value		18,509	18,516
Income and expenses linked to share options and equivalent		10,571	(155)
Capital gains and losses on disposals		17,668	18,285
Share of net income from equity associates	*3*	3,173	(1,320)
Dividends reclassified as other flows linked to investing activities		(1,726)	(564)
Cash flow from operating activities after net financial cost and taxes		**(191,720)**	**(185,028)**
Net financial cost	*30*	129,122	175,201
Tax expense (including deferred taxes)	*31*	(100,615)	4,917
Cash flow from operating activities before net financial cost and taxes		**(163,213)**	**(4,910)**
Interest paid		(155,129)	(189,490)
Tax paid		(40,063)	(29,932)
Interest received		25,995	14,301
Cash-flow from operating activities		**(332,410)**	**(210,031)**
Change in operating working capital requirements	*12*	60,555	(155,203)
Net cash flow from operating activities (1)		**(271,855)**	**(365,234)**
Cash outflows for acquisitions of property, plant and equipment and intangible assets	*2.1*	(145,343)	(123,012)
Cash outflows for acquisitions of biological assets	*2.1*	(6,184)	(6,209)
Cash inflows from disposals of property, plant and equipment and intangible assets		1,404	12,343
Impact of acquisitions (changes in consolidation scope)		(1,253)	(5,816)
Cash from subsidiaries acquired (changes in consolidation scope)		-	-
Impact of disposals (changes in consolidation scope)		(17,914)	38,227
Cash from subsidiaries sold (changes in consolidation scope)		(1,193)	-
Other cash flows from investing activities		75,384	(11,022)
Impact of reclassification to assets held for sale and discontinued operations		-	-
Net cash flow from (used in) investing activities (2)		**(95,099)**	**(95,489)**
Repayment of shareholder loan	*22*	-	(41,029)
Increase or decrease in equity		26,611	-
Dividends paid during the year			
• Dividends paid in cash to shareholders in the parent company		-	-
• Dividends paid to non-controlling interests		(262)	(266)
Movements in treasury shares		10,948	-
Proceeds drawn from new borrowings	*12*	926,758	1,345,971
Repayments of borrowings	*12*	(825,043)	(1,081,420)
Change in percentage interest in controlled companies		-	-
Other cash flows from financing activities		(8,730)	(3,760)
Cash flow from financing activities (3)		**130,282**	**219,496**
Impact of changes in exchange rates (4)		**(30,119)**	**(32,047)**
CHANGE IN CASH (1) + (2) + (3) + (4)		**(266,791)**	**(273,274)**
Opening net cash		**1,277,114**	**1,010,323**
Closing net cash		**1,010,323**	**737,049**
Change		(266,791)	(273,274)

Net cash represents cash and cash equivalents less bank overdrafts with an initial maturity of less than three months.

Statement of changes in net debt in 2018

In € thousand	Notes	31/12/2017	Change	31/12/2018
Gross cash (1)	*10*	1,021,035	(281,459)	739,576
Bank current accounts in debit and overdrafts (2)	*16*	10,712	(8,185)	2,527
CASH (3) = (1) - (2)		**1,010,323**	**(273,274)**	**737,049**
Gross financial debt (4)	*16*	2,552,627	242,355	2,794,982
Net financial debt = (4) - (3)		**1,542,304**	**515,629**	**2,057,933**

Statement of changes in net debt in 2017

In € thousand	Notes	31/12/2016	Change	31/12/2017
Gross cash (1)	*10*	1,286,722	(265,687)	1,021,035
Bank current accounts in debit and overdrafts (2)	*16*	9,608	1,104	10,712
CASH (3) = (1) - (2)		**1,277,114**	**(266,791)**	**1,010,323**
Gross financial debt (4)	*16*	2,564,136	(11,509)	2,552,627
Net financial debt = (4) - (3)		**1,287,022**	**255,282**	**1,542,304**

6.1.7 Notes to the consolidated financial statements for the year ended 31 December 2018

In € thousand (€k) unless stated otherwise.

A – Consolidation principles

1. Basis of preparation and presentation of the financial statements

The consolidated financial statements for the year ended 31 December 2018, including the related notes to the consolidated financial statements, were approved by Vallourec's Management Board on 19 February 2019 and will be submitted for approval at the Shareholders' Meeting.

Pursuant to EC Regulation No. 1606/2002 adopted on 19 July 2002 for all listed companies in the European Union, Vallourec has prepared its consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union, using the standards and interpretations applicable as at 31 December 2018. These financial statements are available on the Company's website: www.vallourec.com.

The IFRS framework covers the IFRS standards issued by the International Accounting Standards Board (IASB), as well as the International Accounting Standards (IAS) and their interpretations as issued by the Standing Interpretations Committee (SIC) and the International Financial Reporting Interpretations Committee (IFRIC).

The accounting principles and measurement methods have been applied consistently to the periods presented, with the exception the changes to standards presented below:

NEW MANDATORY STANDARDS TO BE APPLIED STARTING ON 1 JANUARY 2018

IFRS 15 – Revenue from Contracts with Customers

IFRS 15 introduces a new model for recording revenue from ordinary activities for customer contracts and replaces IAS 11, IAS 18 and the associated IFRIC and SIC interpretations. The Group has chosen to apply this standard according to the retrospective method.

The Group's main categories of sales contracts include:

- revenue from tube sales recorded at the time of transferring control in application of the contractual incoterms; and
- revenue from services recorded during provision of services and in the event of long-term contracts according to progress, based on the costs incurred.

Application of this new standard has not had any impact on the Group's equity as at 1 January 2018, or on its recording of revenue.

IFRS 9 – Financial Instruments

IFRS 9 replaces IAS 39 on financial instruments and notably introduces changes concerning classification of financial assets, the impairment model and hedge accounting. Application of this new standard has not had any significant impact on the Group's financial statements. As permitted by the standard, the Group has chosen not to restate its comparative figures.

Other texts with no impact on the Group's accounts

Furthermore, the following texts have no impact on the Group's accounts:

- IFRIC 22 specifying that the advances paid or received in currencies that are non-monetary in nature must be recorded at the daily price, without subsequent restatement;
- Amendments to IFRS 2 – Share-Based Payment relating to the "Classification and measurement of share-based payment transactions";
- Amendments to IFRS 4 – Insurance Contracts relating to the application of IFRS 9 – Financial Instruments and IFRS 4 – Insurance Contracts.

NEW STANDARDS NOT APPLIED EARLY

IFRS 16 – Leases

The IASB issued IFRS 16 – Leases, which introduces a new accounting model for lease agreements and which will be mandatory as of 1 January 2019. This standard requires that lessees record, for contracts eligible for the standard, all of the rent remaining payable in the form of a right-of-use and a lease liability.

The Group has used the simplified retrospective method and will restate all of its eligible leases with the exception of the exemptions allowed by the standard on:

- short-term leases (term of less than 12 months);
- contracts for which the underlying asset is of low value (unit value when new that is less than USD 5,000);
- leases of an intangible asset.

The Group conducted a simulated application of the standard on its 2019 financial statements, based on an inventory of leases in late 2018, restating the amounts still payable as at 1 January 2019.

The lease assets are primarily real property and industrial equipment used to manufacture and transport products. The estimated impact on the opening statement of financial position as at 1 January 2019 is an estimated increase of between €80 and €100 million in property, plant and equipment, with the corresponding recording of a lease liability. The difference between the impact on the lease liability and the amount of minimum future payments for the simple lease agreements mentioned under Note 34 primarily corresponds to the discounting of payments.

The application of the new IFRS 16 standard will not have an impact on the indebtedness ratio according to the definition of the current banking covenants, the latter excluding the impact linked to the application of IFRS 16 from the calculation of the covenants ("banking covenant").

The Group has not opted for early application of any other standards or interpretations that will be mandatory for fiscal years beginning on or after 1 January 2019.

IFRIC 23 – Uncertainty over Income Tax Treatments

IFRIC 23 – Uncertainty over Income Tax Treatments adopted 23 October 2018 by the European Union shall apply as from 1 January 2019. It specifies that the provisions of IAS 12 – Income Taxes shall apply as concerns the recording and measurement of tax, when there is a tax uncertainty. The implementation of IFRIC 23 should not have any material impact on the Group.

2. Accounting principles and methods

2.1 GENERAL MEASUREMENT PRINCIPLES

The Group's consolidated financial statements are prepared using the historical cost convention, except for biological assets, derivative financial instruments that are measured at fair value, as well as financial assets measured at fair value through profit and loss or equity (see paragraph 2.16).

2.2 USE OF ESTIMATES AND JUDGMENTS

The preparation of the financial statements under IFRS leads Vallourec's management to use estimates and formulate assumptions that affect the carrying amount of certain assets and liabilities, income and expenses, and some of the information in the notes to the financial statements.

Such assumptions are inherently uncertain, and actual results could differ from these estimates. The Group regularly reviews its estimates and assumptions in order to take into account past experience and any factors deemed relevant in prevailing economic conditions. In the current economic climate (uncertainty about economic changes, a highly competitive international environment and volatility in costs of raw materials and energy), the uncertain nature of some estimates may be more pronounced.

Accounts and information subject to significant estimates include the measurement of the following items:

- the recoverable value of goodwill, intangible assets and property, plant and equipment (see A paragraphs 2.9, and C Note 1 and Note 2);
- financial instruments (see A paragraph 2.16.1 and C Note 8);
- inventories and work in progress (see A paragraph 2.10 and C Note 6);
- provisions (see A paragraph 2.12 and C Note 17);
- assets held for sale and discontinued operations (see A paragraph 2.11 and C Note 11); and
- tax loss carryforwards recognized in deferred tax assets (see A paragraph 2.17 and C Note 5).

The Group must use assumptions and judgments to evaluate the level of control in certain shareholdings, notably to define relevant activities and identify substantive rights, as well as the type of joint arrangement in question for a jointly controlled business. These judgments are revised if facts and circumstances change.

2.3 CONSOLIDATION OF SUBSIDIARIES

The consolidated financial statements include the financial statements of Vallourec and its subsidiaries for the period from 1 January to 31 December 2018.

2.3.1 Controlled entities

Subsidiaries are fully consolidated from the date of acquisition. They cease to be consolidated when control is transferred outside the Group.

Definition

There is control when the Group (i) holds power over an entity, (ii) is exposed to or is entitled to variable returns due to its connections with the entity and (iii) has the capacity to exercise its power over the entity so as to influence the amount of the returns it obtains.

Accounting method

The consolidated financial statements include all of the assets, liabilities and comprehensive income of the subsidiary.

Non-controlling interests represent the share of interest which is not directly or indirectly attributable to the Group. The results and all other components of other items of comprehensive income are divided between the Group and non-controlling interests. The comprehensive income of the subsidiaries is divided between the Group and the non-controlling interests, including when this distribution results in allocating a loss to the non-controlling interests.

Changes in the percent interest in subsidiaries that do not result in a change of control are considered transactions impacting equity, as they are transactions that are performed with shareholders acting in this capacity.

The effects of these transactions are recorded in equity for the net tax amount and thus do not have an impact on the Group's consolidated income statement.

These transactions are moreover presented in the cash flow statement under financing or investment operations, as applicable.

The results of acquired companies are included in the income statement from their effective acquisition dates. The results of companies sold are included until the date control ceases.

Cash flows on the income statement and statement of financial position relating to intra-Group commercial and financial transactions are eliminated.

2.3.2 Consolidation of joint operations

Definition

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have direct rights to the assets, and obligations for the liabilities relating to the arrangement.

Joint operations

The Group, as a co-participant in a joint operation, records the following items as concerns its interests in the joint operation:

- its assets, including its share of the assets that are jointly held, where applicable;
- its liabilities, including its share of the liabilities that are jointly held, where applicable;
- the income it has drawn from the sale of its share of the production generated by the joint operation;
- the expenses it has incurred, including its share of the expenses jointly incurred, where applicable.

The consolidated financial statements include, line-by-line, the representative portion of the Group's interests in each item of the assets, liabilities and comprehensive income, established in compliance with IFRS.

2.3.3 Interests in joint ventures and associates

Definition

Associates are companies in which the Group exercises significant influence over operating and financial policies without having control.

A joint venture is a joint arrangement whereby the parties that have joint control of the entity have rights to its net assets.

The Group's investments in joint ventures and associates are accounted for using the equity method.

Equity Associates

The equity method provides for an investment in an associate being initially recorded at cost, and then subsequently adjusted for the change in the Group's share in the income and other comprehensive income of the associate.

An investment is recorded under the equity method as of the date when the entity becomes an associate or joint venture. When an associate or joint venture is acquired, the difference between the cost of the investment and the Group share in the net fair value of the identifiable assets and liabilities of the entity is recorded under goodwill. In the event that the net fair value of the identifiable assets and liabilities of the entity is higher than the cost of the investment, the difference is recorded under income.

Shares in the net income of associates are incorporated in the net income of the activities pursued, whether or not their activities are an extension of the Group's activities.

Impairment testing

In the event of impairment, the total book value of the investment (including goodwill) undergoes impairment testing according to the provisions prescribed by IAS 36 – Impairment of Assets.

2.3.4 Change of control

Loss of significant influence or joint control

When the investment no longer constitutes an associate, the equity method is no longer applied. Any retained interest in the former associate that constitutes a financial asset is measured at fair value on the date the interest ceases to be an associate or joint venture.

Acquisition of a joint operation or equity-accounted company

Pursuant to IFRS 3, the previously held equity interests are remeasured at fair value, giving rise to gains and losses on disposals ("Assets disposals, restructuring costs and non-recurring items"), and the assets acquired and liabilities assumed are accounted for at fair value as at the acquisition date.

2.4 FOREIGN CURRENCY TRANSLATION

2.4.1 Translation of subsidiaries' foreign currency financial statements

The presentation currency of the consolidated financial statements is the euro.

Assets and liabilities of foreign subsidiaries, including goodwill, are translated at the official exchange rates on the reporting date. The income statements of foreign subsidiaries are translated at the average exchange rate for the period.

The ensuing translation differences are recorded in equity. The Group's share of such differences is recorded on the separate line, "Foreign currency translation reserve".

2.4.2 Translation of foreign currency transactions

Foreign currency transactions are translated into the Company's functional currency. When the transaction is subject to a hedge (see paragraph 2.16.4), it is translated at the spot rate on the day the hedging instrument is set up. In the absence of a hedge, foreign currency transactions are translated at the prevailing exchange rates on the transaction date.

Monetary assets and liabilities denominated in foreign currencies are translated at the closing exchange rates prevailing on that date. Translation differences resulting from differences between these rates and the rates at which the transactions were initially recorded are included in financial income or loss.

2.5 PROPERTY, PLANT AND EQUIPMENT AND BIOLOGICAL ASSETS

2.5.1 Measurement at cost net of depreciation and impairment

Except when acquired as part of a business combination, property, plant and equipment are recorded at their acquisition or production cost. They are not subject to remeasurement. At each reporting date, the acquisition cost is reduced by accumulated depreciation and any provisions for impairment determined in accordance with IAS 36 – Impairment of Assets (see paragraph 2.9).

2.5.2 Component approach

The main components of an asset having a useful life different from that of the main asset (furnaces, heavy industrial equipment, etc.) are identified by the technical departments and depreciated over their own useful lives.

Subsequent expenditure on replacement of the component (i.e. the cost of the new component) is capitalized, provided that future economic benefits are still expected to be derived from the main asset.

The component approach is also applied to expenditure on major overhauls that are planned and carried out at intervals of over one year. Such expenditure is identified as a component of the asset's acquisition price, and is depreciated over the period between two overhauls.

2.5.3 Maintenance and repair costs

Recurring maintenance and repair costs that do not meet the criteria for the component approach are expensed when they are incurred.

2.5.4 Amortization and depreciation

Depreciation of property, plant and equipment is calculated on a straight-line basis over the useful lives summarized below. Land is not depreciated.

Main categories of property, plant and equipment	Straight-line depreciation Useful life
Buildings	
Buildings	30-40
Fixtures and fittings	10
Technical plant, equipment and tools	
Industrial plant	20-25
Other (automated equipment, etc.)	5-10
Other tangible assets	
Transportation equipment and office furniture	5-10
Computer equipment	3

Depreciation of new industrial sites in the development stage is calculated according to the production-units method for assets used directly in the production process, and the straight-line depreciation method for other assets.

2.5.5 Property, plant and equipment acquired as part of a business combination

Property, plant and equipment acquired as part of a business combination are measured at fair value on the acquisition date. They are depreciated using the straight-line method over the remaining useful life at the acquisition date.

2.5.6 Biological assets

The Group owns biological assets in Brazil, which mainly consist of eucalyptus plantations cultivated for the Group's coke requirements. They are valued according to the principles defined by IAS 41 – Agriculture. The existence of an active market in Brazil requires the Group to measure these assets at fair value less selling costs upon initial recognition and at each reporting date.

2.6 LEASES

Assets financed by finance leases, which transfer almost all of the risks and rewards of ownership to the Group, are capitalized on the statement of financial position at the lesser of the fair value of the leased property or the present value of the minimum lease payments. The corresponding liability is recorded under financial liabilities.

Lease payments are split between interest expense and amortization of the obligation so as to obtain a constant interest rate on the balance of the loan liability.

Assets leased under finance leases are depreciated over their useful life in accordance with Group rules (see paragraph 2.5) or the lease term, whichever is shorter.

Leases under which the lessor retains almost all of the risks and rewards of ownership are operating leases. Payments on operating leases are expensed on a straight-line basis over the term of the contract.

2.7 GOODWILL

The Group measures goodwill as the surplus of:

- the total of:
  - the fair value of the consideration transferred,
  - the amount of any non-controlling interests in the acquired entity,
  - in the case of a step acquisition, the fair value at the acquisition date of the acquirer's previously held interest in the acquiree; and
- the net fair value at the acquisition date of the identifiable assets acquired and liabilities assumed.

For major acquisitions, fair value measurements are done with the help of independent experts.

The decision to apply the partial or total goodwill method is made separately for each business combination.

Pursuant to IAS 36 – Impairment of Assets, they are tested for impairment at least once a year, or more frequently if there is an indication of impairment. The testing procedures are designed to ensure that the recoverable amount of the cash-generating unit to which the goodwill is assigned or allocated is at least equal to its net carrying amount (see paragraph 2.9 – "Impairment of property, plant and equipment and intangible assets"). If an impairment loss is recognized, an irreversible provision is recorded in operating profit under "Impairment of assets and goodwill".

Pursuant to IFRS 3 and IAS 10.22, the Group recognizes in equity the difference between the price paid and the share of non-controlling shareholders acquired or sold in controlled companies.

Acquisition costs incurred by the Group in carrying out the business combination, such as referral agents' commissions, legal and due diligence fees and other professional or consultancy fees, are expensed when they are incurred.

2.8 INTANGIBLE ASSETS

2.8.1 Research and development costs

In accordance with IAS 38 – Intangible Assets, research costs are expensed and development costs are capitalized as intangible assets if the Company can show:

- its intention, and its financial and technical capability, to bring the development project to completion;
- that it is probable that the future economic benefits attributable to the development expenditure will flow to the Company;
- its ability to reliably measure the cost of the intangible asset during its development phase;
- its ability to use or sell the intangible asset.

Significant R&D projects are reviewed based on information available from the corporate departments coordinating the research in order to identify and analyze any current projects that have entered the development phase, as defined under IAS 38.

The Group's development projects to design new or improved products and manufacturing processes, particularly in its oil and energy-related activities, are already at a very advanced stage before they qualify for capitalization as assets under IAS 38 criteria. It is very difficult to show the existence of long-term additional future economic benefits that can be clearly distinguished from the normal costs of maintaining and upgrading production plants and products to preserve the Group's technological and competitive edge. As a result, in 2018 as in 2017, no costs incurred on major projects were identified that met the standard's criteria.

2.8.2 Other intangible assets

Intangible assets acquired separately are recognized at cost. They are mainly patents and trademarks, which are amortized on a straight-line basis over their useful lives.

Intangible assets acquired as part of a business combination are recorded separately from goodwill if their fair value can be measured during the acquisition phase. Those with a finite life are amortized over their estimated useful lives for the Company.

Greenhouse gas emission allowances received free of charge are recognized at nil value (in accordance with IAS 20). A provision is recognized when allowances granted by the government are inadequate to cover actual emissions. Notes 17 and 22 to the financial statements contain information about the methods used to value unused allowances at the end of the reporting period.

2.8.3 Impairment

Intangible assets are tested for impairment in accordance with the provisions of IAS 36 – Impairment of Assets (see paragraph 2.9).

2.9 IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

To perform impairment tests, property, plant and equipment and intangible assets are grouped into Cash-Generating Units (CGUs). CGUs are groups of assets whose on-going use generates cash inflows that are largely independent of the cash inflows generated by other groups of assets.

The recoverable value of a CGU is the higher of the following:

- its value in use, which corresponds to the present value of the forecast future cash flows it generates, without taking into account planned investment into capacity and expected gains in terms of productivity; or
- its fair value less costs of disposal.

The test base of a CGU is comprised of net current and non-current operating assets.

An impairment test is carried out:

- at least once a year for CGUs with indefinite useful lives, a category that, for the Group, is limited to goodwill; and
- for the other CGUs, if indications of impairment appear.

A Group stock market value that is less than its consolidated net assets during a business cycle, or a negative outlook associated with the economic, legislative or technological environment or with the business sector constitutes general indications of impairment liable to result in impairment tests on all the Group's CGUs.

Impairment tests involve comparing the recoverable amount of the CGU with its test base. An impairment is recognized if the value in use is lower than the carrying amount.

When the recoverable amount of the CGU is less than its net carrying amount, an impairment loss is recognized on a separate line in the income statement. When a CGU includes goodwill, the impairment loss is first deducted from goodwill and then, where applicable, the CGU's other assets.

2.10 INVENTORIES AND WORK IN PROGRESS

Inventories are valued at the lesser of cost or net realizable value, and provisions for impairment are recognized if necessary.

Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and the estimated costs necessary to make the sale.

Inventory costs of raw materials, goods for resale and other supplies comprises the purchase price excluding taxes, less discounts, rebates and other payment deductions obtained, plus incidental costs of purchase (transportation, unloading expenses, customs duties, buying commissions, etc.). These inventories are measured at weighted average cost.

The cost of work in progress and intermediate and finished goods consists of the production cost excluding financial expenses. Production costs comprise raw materials, factory supplies and labor, and direct and indirect industrial overheads attributable to processing and production, based on normal capacity. General and administrative expenses are excluded from this measurement.

With the exception of safety reserves recorded in property, plant and equipment, spare parts and consumables are recorded in inventory, including in the event of a consumption forecast beyond one year.

2.11 ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

A non-current asset or group of related assets and liabilities is considered to be held for sale, in accordance with IFRS 5 – Non-current Assets Held for Sale and Discontinued Operations, when:

- it is available for immediate sale in its current condition; and
- its sale is highly probable. This is the case when management is committed to a plan to sell the asset and an active program to locate a buyer at a reasonable price, and the sale is expected to take place in less than one year.

Non-current assets, groups of assets or activities held for sale are measured at the lower of their carrying amount and their fair value (estimated selling price), net of selling costs. They are presented on a separate line in assets and liabilities and are no longer amortized or depreciated.

Only entire business lines of discontinued operations are disclosed separately in the income statement.

2.12 PROVISIONS

A provision is recognized when, at the reporting date, the Group has a present obligation (legal or constructive) as a result of a past event and it is probable that an outflow of resources embodying future economic benefits will be required to settle the obligation.

Provisions are discounted to present values if the time impact is material (for example, in the event of provisions for environmental risks or site clean-up costs). The increase in the provisions associated with the passage of time is recognized as a financial expense.

In the case of restructuring, a provision may be recognized only if, at the reporting date, the Company has announced the restructuring and drawn up a detailed plan or started to implement the plan.

Provisions are booked with regard to disputes (technical, guarantees, tax audits, etc.) if the Group has an obligation to a third party at the reporting date. They are determined based on the best estimate of the expense likely to be required to settle the obligation.

2.13 RETIREMENT COMMITMENTS AND SIMILAR OBLIGATIONS

The Group participates in the funding of supplementary retirement plans and other long-term employee benefits, in accordance with constructive or legal requirements. The Group offers these benefits by means of either defined contribution or defined benefit plans.

In the case of defined contribution plans, the Group's only obligation is the payment of premiums. Contributions paid to the plans are recognized as expenses for the period. If applicable, provisions are recognized for outstanding contributions at the reporting date.

Provisions are recognized for retirement commitments and similar obligations arising from defined benefit plans and are measured based on an actuarial calculation performed at least once a year by independent actuaries. The projected unit credit method is applied as follows: each period of service creates an additional unit of benefit entitlement, and each of these units is measured separately to determine the Group's employee benefit obligations.

The calculations take into account the specific features of the various plans and assumptions for the retirement date, career advancement, salary increases, as well as the probability of the employee still being employed by the Group at retirement age (turnover rates, mortality tables, etc.). The obligation is discounted based on the interest rates of long-term bonds of prime issuers.

Retirement commitments and similar obligations mainly relate to the Group's French subsidiaries and its subsidiaries in Germany, the United Kingdom, the United States and Brazil.

Other employee benefits and similar for which the Group recognizes provisions are:

- in the case of French and foreign subsidiaries, benefits in connection with long-service awards;
- in the case of certain subsidiaries in the United States and Brazil, coverage of medical expenses.

The obligation is presented on the statement of financial position, net of plan assets measured at fair value (if applicable).

2.14 SHARE-BASED PAYMENTS

IFRS 2 – Share-based Payment, requires the measurement and recognition of the benefits arising from share option and performance share allocation plans that are equivalent to compensation of the beneficiaries: these are recognized as payroll costs spread over the vesting period, with a corresponding increase in equity.

Changes in value after the award date have no impact on the option's initial measurement. The number of options taken into account in measuring the plan is adjusted at each reporting date to reflect the probability of the beneficiaries' continued service at the end of the vesting period.

- Some members of executive management and employees benefit from the share subscription or share purchase options that entitle them to purchase an existing share or to subscribe to a capital increase at an agreed price.

  Options must be measured using the Black & Scholes model on the date they are awarded.
- Some members of executive management and employees benefit from share allocation plans where vesting conditions are related to performance criteria (percentage of consolidated EBITDA). These plans are measured using a binomial model to project share prices.
- Vallourec offers employee shareholding plans reserved for its employees. These plans are measured using a binomial model to project share prices.

2.15 TREASURY SHARES

Treasury shares held by the Group are recognized at their acquisition cost as a deduction from equity. Proceeds from the sale of these shares are booked directly as an increase in equity so that gains or losses on disposal do not affect consolidated income.

2.16 FINANCIAL INSTRUMENTS

Financial instruments include financial assets and liabilities as well as derivatives.

The presentation of financial instruments is defined by IFRS 7 and IAS 32. The measurement and recognition of financial instruments are governed by IFRS 9.

Changes in the fair value of derivatives are recognized in the financial statements. Changes in the fair value of hedged items are also recognized at each reporting date (see paragraph 2.16.4 : "Derivative instruments and hedge accounting").

In addition, in accordance with IAS 32, the sale of puts to non-controlling interest shareholders of a company under exclusive control results in the recognition of a financial liability equal to the discounted fair value of the estimated repurchase amount. The Group recognizes this financial liability by deducting it from the amount attributable to non-controlling interests and, for the remaining portion of the liability, by deducting it from equity, Group share.

2.16.1 Financial assets (excluding hedge derivatives)

Financial assets include:

- non-current financial assets: other equity interests and associated receivables, construction participation loans and guarantees; and
- current financial assets, including accounts receivable and other trade receivables, short-term derivative instruments and cash and cash equivalents (investment securities).

Initial measurement

Non-derivative financial assets are initially measured at fair value on the transaction date, including transaction costs, except for assets measured at fair value through profit or loss.

In most cases, the fair value on the transaction date is the historical cost, (i.e. the acquisition cost of the asset).

Classification and measurement at the end of the reporting period

Financial assets (excluding hedging derivatives) are classified according to IFRS 9 in one of the following three categories:

- Financial assets at amortized cost;
- Financial assets measured at fair value through Other Comprehensive Income;
- Financial assets measured at fair value through profit or loss.

The classification is determined according to the following two parameters:

- the economic model followed by the Group to manage financial assets;
- features of the contractual cash flows of financial assets.

Financial assets at amortized cost

These financial assets meet the following two conditions:

- the asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

These are mainly non-derivative financial assets with fixed or determinable payments that are not listed on an active market.

In the Group, this category includes:

- receivables associated with participating interests, long-term loans and construction participation loans;
- accounts receivable and other trade receivables.

The amortized cost of short-term receivables such as trade receivables is usually equal to their historical cost.

Loans to employees are measured using the effective interest rate method applied to estimated future cash flows until the maturity dates of the loans.

Financial assets measured at fair value through Other Comprehensive Income

This concerns the following financial assets:

1. The instruments resulting in cash flows that correspond solely to payments of principal and interest on the remaining capital due (SPPI instruments) and for which ownership falls within a mixed business model of collection and sales.

   This line item essentially concerns bonds and futures.

   When a financial asset is removed from the balance sheet, the cumulative loss or gain that was previously recorded under other comprehensive income (loss) is reclassified under equity in the income statement.

   The interest calculated according to the amortized cost method and impairments are recorded under income (loss).

2. Equity instruments are recorded at fair value under Other Comprehensive Income.

   Changes in fair value are recorded directly in equity and may not be reclassified. The interest calculated according to the amortized cost method and impairments are recorded under income (loss).

In the Group, the main assets in this category are investments in equity instruments. In general, these are:

- unlisted shares whose fair value cannot be reliably estimated. They are recorded at cost and undergo impairment testing when the consolidated financial statements are prepared;
- listed shares measured at their fair value at the reporting date. This fair value is determined based on the stock market price at the reporting date.

Financial assets measured at fair value through profit or loss

This category of assets includes financial assets that are not measured at amortized cost, or that are measured at fair value under Other Comprehensive Income.

These are primarily certain cash assets (investment securities, cash and cash equivalents, etc.) and asset derivatives that have not been expressly designated as hedging instruments (security deposits and guarantees).

These cash assets are measured at fair value at the reporting date, and changes in fair value are recognized in financial income/(loss). They are therefore not tested for impairment. Fair value is determined mainly by reference to market quotations.

Impairment assessment model for financial assets

Starting from the initial recording, assets measured at amortized cost and assets measured at their fair value through Other Comprehensive Income (debt instruments) are impaired according to the credit losses expected over the life of the asset. At each closing date, it is appropriate to assess whether the credit risk associated with a financial instrument has increased materially since the initial recording. The entity must base its assessment on the change in credit risk over the expected term of the financial instrument.

Vallourec uses several criteria to determine whether the credit risk has increased: rating of the counterparty, assessment of the level of risk.

2.16.2 Cash and cash equivalents

This item consists of current bank account balances and investment securities (units in short-term cash UCITS and mutual and investment funds) that are immediately available (not pledged), risk-free and have a low volatility level.

The cash flow statement is drawn up on the basis of the cash as defined above, net of overdrafts and other short-term bank borrowings that mature in less than three months.

The net debt referred to in the cash flow statement corresponds to total financial debt less cash and cash equivalents.

2.16.3 Financial liabilities

The Group's financial liabilities include bank loans which bear interest, bond issues, Bonds Convertible and/or Exchangeable into New Shares or Existing Shares (OCEANE) and finance leases, as well as liability derivatives.

Borrowings are classified as current liabilities for the portion to be repaid within 12 months after the reporting date and as non-current liabilities for payments due in more than 12 months.

Borrowings are initially recorded at fair value less associated transaction costs as soon as they are directly attributable. These costs (loan issue expenses and premiums) are taken into account in the calculation of the amortized cost using the effective interest rate method. They are recognized in financial profit or loss on an actuarial basis over the life of the liability.

OCEANE are initially recorded by distinguishing between two components as soon as conversion parity is respected: a debt component recorded under amortized cost, calculated using an estimated market interest rate for an equivalent non-convertible bond issue, and a conversion option component, recorded under equity for an amount that is equal to the difference between the OCEANE issue value and the debt component. Issue expenses are allocated between the two components, pro rata of their respective values.

At each reporting date, financial liabilities are then measured at amortized cost using the effective interest rate method, in addition to the specific procedures associated with hedge accounting (see below).

Variable rate borrowings for which interest rate swaps have been entered into are accounted for using the cash flow hedge method. Changes in the fair value of swaps, linked to movements in interest rates, are recognized in equity for the effective portion, with the balance being recognized in financial profit or loss.

2.16.4 Derivative instruments and hedge accounting

Group exposure to foreign exchange risk on commercial transactions

In addition to the hedging of certain financial liabilities (see paragraph 2.16.3), the Group enters into hedging contracts mainly to manage its exposure to foreign exchange risks arising from the orders and sales of certain subsidiaries in currencies other than their functional currency. In particular, a significant share of Vallourec's revenue is invoiced by European companies in US dollars. Exchange rate fluctuations between the euro and the dollar may therefore affect the Group's operating margin.

The Group manages its exposure to foreign exchange risk by setting up hedges based on regularly updated forecasts of customer orders. Operating receivables and incomes that will be generated by the orders are thus hedged by financial instruments, mainly forward currency sales.

To a lesser extent, the Group also enters into forward currency purchases to hedge its foreign currency purchase commitments.

Measurement and presentation of derivatives

Changes in the value of derivatives with respect to their date of implementation are measured at each reporting date.

The fair value of forward currency contracts is calculated on the basis of market data and conditions. Since they hedge commercial transactions, these derivatives are presented on the statement of financial position under current assets and current liabilities.

Hedge accounting

Hedging of commercial transactions falls within the category of cash flow hedges.

The Group applies hedge accounting in strict compliance with the criteria of IFRS 9:

- documentation of the hedging relationship: nature of the underlying hedged item, term of the hedge, hedging instrument used, spot rate of the hedge, forward points, etc.; and
- in the case of cash flow hedges, carrying out an effectiveness test on implementation of the derivative and updating the test at least at each quarter-end.

Hedge accounting within the Group is as follows:

At the reporting date, changes in the hedging instrument with respect to its date of implementation are measured at fair value and recognized on the statement of financial position as derivative assets or liabilities. The following are shown separately:

- the change in the currency impact of the hedging instrument (difference between the spot rate on the date of implementation of the hedge and the spot rate on the measurement date, i.e. the reporting date):
  - if the hedge is effective, and as long as the revenue (or purchase) hedged is not recognized, changes in the currency impact are recognized in equity, in accordance with the principles of cash-flow hedge accounting,
  - if the hedging instrument is not effective (a rare occurrence, given the procedures introduced by the Group), the change in the currency impact of the derivative is recognized in financial income or loss;
- the change in the rate impact (premium/discount). The Group has chosen to recognize this change in financial profit or loss, since this component is not included in the hedging relationship.

The revenue (purchase) corresponding to the sales forecasts (purchase orders) hedged is recognized at the spot rate on the date of implementation of the hedging contract. The account receivable (account payable) is initially recognized at the same spot rate.

At the end of each reporting period, hedged foreign currency accounts receivable and accounts payable are measured and recognized at the exchange rate applicable on the reporting date. The difference between that rate and the rate used on initial recognition (spot rate on the date of implementation of the hedge) or the rate applicable on the last reporting date constitutes an exchange gain or loss recognized in financial profit or loss for the period.

Once the hedged item (foreign currency receivable or payable) is recorded on the statement of financial position, the change in the currency impact of the hedging instrument previously recognized in equity is recorded in financial income or loss. Changes in the value of the hedging instrument and the receivable or debt covered then have a symmetrical impact on financial income or loss.

2.17 INCOME TAX

Income tax expense comprises current tax and deferred tax.

In accordance with IAS 12, deferred taxes are recognized, using the liability method, for temporary differences existing at the reporting date between the tax bases of assets and liabilities and their carrying amounts, as well as for tax losses, under the conditions set out below.

The main types of deferred tax recognized are:

- long-term deferred tax assets (provisions for retirement commitment of French companies), which are likely to be recovered in the foreseeable future;
- deferred tax assets for short-term recurring items (provision for paid time off, etc.) or non-recurring items (employee profit-sharing, provisions for liabilities that are not deductible for tax purposes, etc.) when they are likely to be recovered in the foreseeable future;
- deferred tax associated with the adjustments resulting from the transition from statutory financial statements to IFRS financial statements and with consolidation adjustments;
- tax loss carryforwards.

The rates used to calculate deferred taxes are the tax rates expected to apply during the period in which the asset will be realized or the liability settled, based on tax regulations that have been adopted or substantially adopted at the reporting date.

Deferred taxes are not discounted to present value.

Current and deferred tax expenses are recognized as income or expenditure in the income statement unless they relate to a transaction or event that is recognized under other comprehensive income or directly in equity (see hedge accounting in paragraph 2.16.4 and actuarial gains and losses on post-employment obligations in 2.13 “Retirement commitments and similar obligations”).

Deferred taxes are presented on separate lines in the statement of financial position under non-current assets and non-current liabilities.

Net deferred tax assets are recognized only for those companies and tax groups that, based on a review at each reporting date, appear reasonably likely to recover these assets in the foreseeable future.

2.18 REVENUE

Revenue reflects the sale of finished products and services. The Group analyzes the following five stages to determine the principle for recognizing revenue:

1. Identification of contract;
2. Identification of distinct performance obligations within the contract;
3. Evaluation of contract price;
4. Allocation of overall price to each performance obligation pro rata of their specific sale prices;
5. Recording of revenue when a performance obligation has been satisfied.

Revenue is recorded either a single time, when the Group has fulfilled the performance obligation by transferring control of the asset, or pro rata of the percentage of completion calculated on the basis of committed costs at the closing date.

No revenue is recognized if there are significant uncertainties as to the recovery of the amount due.

See paragraphs 2.4.2 and 2.16.4 for the procedures for recognizing revenue denominated in foreign currencies.

2.19 DETERMINATION OF OPERATING INCOME

The income statement format used by the Group employs a classification by function.

Operating income or loss is calculated as the difference between pre-tax revenues and expenses other than those of a financial nature or relating to the income or losses of associates, and excluding any income or losses from discontinued operations or assets held for sale.

EBITDA is an important indicator for the Group, enabling it to measure its performance from continuing operations. It is calculated by taking operating profit before amortization and depreciation and excluding certain operating revenues and expenses that are unusual in nature or occur rarely, such as:

- impairment of goodwill and fixed assets determined in the context of impairment tests in accordance with IAS 36 (see paragraph 2.9);
- significant restructuring expenses, or those related to adjustments to headcount in respect of major events or decisions;

- capital gains or losses on disposals;
- revenue and expenses resulting from major litigation, significant roll-out operations or capital transactions (*e.g.* costs of integrating a new activity).

2.20 EARNINGS PER SHARE

Net earnings per share are calculated by dividing consolidated net profit or loss by the weighted average number of shares outstanding during the period.

Diluted earnings per share are calculated taking into account the maximum impact of the conversion of dilutive common shares (options, performance shares) and using the "share repurchase" method as defined in IAS 33 "Earnings per Share".

3. Segment information

The segments presented according to the Group's internal organization comply with the definition of operating segments identified and grouped according to IFRS 8. This information corresponds to that reviewed by the Executive Committee.

The Group presents its segment information based on the following operating segments, reconciled with consolidated data:

- "Seamless tubes". This segment covers all the entities with production and marketing plants dedicated to the Group's main activity, i.e. the production of hot-rolled seamless carbon and alloy steel tubes, both smooth and threaded, for the oil and gas industry. This activity is characterized by a highly integrated manufacturing process, from production of the steel and hot-rolling to the final stages, facilitating the manufacture of products that are suitable for a variety of markets (including Oil & Gas, Power Generation, Chemicals and Petrochemicals, Automotive and Mechanical Engineering, and others);
- "Specialty Products". This segment incorporates a number of activities whose characteristics are very different from those described above, but which are not presented separately due to their relative immateriality. This treatment is authorized by IFRS 8. This activity includes the production of stainless steel and titanium tubes as well as specific forming and machining activities.

In addition, geographical information is presented, distinguishing between five areas determined based on an analysis of the specific risks and returns associated with them:

- the European Union;
- North America (United States, Mexico and Canada);
- South America (mainly Brazil);
- Asia;
- rest of the world (mainly the Middle East).

OPERATING SEGMENTS

Note 32 shows, for each operating segment, information on the income and results as well as selected information on the assets, liabilities and capital expenditure for fiscal years 2018 and 2017.

GEOGRAPHICAL INFORMATION

In addition to segment information, Note 32 shows, by geographical area, information on revenue (by geographical location of customers), capital expenditure and selected information on assets (by operating areas) for fiscal years 2018 and 2017.

B – Consolidation scope

	% interest 31/12/2017	% control 31/12/2017	% interest 31/12/2018	% control 31/12/2018
FULLY CONSOLIDATED COMPANIES				
Kestrel Wave Investment Ltd – Hong Kong	100.0	100.0	100.0	100.0
P.T. Citra Tubindo Tbk – Indonesia	81.72	81.72	81.72	81.72
Serimax Angola Ltd – United Kingdom	80.0	80.0	80.0	80.0
Serimax Australia Pty Ltd – Australia	80.0	80.0	80.0	80.0
Serimax Do Brasil Serviços de Soldagem e Fabricaçao Ltda – Brazil	80.0	80.0	80.0	80.0
Serimax Field Joint Coating Ltd – United Kingdom	48.0	80.0	48.0	80.0
Serimax Holdings S.A.S. – France	80.0	80.0	80.0	80.0
Serimax Ltd – United Kingdom	80.0	80.0	80.0	80.0
Serimax North America LLC – United States	80.0	80.0	80.0	80.0
Serimax OOO – Russia	80.0	80.0	80.0	80.0
Serimax Russia S.A.S. – France	80.0	80.0	-	-
Serimax S.A.S. – France	80.0	80.0	80.0	80.0
Serimax South East Asia Pte Ltd – Singapore	80.0	80.0	80.0	80.0
Serimax Welding Services Malaysia sdn bhd – Malaysia	80.0	80.0	80.0	80.0
Tianda Oil Pipe Co. Ltd – China	99.7	99.7	99.7	99.7
Tubos Soldados Atlântico – Brazil	100.0	100.0	100.0	100.0
Vallourec Al Qahtani Tubes LLC – Saudi Arabia	75.0	75.0	75.0	75.0
Valinox Nucléaire S.A.S. – France	100.0	100.0	100.0	100.0
Valinox Nucléaire Tubes Guangzhou Co. Ltd – China	100.0	100.0	100.0	100.0
Vallourec Changzhou Co.Ltd – China	100.0	100.0	100.0	100.0
Vallourec Asia Pacific Corp. Pte Ltd – Singapore	100.0	100.0	100.0	100.0
Vallourec Bearing Tubes – France	100.0	100.0	100.0	100.0
Vallourec Beijing Co. Ltd – China	100.0	100.0	100.0	100.0
Vallourec Canada Inc – Canada	100.0	100.0	100.0	100.0
Vallourec Deutschland GmbH – Germany	100.0	100.0	100.0	100.0
Vallourec Drilling Oil Equipment Manufacturing LLC – United Arab Emirates (2)	100.0	100.0	-	-
Vallourec Drilling Products France – France (2) (4)	100.0	100.0	-	-
Vallourec Drilling Products Middle East FZE – Dubai (2)	100.0	100.0	-	-
Vallourec Drilling Products USA Inc. – United States (2)	100.0	100.0	100.0	100.0
Vallourec Fittings – France (3)	100.0	100.0	-	-
Vallourec Florestal Ltda – Brazil	100.0	100.0	100.0	100.0
Vallourec Holdings Inc. – United States	100.0	100.0	100.0	100.0
Vallourec Industries Inc. – United States	100.0	100.0	100.0	100.0
Vallourec Middle East FZE – United Arab Emirates	100.0	100.0	100.0	100.0
Vallourec Mineração Ltda – Brazil	100.0	100.0	100.0	100.0
Vallourec Nigeria Ltd – Nigeria	100.0	100.0	100.0	100.0
Vallourec O and G Nigeria Ltd – Nigeria	100.0	100.0	100.0	100.0
Vallourec Oil & Gas (China) Co., Ltd – China	100.0	100.0	100.0	100.0
Vallourec Oil & Gas France S.A.S. – France	100.0	100.0	100.0	100.0
Vallourec Oil & Gas Kenya Limited – Kenya	100.0	100.0	100.0	100.0
Vallourec Oil & Gas Nederland B.V. – Netherlands (2)	100.0	100.0	100.0	100.0
Vallourec Oil & Gas UK Ltd – United Kingdom	100.0	100.0	100.0	100.0
Vallourec Oil & Gas Mexico SA de CV – Mexico	100.0	100.0	100.0	100.0
Vallourec One S.A.S. – France	100.0	100.0	100.0	100.0

	% interest 31/12/2017	% control 31/12/2017	% interest 31/12/2018	% control 31/12/2018
Vallourec Russia – Russia	100.0	100.0	100.0	100.0
Vallourec S.A. – France	100.0	100.0	100.0	100.0
Vallourec Saudi Arabia Ltd – Saudi Arabia	80.0	80.0	80.0	80.0
Vallourec Services S.A. – France	100.0	100.0	100.0	100.0
Vallourec Star, LP – United States	80.5	80.5	80.5	80.5
Vallourec Soluções Tubulares do Brasil – Brazil	84.6	84.6	84.6	84.6
Vallourec Transportes e Serviços do Brasil Ltda – Brazil	100.0	100.0	100.0	100.0
Vallourec Tube-Alloy LP – United States	100.0	100.0	100.0	100.0
Vallourec Tubes France S.A.S. – France	100.0	100.0	100.0	100.0
Vallourec Tubes S.A.S. – France	100.0	100.0	100.0	100.0
Vallourec Tubos do Brasil S.A. – Brazil	100.0	100.0	100.0	100.0
Vallourec Umbilicals S.A.S. – France [5]	100.0	100.0	-	-
Vallourec Uruguay S.A	100.0	100.0	100.0	100.0
Vallourec USA Corporation – United States	100.0	100.0	100.0	100.0
VAM Changzhou Oil & Gas Premium Equipments – China	100.0	100.0	100.0	100.0
VAM Far East – Singapore	51.0	51.0	51.0	51.0
VAM Field Services Angola – Angola	100.0	100.0	100.0	100.0
VAM Field Services Beijing – China	51.0	51.0	51.0	51.0
VAM Holding Hong Kong Limited – Hong Kong	100.0	100.0	100.0	100.0
VAM USA – United States	51.0	51.0	51.0	51.0
JOINT VENTURES				
Vallourec Umbilicals S.A.S. – France [5]	-	-	51.0	51.0
Vallourec Niko Tube Holding GmbH [1]	-	-	50.1	50.1
Vallourec Niko Tube Llc [1]	-	-	50.1	50.1
ASSOCIATES				
Hüttenwerke Krupp Mannesmann (HKM) – Germany	20.0	20.0	20.0	20.0
Ascoval	40.0	40.0	40.0	40.0

- 2018:

  (1) On 18 April, Vallourec began a partnership with Interpipe, a Ukranian manufacturer of seamless tubes, to cooperatively produce non-OCTG carbon seamless tubes for the European market.

  (2) On 25 April, Vallourec finalized the sale of its “Drilling Products” business to the American oil services group National Oilwell Varco (NOV). This sale concerned Vallourec’s industrial Drilling Products business in North America, the Middle East, the Netherlands, and France (one plant in Aulnoye-Aymeries).

  (3) On 26 April, the Group sold Vallourec Fittings, a subsidiary that produces fittings in France (plant in Maubeuge) to Allied Group.

  (4) On 2 July 2018, Vallourec finalized the sale of Vallourec Drilling Products France (plants in Cosne-Cours-sur-Loire and Tarbes) to Altifort.

  (5) Since 16 November 2018, Vallourec has exercised joint control over Vallourec Umbilicals following the capital increase subscribed by Banque Publique d’Investissement (BPI) to finance its industrial development project. Vallourec and BPI hold 51% and 49% respectively of the company following the operation.

There are no significant unconsolidated subsidiaries or interests.

C – Notes to the financial statements (in € thousand – €k)

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Note 1 Intangible assets and goodwill

	Concessions, patents, licenses and other rights	Other intangible assets	Total intangible assets	Goodwill
GROSS VALUES				
As at 31/12/2016	**93,964**	**541,957**	**635,921**	**653,126**
Acquisitions	2,409	1,179	3,588	-
Disposals	(75)	(536)	(611)	-
Reclassification to assets held for sale and discontinued operations	(3,322)	(20,246)	(23,568)	(18,019)
Impact of changes in exchange rates	(2,157)	(55,599)	(57,756)	(69,211)
Other changes	(5,089)	(84)	(5,173)	12,212
As at 31/12/2017	**85,730**	**466,671**	**552,401**	**578,108**
Acquisitions	58	927	985	-
Disposals	(79)	-	(79)	-
Changes in consolidation scope	(9)	(595)	(604)	(41,098)
Impact of changes in exchange rates	(1,057)	13,155	12,098	16,078
Other changes	1,228	67	1,295	-
AS AT 31/12/2018	**85,871**	**480,225**	**566,096**	**553,088**
DEPRECIATION AND IMPAIRMENT				
As at 31/12/2016	**(71,920)**	**(439,019)**	**(510,939)**	**(270,442)**
Net depreciation expenses for the fiscal year	(5,565)	(22,634)	(28,199)	-
Impairment (see Notes 2.3, 28 and 29)	-	-	-	-
Disposals	75	536	611	-
Disposals from business combinations	-	-	-	-
Reclassification to assets held for sale and discontinued operations	2,998	20,245	23,243	18,019
Impact of changes in exchange rates	1,633	45,941	47,574	22,455
Other changes	4,004	-	4,004	60
As at 31/12/2017	**(68,775)**	**(394,931)**	**(463,706)**	**(229,908)**
Net depreciation expenses for the fiscal year	(5,082)	(16,589)	(21,671)	-
Impairment (see Notes 2.3, 28 and 29)	-	-	-	-
Disposals	79	78	157	-
Changes in consolidation scope	(2)	364	362	41,098
Impact of changes in exchange rates	934	(11,085)	(10,151)	(5,862)
Other changes	172	18	190	-
AS AT 31/12/2018	**(72,674)**	**(422,145)**	**(494,819)**	**(194,672)**
NET VALUES				
As at 31/12/2017	**16,955**	**71,740**	**88,695**	**348,200**
AS AT 31/12/2018	**13,197**	**58,080**	**71,277**	**358,416**

In 2018, the change in consolidation scope primarily referred to the disposal of fully amortized goodwill from the Drilling Products activity.

Intangible assets

Vallourec devotes significant efforts on an ongoing basis to Research and Development, particularly in the field of energy. These efforts cover three main areas:

- manufacturing processes (charcoal, steel-making, tube-rolling, non-destructive testing, forming, welding and machining);
- new products and product improvements;
- new services (customer support for tube design, use and processing).

No costs were identified in connection with major projects that meet the criteria for capitalization as assets.

Other intangible assets relate to technology and know-how, and customer relationships acquired mainly in connection with business combinations. They are amortized on a straight-line basis over their useful life.

Other than goodwill, there are no intangible assets with indefinite useful lives.

Goodwill

Cash-generating unit (CGU) (see paragraph 2.9 : "Impairment of property, plant and equipment and intangible assets")	**Vallourec do Brasil**	**Vallourec North America**	**Vallourec Europe**	**Total**
As at 31/12/2016	**40,727**	**337,343**	**4,614**	**382,684**
Impact of changes in exchange rates and other	(5,413)	(40,842)	(501)	(46,756)
Impairment (see Notes 2.3, 28 and 29)	-	-	-	-
Acquisitions (see Note 34)	2,713	-	9,559	12,272
As at 31/12/2017	**38,027**	**296,501**	**13,672**	**348,200**
Impact of changes in exchange rates and other	(3,722)	14,061	(123)	10,216
Impairment (see Notes 2.3, 28 and 29)	-	-	-	-
Other changes	-	-	-	-
AS AT 31/12/2018	**34,305**	**310,562**	**13,549**	**358,416**

Note 2.1 Property, plant and equipment

	Land	Buildings	Technical installations, industrial equipment and tools	Current property, plant and equipment	Other tangible assets	Total
GROSS VALUES						
As at 31/12/2016	**150,860**	**907,200**	**4,770,897**	**134,407**	**387,832**	**6,351,197**
Acquisitions	-	3,660	33,853	100,110	7,557	145,180
Disposals	(163)	(2,471)	(38,628)	-	(19,822)	(61,084)
Reclassification to assets held for sale and discontinued operations	(1,277)	(21,693)	(133,100)	(1,038)	(5,744)	(162,852)
Impact of changes in exchange rates	(15,388)	(80,927)	(398,348)	(9,455)	(40,046)	(544,164)
Reclassification and other changes	1,292	10,978	81,330	(109,128)	21,872	6,344
As at 31/12/2017	**135,324**	**816,747**	**4,316,004**	**114,896**	**351,649**	**5,734,621**
Acquisitions	1,129	3,524	14,629	87,868	14,330	121,480
Disposals	(2,920)	(11,248)	(99,399)	(386)	(15,198)	(129,151)
Changes in consolidation scope	(1,705)	(4,861)	(36,763)	570	(2,382)	(45,141)
Impact of changes in exchange rates	(6,215)	(3,412)	(37,399)	(2,125)	(16,005)	(65,156)
Reclassification and other changes	2,173	7,247	91,519	(98,934)	(10,352)	(8,347)
AS AT 31/12/2018	**127,786**	**807,997**	**4,248,591**	**101,889**	**322,042**	**5,608,306**
DEPRECIATION AND IMPAIRMENT						
As at 31/12/2016	**(42,012)**	**(329,478)**	**(2,151,934)**	**(3,862)**	**(206,297)**	**(2,733,583)**
Net depreciation expenses for the fiscal year	(1,365)	(31,773)	(247,912)	-	(23,625)	(304,675)
Impairment losses (Note 2.3)	(510)	(259)	(64,336)	-	-	(65,105)
Disposals	17	1,899	37,950	-	3,859	43,725
Reclassification to assets held for sale and discontinued operations	-	12,694	101,219	-	4,190	118,103
Impact of changes in exchange rates	4,608	23,996	141,702	147	20,880	191,333
Other changes	(1,045)	(11,379)	4,050	354	490	(7,530)
As at 31/12/2017	**(40,307)**	**(334,300)**	**(2,179,261)**	**(3,361)**	**(200,503)**	**(2,757,732)**
Net depreciation expenses for the fiscal year	(843)	(30,139)	(217,016)	-	(21,250)	(269,248)
Impairment losses (Note 2.3)	(533)	(9,548)	(41,412)	-	(93)	(51,586)
Disposals	1,323	7,095	85,791	-	14,385	108,594
Changes in consolidation scope	1,461	3,315	29,076	-	2,317	36,169
Impact of changes in exchange rates	1,963	35	9,111	20	4,350	15,479
Other changes	4,894	(2,468)	(8,234)	-	6,465	657
AS AT 31/12/2018	**(32,042)**	**(366,010)**	**(2,321,945)**	**(3,341)**	**(194,329)**	**(2,917,667)**
NET VALUES						
As at 31/12/2017	**95,017**	**482,447**	**2,136,743**	**111,535**	**151,146**	**2,976,889**
AS AT 31/12/2018	**95,744**	**441,987**	**1,926,646**	**98,548**	**127,713**	**2,690,639**

"Impairment losses" recorded as at 31 December 2017 and 31 December 2018 are primarily linked to impairments of isolated assets, which reflect supplementary initiatives under the transformation plan at industrial sites in Brazil, Europe and China.

Capital expenditure excluding changes in scope

	2017		2018	
	Intangible assets and property, plant and equipment	Biological (see Note 2.2)	Intangible assets and property, plant and equipment	Biological (see Note 2.2)
• Europe	85,186	-	50,535	-
• North America	26,224	-	32,818	-
• South America	26,700	6,184	21,267	6,209
• Asia	10,519	-	17,695	-
• Others	139	-	150	-
Total	**148,768**	**6,184**	**122,465**	**6,209**
	154,952		128,674	
Note 1: acquisition of intangible assets	3,588	-	985	-
Note 2 .1: acquisition of property, plant and equipment	145,180	6,184	121,480	6,209
Total capital expenditure	**148,768**	**-**	**122,465**	**-**
Changes in fixed asset liabilities and partner contributions	(3,425)		547	
TOTAL	**145,343**	**6,184**	**123,012**	**6,209**
Statement of cash flows: capital expenditure paid out during the period:	151,527		129,221	

Leases

The finance lease signed in 2010 by Vallourec Soluções Tubulares do Brasil (formerly VSB) for the construction of a water treatment facility had a net carrying amount of €48 million as at 31 December 2018.

Note 2.2 Biological assets

Change in biological assets	2017	2018
As at 1 January	**88,411**	**71,494**
Investments	6,184	6,209
Valuation at fair value	3,136	3,293
Net depreciation expenses for the period	(8,603)	(8,870)
Impairment losses	-	(1,663)
Reclassification to inventory	(4,514)	(3,171)
Foreign exchange differences	(11,576)	(7,444)
Other changes	(1,544)	(237)
AS AT 31 DECEMBER	**71,494**	**59,611**

The Group's Brazilian subsidiary Vallourec Florestal cultivates eucalyptus plantations mainly to produce the charcoal used in the blast furnaces of Vallourec Soluções Tubulares do Brasil.

As at 31 December 2018, the company cultivated approximately 112,709 hectares of eucalyptus over a total area of 230,375 hectares.

In 2018, Vallourec Florestal posted revenue of €45.6 million, as compared to €53.5 million in 2017.

Note 2.3 Impairment of intangible assets and property, plant and equipment

Cash-Generating Units

The Group includes five CGUs, which comprise the assets from several subsidiaries that participate in the production cycle of the products sold by these CGUs:

- Vallourec Europe: the CGU groups together the tube mills (France, Germany, and China) and the finishing lines that they supply (in France, Germany, the Middle East, and Asia);
- Vallourec North America: the CGU comprises a steel mill and tube mills in the United States, along with the finishing lines they supply (the United States, Mexico, and Canada);
- Vallourec do Brasil: the CGU in Brazil comprises a steel mill, integrating a mine and forests, which provide the raw material necessary for them to function, tube mills, as well as the finishing lines they supply;
- Serimax: the CGU combines the offshore and onshore pipeline welding activities;
- Valinox Nucléaire: the CGU combines the French and Chines tube supply activities used in constructing nuclear power plants, and in particular steam generators.

Impairment indications

The Group was faced with a deteriorated economic environment (drop in exploration and production investments, and in production by oil operators, volatility of the price of raw materials and energy, extremely competitive international environment). In response to the continued decline in oil and gas prices since the end of 2014, oil and gas companies have further tightened their cost control, leading them to reduce capital expenditure and streamline inventories in the areas of exploration, production and development of oil and natural gas reserves. This has had a significant impact on the demand for tubes and on their prices. This reduction in demand, combined with lower prices resulting from competitive pressures from incumbent gas operators and the arrival of new competitors, exacerbated by the deflationary pressures of our customers, has significantly altered the Group's competitiveness and the profitability of activities, and has been analyzed as a general indication of impairment for Europe, Sérimax, and Valinox Nucléaire.

As at 31 December 2018, impairment tests were conducted on the CGUs that showed signs of impairment: Europe, Serimax, and Valinox Nucléaire. Furthermore, the Group conducted an impairment test on the CGUs that included goodwill, namely Brazil and North America.

Tested bases

The CGUs with the strongest sensitivity to the assumptions are presented below:

In € million	Vallourec Europe	Vallourec North America
Non-current operating assets	836	1,415
Current operating assets	435	258
Test base	1,271	1,673

Recoverable value

For each CGU tested, the recoverable value is considered as equal to the value in use, which corresponds to the present value of the forecast future cash flows it generates.

Future cash flows

FOR THE TERM OF THE BPS, I.E. FIVE YEARS

The Group's five-year strategic plan was presented to the Supervisory Board in December 2018. In this plan, the Group used assumptions for 2019 that were consistent with the data recorded in late 2018, and a gradual recovery of business.

The next five years should bring a gradual increase in investment by oil companies and benefits from the competitiveness plans and new industrial routes launched by the Group.

Exchange rate assumptions are consistent over the period with those used at the end of 2018.

For the Europe CGU, commercial assumptions were refined and take into account the impact of the change between exchange rates used when establishing the strategic plan and the closing rates of 31 December 2018.

A THREE-YEAR EXTRAPOLATION PERIOD FROM 2024 TO 2026

Given that the main players in the Oil & Gas market have been subject to profound structural changes since 2014, the effects of which are expected beyond the five-year period, the return of oil investment to normal levels is not expected by the end of the term of the strategic plan.

These circumstances have led us to model a three-year extrapolation period after the final year of the strategic plan.

This period also makes it possible to gradually converge the revenue growth rates for the final year of the strategic plan towards the perpetuity growth rate.

The perpetuity growth rates were reviewed on 31 December 2018 in order to make the latter consistent with the currency in which the weighted average cost of capital ("WACC") and the future cash flows were calculated. Consequently, 2027 is projected to perpetuity by applying a unique growth rate of 2.0% to all CGUs. This rate corresponds to long-term inflation forecasts in the euro zone.

Discount rate

The CGU discount rates correspond to their weighted average cost of capital ("WACC"), corresponding to the weighted average cost of equity and the cost of debt after tax.

The main components of the cost of equity are:

- the risk-free rate corresponding to the 10-year French Treasury bond (OAT) rate;
- the systematic risk obtained by combining:
  - the Europe share market risk premium corresponding to the expected yield rate on this market minus the risk-free rate,
  - the betas per activity calculated on the basis of samples of listed companies in the sector strictly comparable to the CGU in terms of activity;
- the specific risk linked to countries ("country risk") for activities situated outside of Europe.

The cost of debt after tax is calculated by adding to the risk-free rate the loan spread observed on the bond maturing on 30 September 2024 issued by Vallourec and taking tax into account.

Sectoral gearing, which makes it possible to weight the cost of equity and the cost of debt after tax, and which corresponds to the net financial debt/stock market capitalization median of comparable companies.

All of the above parameters have been calculated over an average period of five years.

Applying these parameters leads to a discount rate of 8.0% for Europe, 7.9% for North America, 9.1% for Vallourec do Brasil, 7.7% for Serimax and 7.7% for Valinox Nucléaire.

Impairment test results

Beyond the impairment of individual assets related to adaptations in production units (€53 million) primarily in the Europe CGU and the Valinox Nucléaire CGU, the tests performed do not result in the recognition of impairment losses.

Sensitivity analyses

The sensitivity analyses presented in the table below were calculated by changing a single parameter. Therefore, they correspond to a mechanical calculation, which is not representative of a consistent change in all of the sales parameters, nor of additional measures that the group might end up taking under such circumstances.

The results of the sensitivity analyses of the Vallourec Europe and Vallourec North America CGUs are presented in the table below:

Sensitivity analyses of the CGUs *In € million*		**Vallourec Europe**	**Vallourec North America**
Tested bases as at 31/12/2018		1,271	1,673
CGU value in use		**1,436**	**2,306**
Sensitivity to the discount rate	+0.5pt	1,294	2,136
	-0.5pt	1,602	2,507
EBITDA sensitivity	-10% per year	1,191	1,960
	+10% per year	1,679	2,648
EUR/USD foreign exchange rate sensitivity	+5 cts	958	2,168
	-5 cts	1,968	2,462
Perpetuity growth rate sensitivity	+0.5pt	1,524	2,437
	-0.5pt	1,360	2,196
Impairment loss		**-**	**-**

The table above shows that:

- for the Vallourec Europe and Vallourec North America CGUs, the values in use as at 31 December 2018 are higher than the tested bases, as indicated above;
- the future cash flows of these CGUs are sensitive to changes in the value of their export transactions denominated in a currency other than that of the country where they are based (mainly USD).

Given the sensitivity of DCF calculations to the assumptions used and in a context of deterioration within the sector, the Group decided to maintain the impairment losses recorded at the end of 2014 and 2015 for the Vallourec Europe CGU.

Note 3 Equity affiliates

The Group's main equity affiliates (individual carrying amount greater than €50 million) are listed below.

	HKM	Vallourec Umbilicals	Others	Total
Activity	**Steel mill**	**Welded tube**		
Business location	**Germany**	**France**		
As at 31/12/2016	**80,686**		**44,114**	**124,800**
Capital increase	-		-	-
Impact of changes in exchange rates	-		(10,874)	(10,874)
Dividends paid	(1)		(4,659)	(4,660)
Changes in consolidation scope	-		12,183	12,183
Impairment of shares			(12,000)	(12,000)
Others	(3)		(4,744)	(4,747)
Contribution to net income of the period	6		(3,179)	(3,173)
As at 31/12/2017	**80,688**		**20,841**	**101,529**
Capital increase	-	-	1,771	1,771
Impact of changes in exchange rates	-	-	1,029	1,029
Dividends paid	-	-	(103)	(103)
Changes in consolidation scope	-	26,010	2,797	28,807
Others	2	2	1	5
Contribution to net income of the period	-	(594)	1,914	1,320
AS AT 31/12/2018	**80,690**	**25,418**	**28,250**	**134,358**

Since 16 November 2018, Vallourec has exercised joint control over Vallourec Umbilicals following the capital increase subscribed by Banque Publique d'Investissement (BPI) to finance its industrial development project and has been consolidated using the equity method as from the date of the transaction. Vallourec and BPI hold 51% and 49% of the company respectively following the transaction.

In 2017, there was impairment corresponding to a total write-off of Ascoval's shares, after a decision of the Regional Court of Strasbourg to place Ascoval under a "safeguard procedure».

3.1 Data relating to associates

The condensed financial data (100%) for HKM is presented below.

HKM	31/12/2017	31/12/2018
Non-current assets	648,050	634,955
Current assets	655,989	661,185
Non-current liabilities	505,630	493,865
Current liabilities	394,971	398,825
Net assets	**403,438**	**403,450**
Sales	2,511,496	2,474,027
Operating income/(loss)	26,149	9,308
Net income from continuing operations	-	-
Other comprehensive income (loss)	-	-
Total comprehensive income (loss)	31	-
Dividends paid to the Group	5	-

The reconciliation of the condensed financial data from the HKM associate with the book value of the Group's interests in this associate is as follows:

HKM	31/12/2017	31/12/2018
Net assets	403,438	403,450
Group's percentage interest in HKM	20%	20%
Goodwill	-	-
Others	-	-
Value of investments in equity affiliates	80,688	80,690
HKM net income/(loss)	31	-
Group's percentage interest in HKM	20%	20%
Share of net income	6	-

The Group likewise holds interests in other associates (which, considered individually, are not significant) for an overall book value of €26 million as at 31 December 2018, compared with €21 million as at 31 December 2017.

3.2 Data related to joint ventures

The condensed financial data (100%) for Vallourec Umbilicals is presented below.

Vallourec Umbilicals	31/12/2018
Non-current assets	19,204
Current assets excluding cash and cash equivalents	3,514
Cash and cash equivalents	30,479
Other non-current liabilities	1,232
Other non-current borrowings	-
Other current liabilities	2,126
Current borrowings	-
Net assets	**49,839**

	Q4 2018
Sales	38
Operating income/(loss)	(1,158)
Financial income/(loss)	(4)
Tax expense	(3)
Net income from continuing operations	(1,165)
Other comprehensive income (loss)	-
Total comprehensive income (loss)	(1,165)
Dividends paid to the Group	-

The reconciliation of the condensed financial data from the joint venture Vallourec Umbilicals with the book value of the Group's interests in this joint venture is as follows:

Vallourec Umbilicals	31/12/2018
Net assets	49,839
Group's percentage interest	51%
Goodwill	-
Others	-
Value of investments in equity affiliates	25,418
Income from Vallourec Umbilicals	(1,165)
Group's percentage interest	51%
Share of net income	(594)

Note 4 Other non-current assets

	Other equity interests	Loans	Other financial assets	Other non-current assets	Provisions	Total
As at 31/12/2016	**79,576**	**5,031**	**58,034**	**215,283**	**(9,353)**	**348,571**
Impact of changes in exchange rates	(549)	(123)	(4,696)	(17,237)	763	(21,842)
Changes in gross values	(73,282)	17,021	(8,130)	(89,469)	-	(153,860)
Increase in provisions	-	-	-	-	(16,983)	(16,983)
Reversals of provisions	-	-	-	-	1,258	1,258
Reclassification to assets held for sale and discontinued operations	-	-	(375)	-	-	(375)
Other changes	-	(220)	(8,911)	(9,619)	(856)	(19,606)
As at 31/12/2017	**5,745**	**21,709**	**35,922**	**98,958**	**(25,171)**	**137,163**
Impact of changes in exchange rates	(367)	(60)	(2,519)	(3,024)	506	(5,464)
Changes in gross values	-	(109)	5,840	17,573	-	23,304
Increase in provisions	-	-	-	-	-	-
Reversals of provisions	-	-	-	-	2,024	2,024
Other changes	264	(1,115)	(151)	1,234	(1,159)	(927)
AS AT 31/12/2018	**5,642**	**20,425**	**39,092**	**114,741**	**(23,800)**	**156,100**

Other non-current assets consist mainly of €99.8 million in deferred tax receivables in Brazil and the United States, and €27.8 million in interest-bearing security deposits, mainly paid in connection with tax disputes in Brazil (see also Note 16).

In 2017, Nippon Steel & Sumitomo Metal Corp. shares, classified as available-for-sale financial assets under “other equity interests,” were disposed.

Maturities of other non-current assets	1 to 5 years	5 years or more	Total
Gross values as at 31/12/2017			
Loans	19,662	2,047	21,709
Other equity interests	-	5,745	5,745
Other financial assets	72,413	62,467	134,880
TOTAL	**92,075**	**70,259**	**162,334**
Gross values as at 31/12/2018			
Loans	18,633	1,792	20,425
Other equity interests	-	5,642	5,642
Other financial assets	109,033	44,800	153,833
TOTAL	**127,666**	**52,234**	**179,900**

Note 5 Deferred taxes

Deferred taxes are recognized using the liability method.

The rates used are the recovery rates known at the reporting date.

The French supplementary business taxes (*Cotisation Foncière des Entreprises* and *Cotisation sur la Valeur Ajoutée des Entreprises*) are recognized as operating expenses.

	2017	2018
Deferred tax assets	242,440	250,215
Deferred tax liabilities	18,284	15,313
NET DEFERRED TAX ASSETS/(DEFERRED TAX LIABILITIES)	**224,156**	**234,902**

Presentation of deferred taxes by type As at 31/12/2018	Assets	Liabilities	Net deferred tax liabilities
Non-current assets	-	124,453	
Other assets and liabilities	25,243	-	
Inventories	16,930	-	
Employee benefit commitments	3,824	-	
Derivatives	987		
Distributable reserves and foreign currency translation reserves	-	-	
Net balance	**46,984**	**124,453**	**(77,469)**
Recognition of tax losses	312,371	-	312,371
TOTAL	**359,355**	**124,453**	**234,902**

As at 31/12/2017	Assets	Liabilities	Net deferred tax liabilities
Non-current assets	-	114,079	
Other assets and liabilities	31,563	-	
Inventories	22,023	-	
Employee benefit commitments	1,900	-	
Derivatives	-	704	
Distributable reserves and foreign currency translation reserves	-	-	
Net balance	**55,486**	**114,783**	**(59,297)**
Recognition of tax losses	283,453	-	283,453
TOTAL	**338,939**	**114,783**	**224,156**

The Group’s deferred taxes (gross values) as at 31 December 2018 and 31 December 2017 are broken down as follows:

As at 31/12/2018	Gross value	Corresponding deferred tax	Recognized deferred tax	Unrecognized or impaired deferred tax
Tax loss carryforwards	3,699,145	975,797	312,372	663,425
Other tax assets	-	-	(62,157)	297,949
Total tax assets	**-**	**975,797**	**250,215**	**961,374**
Tax liabilities	-	-	(15,313)	-
Total tax liabilities	**-**	**-**	**(15,313)**	**-**
TOTAL	**-**	**-**	**234,902**	**961,374**

As at 31/12/2017	Gross value	Corresponding deferred tax	Recognized deferred tax	Unrecognized or impaired deferred tax
Tax loss carryforwards	3,147,994	942,995	283,453	659,541
Other tax assets			(41,013)	330,361
Total tax assets	**-**	**942,995**	**242,440**	**989,902**
Tax liabilities	-	-	(18,284)	-
Total tax liabilities	**-**	**-**	**(18,284)**	**-**
TOTAL	**-**	**-**	**224,156**	**989,902**

Tax loss carryforwards relate mainly to Vallourec Soluções Tubulares do Brasil (formerly VSB), the French tax consolidation group, Vallourec Changzhou, Vallourec Star, Vallourec Deutschland, and Tianda Oil Pipe Co. Ltd.

The deferred tax assets are recognized when there is reasonable assurance of being able to recover these deferred tax assets in the foreseeable future (between 5 and 10 years). When it is estimated that allocating these carryforwards to future taxable profits would be uncertain, no deferred tax asset is recognized and, where applicable, deferred tax assets at the opening date are impaired.

Changes in deferred taxes are broken down as follows:

Net deferred tax assets/(liabilities)	2017	2018
As at 1 January	**109,775**	**224,156**
Impact of changes in exchange rates	(25,398)	(21,029)
Recognized in profit or loss	147,024	31,660
Recognized in reserves	(689)	204
Changes in consolidation scope	-	(138)
Others	(6,556)	49
AS AT 31 DECEMBER	**224,156**	**234,902**

The amount of the deferred tax recognized in reserves corresponds mainly to the change in deferred taxes calculated on derivatives and actuarial gains and losses on retirement commitments and similar employee commitments.

Note 6 Inventories and work-in-progress

	Raw materials and merchandise	Goods in production	Intermediate and finished goods	Total
GROSS VALUES				
As at 31/12/2016	**498,720**	**318,815**	**422,977**	**1,240,512**
Changes in inventories recognized in the income statement	(1,338)	94,402	(11,145)	81,919
Impact of changes in exchange rates	(35,420)	(25,203)	(32,133)	(92,756)
Reclassification to assets held for sale and discontinued operations	(21,613)	(12,200)	(8,999)	(42,812)
Other changes	(3,519)	-	493	(3,026)
As at 31/12/2017	**436,830**	**375,814**	**371,193**	**1,183,837**
Changes in inventories recognized in the income statement	32,560	(3,017)	107,333	136,876
Impact of changes in exchange rates	(5,490)	8,378	(15,931)	(13,043)
Changes in consolidation scope	(25,081)	2,230	(9,125)	(31,976)
Other changes	133	(54)	(1,179)	(1,100)
AS AT 31/12/2018	**438,952**	**383,351**	**452,291**	**1,274,594**
IMPAIRMENT				
As at 31/12/2016	**(106,432)**	**(24,567)**	**(74,764)**	**(205,763)**
Impact of changes in exchange rates	4,570	1,451	3,532	9,553
Allowances	(32,763)	(11,894)	(31,983)	(76,640)
Reversals of provisions	40,231	2,916	37,940	81,087
Reclassification to assets held for sale and discontinued operations	7,073	16	2,559	9,648
Other changes	13,189	(6,975)	(4,103)	2,111
As at 31/12/2017	**(74,132)**	**(39,053)**	**(66,819)**	**(180,004)**
Impact of changes in exchange rates	1,127	(548)	1,468	2,047
Allowances	(12,825)	(2,097)	(35,240)	(50,162)
Reversals of provisions	23,977	7,294	52,750	84,021
Changes in consolidation scope	1,957	1,082	1,373	4,412
Other changes	4,318	(4,357)	148	109
AS AT 31/12/2018	**(55,578)**	**(37,679)**	**(46,320)**	**(139,577)**

The cost of any underutilized capacity is excluded from the value of inventories. Made-to-order products are impaired, where applicable, for the unaffected portion and valued at scrap prices (if applicable). Inventories are impaired based on their net realizable values.

Net values	Raw materials and merchandise	Goods in production	Intermediate and finished goods	Total
As at 31/12/2017	**362,698**	**336,761**	**304,374**	**1,003,833**
AS AT 31/12/2018	**383,374**	**345,672**	**405,971**	**1,135,017**

Note 7 Trade and other receivables

	Advances and partial payments on orders	Trade and other receivables (gross)	Provisions for impairment	Total
As at 31/12/2016	**28,115**	**551,053**	**(32,950)**	**546,218**
Impact of changes in exchange rates	(1,763)	(45,763)	1,193	(46,333)
Changes in gross values	8,052	77,940	-	85,992
Increase in provisions	-	-	(12,995)	(12,995)
Reversals of provisions	-	-	8,675	8,675
Reclassification to assets held for sale and discontinued operations	-	(13,590)	153	(13,437)
Other changes	44	(434)	193	(197)
As at 31/12/2017	**34,448**	**569,206**	**(35,731)**	**567,923**
Impact of changes in exchange rates	(178)	(3,532)	90	(3,620)
Changes in gross values	(24,571)	41,579	-	17,008
Increase in provisions	-	-	(11,792)	(11,792)
Reversals of provisions	-	-	32,924	32,924
Changes in consolidation scope	-	(6,683)	1,348	(5,335)
Other changes	(16)	(415)	1,881	1,450
AS AT 31/12/2018	**9,683**	**600,155**	**(11,280)**	**598,558**

Reversals of provisions corresponding to payments received and written-off debts.

In 2018, the Group completed operations to mobilize receivables without recourse with financial institutions in the amount of €34 million. The amount of the corresponding receivables thus no longer appears in the Group's consolidated balance sheet.

Note 8 Financial instruments

Financial assets and liabilities

Financial assets and liabilities are measured and presented in the statement of financial position in accordance with the various categories specified by IFRS 9.

8.1 Impact of IAS 32 and IFRS 9 on equity and net income

As explained in paragraph 2.16 on accounting principles and methods, the main impact of IAS 32 and IFRS 9 relates to the accounting treatment of hedging contracts entered into by the Group in connection with commercial purchase and sale transactions in foreign currencies and the accounting treatment of available-for-sale financial assets. The effects of the transition to IFRS 9 have had little impact on the financial statements (measurement of housing loans to employees using the effective interest rate method and measurement at fair value of investment securities).

Regarding foreign exchange hedges, the hedging relationship is based on the spot exchange rates. Premiums and discounts on derivatives are systematically considered ineffective and recognized in the income statement (financial income or loss). Currency receivables and payables have been revalued at the spot rate as at 31 December.

From a net asset position of €19.6 million as at 31 December 2017, hedging assets moved to a net liability position of €28.5 million as at 31 December 2018.

Fluctuations in the euro against the US dollar in 2018 account for most of the -€20.8 million change in the currency impact of hedges of forecast sales and purchases in foreign currencies and the -€16.5 million change in the currency impact of hedges of foreign currency receivables and payables.

Financial instruments of a speculative nature remain exceptional and arise when a hedging relationship is ineffective under the terms of IFRS 9. Their changes in value do not have a material impact on foreign exchange gains or losses.

Statement of financial position items	As at 31/12/2017	As at 31/12/2018	Changes in 2018 Total	Reserves	Reclassification	Net Income
1. DERIVATIVES RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION [(a)]						
• Changes in the currency impact of forward sales of currencies and forward purchases [(b)] associated with order books and commercial tenders	9,302	(11,495)	(20,797)	(19,025)	-	(1,772)
• Changes in the currency impact of forward sales of currencies (and forward purchases) associated with trade receivables (and accounts payable [(b)])	11,019	(5,448)	(16,467)	2	-	(16,469)
• Changes in the currency impact of forward sales of currencies (and forward purchases) associated with financial receivables (and financial payables)	4,555	380	(4,175)	-	-	(4,175)
• Recognition of premium/discount	(7,140)	(12,965)	(5,825)	-		(5,825)
• Recognition of changes in fair value of interest rate swaps	-	-	-	-	-	-
• Changes in values linked to hedging instruments set up under employee share ownership plans	1,821	1,044	(777)	33	-	(810)
Subtotal: Derivatives	**19,557**	**(28,484)**	**(48,041)**	**(18,990)**	**-**	**(29,051)**
• Of which derivatives – assets	32,451	3,347				
• Of which derivatives – liabilities	12,894	31,831				
• Of which reclassification to assets held for sale	-	-				
2. RECEIVABLES (PAYABLES) USED FOR COMMERCIAL HEDGES						
Order book	(2,084)	2,278	4,362	4,362	-	-
Trade receivables	(2,842)	(1,644)	1,198	-	-	1,198
3. RECEIVABLES (PAYABLES [(b)]) HEDGED IN CURRENCIES – TRANSLATION GAIN/LOSS						
Measurement as at the reporting date exchange rate (trade payables [(b)] and accounts receivable)	(8,507)	7,105	15,612	-	-	15,612
Measurement as at the reporting date exchange rate (financial liabilities and accounts receivable)	(2,254)	(380)	1,874	-	-	1,874
Impact of hedging transactions	**3,870**	**(21,125)**	**(24,995)**	**(14,628)**	**-**	**(10,367)**
4. MEASUREMENT OF OTHER INVESTMENTS IN EQUITY INSTRUMENTS AT FAIR VALUE	-	-	-	-	-	-
TOTAL	**3,870**	**(21,125)**	**(24,995)**	**(14,628)**	**-**	**(10,367)**

(a) Assets and liabilities offset in this table: + = asset, ( ) = liability.

(b) Non-significant amounts.

The change in the fair value of financial instruments hedging foreign exchange risk, which affected equity as at 31 December 2017, was €9.3 million. In 2018, around 82% of the positive change in fair value attached to the order book and commercial tenders at the end of 2017 was transferred from equity to other comprehensive income, under "Group translation gain/loss". This amount represents the impact of the changes in value of foreign exchange hedges for the order book and commercial tenders as at 31 December 2017, which were fully or partially unwound or converted into receivables during 2018.

This corresponds mainly to the hedges of receivables in US dollars, which represented nearly all the hedges with an impact on equity as at 31 December 2018.

Statement of financial position items	As at 31/12/2016	As at 31/12/2017	Changes in 2017 Total	Reserves	Reclassification [c]	Net Income
1. DERIVATIVES RECOGNIZED IN THE STATEMENT OF FINANCIAL POSITION [a]						
• Changes in the currency impact of forward sales of currencies and forward purchases [b] associated with order books and commercial tenders	(24,626)	9,302	33,928	34,100	(1,507)	1,335
• Changes in the currency impact of forward sales of currencies (and forward purchases) associated with trade receivables (and accounts payable [b])	(17,140)	11,019	28,159	183	2,990	24,986
• Changes in the currency impact of forward sales of currencies (and forward purchases) associated with financial receivables (and financial payables)	(18,193)	4,555	22,748	(28)	-	22,776
• Recognition of premium/discount	9,785	(7,140)	(16,925)	(806)	(15,830)	(289)
• Recognition of changes in fair value of interest rate swaps	-	-	-	-	-	-
• Changes in values linked to hedging instruments set up under employee share ownership plans	2,866	1,821	(1,045)	(142)	-	(903)
Subtotal: Derivatives	**(47,308)**	**19,557**	**66,865**	**33,307**	**(14,347)**	**47,905**
• Of which derivatives – assets	57,985	32,451				
• Of which derivatives – liabilities	105,293	12,894				
• Of which reclassification to assets held for sale	-	-				
2. RECEIVABLES (PAYABLES) USED FOR COMMERCIAL HEDGES						
Order book		(2,084)	(2,084)	(3,591)	1,507	-
Trade receivables		(2,842)	(2,842)	-	12,840	(15,683)
3. RECEIVABLES (PAYABLES [b]) HEDGED IN CURRENCIES – TRANSLATION GAIN/LOSS						
Measurement as at the reporting date exchange rate (trade payables [b] and accounts receivable)	20,389	(8,507)	(28,896)	-	-	(28,896)
Measurement as at the reporting date exchange rate (financial liabilities and accounts receivable)	16,907	(2,254)	(19,161)	-	-	(19,161)
Impact of hedging transactions	**(10,012)**	**3,870**	**13,882**	**29,716**	**-**	**(15,835)**
4. MEASUREMENT OF OTHER INVESTMENTS IN EQUITY INSTRUMENTS AT FAIR VALUE	**(8,665)**	**-**	**8,665**	**-**	**-**	**8,665**
TOTAL	**(18,677)**	**3,870**	**22,547**	**29,716**	**-**	**(7,170)**

(a) Assets and liabilities offset in this table: + = asset, ( ) = liability.

(b) Non-significant amounts.

(c) The reclassification concerns hedging operations in the Brazilian subsidiaries.

The change in the fair value of financial instruments hedging foreign exchange risk, which affected equity as at 31 December 2016, was -€24.6 million. In 2017, around 94% of the positive change in fair value attached to the order book and commercial tenders at the end of 2016 was transferred from equity to other comprehensive income, under "Group translation gain/loss". This amount represents the impact of the changes in value of foreign exchange hedges for the order book and commercial tenders as at 31 December 2016, which were fully or partially unwound or converted into receivables during 2017.

This corresponds mainly to the hedges of receivables in US dollars, which represented nearly all the hedges with an impact on equity as at 31 December 2017.

8.2 Information on the nature and extent of market risk and how it is managed by the Group

Market risk is comprised of interest rate, foreign exchange (conversion and transactions), credit and equity risk. Liquidity risk is addressed in Note 16.

INTEREST RATE RISK

Management of medium- and long-term financing within the euro zone is centralized at Vallourec and the sub-holding company Vallourec Tubes.

Total liabilities

As at 31/12/2018	Others loans	Cash
Fixed rate on date granted	2,654,662	-
Variable rate on date granted swapped to fixed rate	-	-
Fixed rate	**2,654,662**	**-**
Variable rate	**142,847**	**739,576**
TOTAL	**2,797,509**	**739,576**

As at 31/12/2017	Others loans	Cash
Fixed rate on date granted	2,381,008	-
Variable rate on date granted swapped to fixed rate	-	-
Fixed rate	**2,381,008**	**-**
Variable rate	**182,331**	**1,021,035**
TOTAL	**2,563,339**	**1,021,035**

The Group is exposed to interest rate risk on its variable rate debt.

The amount of loans with fixed rates on the dates granted primarily consists of bonds and commercial paper issued by Vallourec:

- in August 2012, two long-term private bond issues for a total of €455 million. The amounts and terms of these two private bond issues are €400 million for seven years with an annual coupon of 3.25%, and €55 million for 15 years with an annual coupon of 4.125%;
- on 30 September 2014, a €500 million bond issue, maturing in September 2024, with a fixed annual coupon of 2.25%;
- on 27 September 2017, a €250 million bond issue, consisting of Bonds Convertible and/or Exchangeable for New Shares and/or Existing Shares, maturing in October 2022, with a fixed annual coupon of 4.125%, a 37.5% conversion premium and a 6.89 strike;
- on 11 October 2017, Vallourec issued a €400 million bond, which received a matching contribution on 23 October 2017 in the amount of €150 million (i.e. €550 million in total) maturing in October 2022 with a fixed annual coupon of 6.625%. This bond is callable pursuant to the contractual terms as from 15 October 2020;
- on 12 April 2018, a €400 million bond issue, maturing in October 2023, with a fixed annual coupon of 6.375%. This bond is callable pursuant to the contractual terms as from 15 October 2020;
- outstanding commercial paper in the amount of €161.4 million.

Furthermore, in December 2009, Vallourec Soluções Tubulares do Brasil took out a loan with BNDES (Banco National de Desenvolvimento Econômico e Social). This 4.5% fixed-rate loan was repaid in January 2018. Vallourec Soluções Tubulares do Brasil also concluded a fixed-rate finance lease in 2010.

As at 31 December 2018, financial debt exposed to changes in variable interest rates was €142.8 million (about 5% of total gross debt).

No significant line of fixed-rate financing will reach contractual maturity during the 12 months after 31 December 2018, except for:

- a private placement of €400 million maturing in August 2019;
- €161.4 million in outstanding commercial paper maturing in more than one year;
- the JP Morgan bilateral line at Vallourec Star in the amount of €69.9 million maturing in March 2019;
- €32.3 million for various lines of financing in the Group's subsidiaries.

Given the Group's interest rate risk hedging policy, the impact of a 1% rise in short-term rates in the euro zone, on Brazilian and Chinese rates and UK and US money market rates would result in a €1.4 million increase in the Group's annual financial expenses, based on an assumption of complete stability of the financial liabilities and constant exchange rates, and after taking into account the effects of any hedging instruments. This impact does not take into account the interest rate risk on commercial paper with a more than one year maturity or on short-term cash investments (of no more than three months).

FOREIGN CURRENCY TRANSLATION RISK

The assets, liabilities, revenues and expenses of the Group's subsidiaries are expressed in various currencies. The Group's financial statements are presented in euros. The assets, liabilities, revenues and expenses denominated in currencies other than the euro have to be translated into euros at the applicable rate so that they can be consolidated.

If the euro rises (or falls) against another currency, the value in euros of the various assets, liabilities, revenues and expenses initially recognized in that other currency will fall (or rise). Therefore, changes in the value of the euro may have an impact on the value in euros of the assets, liabilities, revenues and costs not denominated in euros, even if the value of these items in their original currency has not changed.

In 2018, net income, Group share was generated to a significant extent by subsidiaries that prepare their financial statements in currencies other than the euro (mainly in US dollars and Brazilian reals). A 10% change in exchange rates would have had an upward or downward impact on net income, Group share of around €3.1 million.

In addition, the Group's sensitivity to long-term foreign exchange rate risk is reflected in the changes that have occurred in recent years in the foreign currency translation reserves booked to equity (-€648.5 million as at 31 December 2018), which, in recent years, have been linked mainly to movements in the US dollar and Brazilian real.

Foreign currency translation reserve – Group share	31/12/2017	31/12/2018
USD	193,059	251,022
GBP	(12,107)	(12,031)
BRL	(738,432)	(880,712)
CNY	19,532	16,192
Others	(26,513)	(22,930)
TOTAL	**(564,461)**	**(648,459)**

TRANSACTION RISK

The Group is subject to exchange rate risks due to its business exposure linked to sales and purchase transactions entered into by some of its subsidiaries in currencies other than their functional currency.

The main foreign currency involved is the US dollar (USD): a significant portion of Vallourec's transactions (approximately 35% of Group sales in 2018) is invoiced in US dollars by companies whose functional currency is not the US dollar.

Exchange rate fluctuations between the euro, the Brazilian real (BRL) and the US dollar may therefore affect the Group's operating margin. Their impact is, however, very difficult to quantify for two reasons:

1. there is an adjustment effect on selling prices denominated in US dollars related to market conditions in the various sectors of activity in which Vallourec operates;
2. certain sales and purchases, even though they are denominated in euros or Brazilian reals, are influenced by the level of the US dollar. They are therefore indirectly and at some time in the future affected by movements in the US currency.

The Group actively manages its exposure to foreign exchange risk to reduce the sensitivity of its net profits to currency fluctuations by setting up hedges once the order is placed and sometimes once a quotation is given.

Orders, receivables, payables and operating cash flows, are thus hedged with financial instruments, mainly forward purchases and sales.

Order cancellations could therefore result in the cancellation of hedges in place, leading to the recognition in the consolidated income statement of gains and losses with regard to these canceled hedges.

We estimate that a 10% rise or fall in the currencies used in all hedges implemented by the Group would result in an €89 million decrease or increase in the currency impact recognized in consolidated equity as at 31 December 2018. Most of these amounts would be due to changes in the US dollar against the euro, and to a lesser extent, the Brazilian real against the euro.

To be eligible for hedge accounting as defined under IAS 39, the Vallourec Group has developed its cash management and invoicing systems to facilitate the traceability of hedged transactions throughout the duration of the hedging instruments.

As at 31 December 2018, the following amounts were outstanding under forward foreign exchange contracts to hedge purchases and sales denominated in foreign currencies:

Hedging contracts with regard to commercial transactions – Exchange rate risk	2017	2018
Forward exchange contract: forward sales	805,754	1,158,870
Forward exchange contract: forward purchases	64,563	30,339
Currency options: sales	-	-
Currency options: purchases	-	-
Raw materials and energy – purchases, options	-	-
TOTAL	**870,317**	**1,189,209**

Contract maturities as at 31 December 2018

Contracts on commercial transactions	Total	< 1 year	1 to 5 years	> 5 years
Exchange contracts: forward sales	1,158,870	1,082,223	76,647	-
Exchange contracts: forward purchases	30,339	30,339	-	-
Currency options: sales	-	-	-	-
Currency options: purchases	-	-	-	-
Raw materials and energy – purchases, options	-	-	-	-
TOTAL	**1,189,209**	**1,112,562**	**76,647**	**-**

Forward sales (€1,159 million of the €1,189 million total) correspond mainly to sales of US dollars. These contracts were transacted at an average forward EUR/USD rate of 1.18 and an average forward USD/BRL rate of 3.65.

In 2018, as in 2017, the hedges entered into generally covered an average period of about 10 months and mainly hedged highly probable future transactions and foreign currency receivables.

In addition to hedges on commercial transactions, Vallourec has implemented hedging contracts for financial loans and receivables denominated in foreign currencies:

- forward sales for 165.0 million in US dollars (€143.8 million);
- forward sales for 270.0 million in Chinese yuan (€33.5 million).

These instruments are intended to hedge either the debt denominated in USD, or the foreign currency loans established by the financial holding company Vallourec Tubes in the currency of the subsidiaries receiving them. The forward purchases and sales mature at various times in 2018, as and when the hedged loans and borrowings mature.

Other than its foreign-currency-denominated borrowings, Vallourec does not hedge any of the other foreign currency assets and liabilities in its consolidated statement of financial position (foreign currency translation risks).

CREDIT RISKS

Vallourec is subject to credit risk on financial assets for which no impairment provision has been made and whose non-recovery could affect the Company's results and financial position.

The Group has identified four main types of receivables that have these characteristics:

- 1% building loans granted to Group employees;
- security deposits paid in connection with tax disputes and the tax receivables due to the Group in Brazil;
- trade and other receivables;
- derivatives that have a positive fair value.

1. 1% building loans granted to the Group's employees: these loans do not expose the Group to any credit risk since the full amount of the loan is written off as soon as there is any delay in the collection of the amounts due. It should be noted that these loans are valued using the effective interest rate method applied to the expected cash flows until the maturity date of these loans (contractual interest rates may be lower).
2. Security deposits and tax receivables due to the Group in Brazil: there is no specific risk in respect of these receivables, even if the outcome of the disputes is unfavorable, since the risk has already been assessed and a provision recognized in respect of these receivables, and the funds have already been paid in full or in part.
3. The Group's policy on the impairment of trade and other receivables is to recognize a provision when indications of impairment are identified. The impairment is equal to the difference between the carrying amount of the asset and the present value of expected future cash flows, taking into account the position of the counterparty.

   The Group considers that, as at 31 December 2018, there is no reason to assume that there is any risk in respect of receivables for which no provision has been made and which are less than 90 days overdue. Trade receivables more than 90 days past due and not impaired amounted to €55.6 million as at 31 December 2018, or 9% of the Group's total net trade receivables.

Vallourec considers that the risk is limited given its existing customer risk management procedures, which include:

- the use of credit insurance and documentary credits;
- the long-standing nature of the Group's commercial relations with major customers;
- the commercial collection policy.

Vallourec remains subject to country risk, which could impact the payment of some of its receivables.

In addition, as at 31 December 2018, trade receivables not yet due amounted to €419.8 million, or 70% of total net trade receivables;

4. As concerns the derivatives that have a positive fair value, the Group only deals with highly-rated counterparties. The credit risk is considered to be insignificant.

The maturities of these trade receivables are as follows (in € thousand):

As at 31/12/2018	0 to 30 days	30 to 60 days	60 to 90 days	90 to 180 days	> 180 days	Total
Trade receivables outstanding	302,197	81,539	9,276	26,165	596	419,773

EQUITY RISK

Treasury shares held by Vallourec as at 31 December 2018 include shares allocated to allocation operations for certain members of the staff, executive management or corporate officers of the Group.

In this context, Vallourec holds:

- 155 treasury shares acquired in 2011 under the share buyback plan of 7 June 2011, after definitive allocation of 27,534 shares in 2012, 86,377 shares in 2013, 91,929 shares in 2014, 108,600 shares in 2015, 30,524 shares in 2016, 54,871 shares in 2017, and 10 shares in 2018 under the various performance share plans;
- 1,131 treasury shares acquired in 2012 under the share buyback plan of 31 May 2012, upon the definitive allocation of 94,600 shares in 2014 and 225,684 shares in 2016, and 78,585 shares in 2017 under the various performance share plans;
- 89,753 treasury shares acquired in 2014 after the definitive allocation of 128,689 shares in 2017 and 81,558 shares in 2018 for the various performance share plans.

The Management Board, in consultation with the Supervisory Board, has decided to allocate these treasury shares to cover the Group's performance share and employee share ownership plans.

On 18 December 2017, Vallourec decided to terminate the liquidity contract entered into on 26 June 2012 with Rothschild & Cie Banque.

To the best of its knowledge, the Group had no other exposure to equity risk as at 31 December 2018.

Classification and measurement of financial assets and liabilities

The amounts recognized in the statement of financial position are based on the measurement methods used for each financial instrument.

2018	Notes	Category [a]	Gross value as at 31/12/2018	Amortized cost	Fair value through equity	Fair value through profit or loss
ASSETS						
Other non-current assets	**4**					
Listed equity interests		A-FVOCI	-	-	-	-
Other equity interests		A-FVOCI	5,642	-	5,642	-
Loans		A-FVOCI	20,425	20,425	-	-
Other financial assets		AC	39,092	39,092	-	-
Trade and other receivables	**7**	**AC**	**600,155**	**600,155**	**-**	**-**
Derivatives – assets	**8**					
Hedging financial instruments		CFH	631	-	631	-
Hedging financial instruments [d]		A-FVTPL	2,716	-	-	2,716
Speculative financial instruments		A-FVTPL	-	-	-	-
Other current assets	**9**	**L&R**	**215,931**	**215,931**	**-**	**-**
Cash and cash equivalents	**10**	**A-FVTPL**	**739,576**	**-**	**-**	**739,576**
LIABILITIES						
Bank loans and other borrowings [b] [c]	**16**	**AC-EIR**	**117,415**	**117,415**	**-**	**-**
Others	**16**	**AC-EIR**	**509,424**	**509,424**	**-**	**-**
Finance leases	**16**	**AC-EIR**	**50,791**	**50,791**	**-**	**-**
Bond issues	**16**	**AC-EIR**	**1,717,647**	**1,717,647**	**-**	**-**
Non-convertible bond issues	**16**	**AC-EIR**	**399,705**	**399,705**	**-**	**-**
Current bank overdrafts	**16**	**AC-EIR**	**2,527**	**2,527**	**-**	**-**
Trade and other payables		**AC**	**582,272**	**582,272**	**-**	**-**
Derivatives – liabilities	**8**					
Hedging financial instruments		CFH	11,771	-	11,771	-
Hedging financial instruments		L-FVTPL	19,704	-	-	19,704
Speculative financial instruments		L-FVTPL	356	-	-	356
Other current liabilities	**20**	**AC**	**262,581**	**262,581**	**-**	**-**

(a) *A-FVTPL: Financial assets measured at fair value through profit or loss;*
AC: Amortized cost;
A-FVOCI: Financial assets measured at fair value in Other Comprehensive Income (not recyclable);
CFH: Cash flow hedges;
L-FVTPL: Financial liabilities measured at fair value through profit or loss;
AC-EIR: Amortized cost according to the effective interest rate method.

(b) *Borrowings classified within non-current liabilities maturing in more than 12 months.*

(c) *Variable rate borrowings for which interest rate swaps have been entered into are accounted for using the cash flow hedge method. Changes in the fair value of the swap contracts, linked to interest rate movements, are recognized in equity to the extent of their effectiveness. Otherwise, they are recognized under financial income.*

(d) *Including the Value 14, Value 15, Value 16, and Value 17 warrants, with a fair value of €0.4 million as at 31 December 2018.*

Financial instruments measured at fair value are classified by category on the basis of their measurement method. Fair value is measured:

(A) mainly based on quoted prices on an active market; equity securities are valued this way;

(B) on the basis of observable methods and data and with reference to the financial markets (yield curve, forward prices, etc.).

			Fair value		
2018 Balance sheet headings and classes of instruments	**Category**	**Total fair value on statement of financial position**	**Listed prices (A)**	**Internal model with observable inputs (B)**	**Internal model with unobservable inputs**
ASSETS					
Listed equity interests	A-FVOCI	-	-	-	-
Other equity interests	A-FVOCI	5,642	-	5,642	-
Derivatives – assets					
Hedging financial instruments	CFH	3,347	-	3,347	-
Speculative financial instruments	A-FVTPL	-	-	-	-
Cash and cash equivalents	**A-FVTPL**	**739,576**	**739,576**	**-**	**-**
LIABILITIES					
Derivatives – liabilities					
Hedging financial instruments	CFH	31,475	-	31,475	-
Speculative financial instruments	L-FVTPL	356	-	356	-

2017	Notes	Category (a)	Gross value as at 31/12/2017	Amortized cost	Fair value through equity	Fair value through profit or loss
ASSETS						
Other non-current assets	*4*					
Listed equity interests		A-FVOCI	-	-	-	-
Other equity interests		A-FVOCI	5,745	-	5,745	-
Loans		A-FVOCI	21,709	21,709	-	-
Other financial assets		AC	35,922	35,922	-	-
Trade and other receivables	*7*	**AC**	**569,206**	**569,206**	**-**	**-**
Derivatives – assets	*8*					
Hedging financial instruments		CFH	12,478	-	12,478	
Hedging financial instruments (d)		A-FVTPL	18,556			18,556
Speculative financial instruments		A-FVTPL	1,417	-	-	1,417
Other current assets	*9*	**L&R**	**230,612**	**230,612**	**-**	**-**
Cash and cash equivalents	*10*	**A-FVTPL**	**1,021,035**	**-**	**-**	**1,021,035**
LIABILITIES						
Bank loans and other borrowings (b) (c)	*16*	**AC-EIR**	**137,279**	**137,279**	**-**	**-**
Others	*16*	**AC-EIR**	**634,566**	**634,566**	**-**	**-**
Finance leases	*16*	**AC-EIR**	**65,874**	**65,874**		
Bond issue	*16*	**AC-EIR**	**1,714,908**	**1,714,908**		
Current bank overdrafts	*16*	**AC-EIR**	**10,712**	**10,712**	**-**	**-**
Trade and other payables		**AC**	**581,622**	**581,622**	**-**	**-**
Derivatives – liabilities	*8*					
Hedging financial instruments		CFH	4,592	-	4,592	-
Hedging financial instruments		L-FVTPL	8,302	-	-	8,302
Speculative financial instruments		L-FVTPL	-	-	-	-
Other current liabilities	*20*	**AC**	**305,881**	**305,881**	**-**	**-**

(a) A-FVTPL: Financial assets measured at fair value through profit or loss;
AC: Amortized cost;
A-FVOCI: Financial assets measured at fair value in Other Comprehensive Income (not recyclable);
CFH: Cash flow hedges;
L-FVTPL: Financial liabilities measured at fair value through profit or loss;
AC-EIR: Amortized cost according to the effective interest rate method.

(b) Borrowings classified within non-current liabilities maturing in more than 12 months.

(c) Variable rate borrowings for which interest rate swaps have been entered into are accounted for using the cash flow hedge method. Changes in the fair value of the swap contracts, linked to interest rate movements, are recognized in equity to the extent of their effectiveness. Otherwise, they are recognized under financial income.

(d) Including the Value 13, Value 14, Value 15, Value 16 and Value 17 warrants, whose fair value as at 31 December 2017 was €0.8 million.

Financial instruments measured at fair value are classified by category on the basis of their measurement method. Fair value is measured:

(A) mainly based on quoted prices on an active market; equity securities are valued this way;

(B) on the basis of observable methods and data and with reference to the financial markets (yield curve, forward prices, etc.).

2017 Balance sheet headings and classes of instruments	Category	Total fair value on statement of financial position	Fair value Listed prices (A)	Internal model with observable inputs (B)	Internal model with unobservable inputs
ASSETS					
Listed equity interests	A-FVOCI			-	-
Other equity interests	A-FVOCI	5,745	-	5,745	-
Derivatives – assets					
Hedging financial instruments	CFH	31,034	-	31,034	-
Speculative financial instruments	A-FVTPL	1,417	-	1,417	-
Cash and cash equivalents	**A-FVTPL**	**1,021,035**	**1,021,035**	**-**	**-**
LIABILITIES					
Derivatives – liabilities					
Hedging financial instruments	CFH	12,894	-	12,894	-
Speculative financial instruments	L-FVTPL		-		-

Note 9 Other current assets

	Employee-related receivables and recoverable payroll taxes	Tax receivables excluding income tax	Prepaid expenses	Government, income tax	Other receivables	Total
As at 31/12/2016	**4,855**	**111,556**	**51,023**	**38,653**	**76,932**	**283,019**
Impact of changes in exchange rates	(352)	(9,798)	(3,446)	(6,077)	(4,632)	(24,305)
Provision allowances or reversals	-	-	-	-	(1,071)	(1,071)
Reclassification to assets held for sale and discontinued operations	(38)	-	(311)	-	(502)	(851)
Other changes	(601)	(6,066)	(3,629)	5,428	(21,312)	(26,180)
As at 31/12/2017	**3,864**	**95,692**	**43,637**	**38,004**	**49,415**	**230,612**
Impact of changes in exchange rates	(220)	(6,324)	(181)	(2,645)	(356)	(9,726)
Provision allowances or reversals	-	-	-	-	306	306
Other changes	1,785	(4,484)	(924)	673	(2,311)	(5,261)
AS AT 31/12/2018	**5,429**	**84,884**	**42,532**	**36,032**	**47,054**	**215,931**

Note 10 Cash and cash equivalents

	Investment securities (gross)	Cash and cash equivalents	Total
As at 31/12/2016	**950,476**	**336,246**	**1,286,722**
Impact of changes in exchange rates	(45,369)	1,969	(43,400)
Other changes	(99,740)	(122,547)	(222,287)
As at 31/12/2017	**805,367**	**215,668**	**1,021,035**
Impact of changes in exchange rates	(29,035)	356	(28,679)
Other changes	(374,437)	121,657	(252,780)
AS AT 31/12/2018	**401,895**	**337,681**	**739,576**

"Cash and cash equivalents" comprises cash in bank checking accounts and investment securities (shares in short-term cash UCITS and mutual and investment funds) that are immediately available (not pledged), risk-free and have a low volatility level.

Note 11 Assets held for sale and discontinued operations

Net values	31/12/2017	31/12/2018
Assets held for sale and discontinued operations	64,119	-
Liabilities held for sale and discontinued operations	(12,654)	-
NET CARRYING AMOUNT OF ASSETS/LIABILITIES HELD FOR SALE	**51,465**	**-**

These assets and liabilities are as follows:

	31/12/2017	31/12/2018
Non-current assets	19,100	-
Current assets	45,019	-
Non-current liabilities	(1,654)	-
Current liabilities	(11,000)	-
NET CARRYING AMOUNT OF ASSETS/LIABILITIES HELD FOR SALE	**51,465**	**-**

Vallourec finalized the sale of its Drilling Products activity in fiscal year 2018.

Note 12 Change in cash flows

Change in Working Capital Requirements

Gross values	31/12/2017	Translation difference	Change	Reclassification and other	31/12/2018
Inventories	1,183,837	(13,043)	136,876	(33,076)	1,274,594
Trade receivables	603,653	(3,710)	17,008	(7,113)	609,838
Trade payables	(581,622)	(8,335)	(4,741)	12,426	(582,272)
Working Capital Requirements	**1,205,868**	**(25,088)**	**149,143**	**(27,763)**	**1,302,160**
Other receivables and payables	(70,877)	1,761	22,536	49,399	2,819
Operating Working Capital Requirements (1)	**1,134,991**	**(23,327)**	**171,679**	**21,636**	**1,304,979**
Impact of hedging instruments (2)			**(16,476)**		
TOTAL (1) + (2)			**155,203**		
Change in Operating Working Capital Requirements under the cash flow statement			(155,203)		

The change in other receivables and payables during 2018 primarily corresponds to the recovery of tax credits in Brazil.

Gross values	31/12/2016	Translation difference	Change	Reclassification and other	31/12/2017
Inventories	1,240,512	(92,756)	81,919	(45,838)	1,183,837
Trade receivables	579,168	(47,526)	85,992	(13,981)	603,653
Trade payables	(530,391)	38,567	(103,566)	13,768	(581,622)
Working Capital Requirements	**1,289,289**	**(101,715)**	**64,345**	**(46,051)**	**1,205,868**
Other receivables and payables	82,678	(3,549)	(148,045)	(1,961)	(70,877)
Operating Working Capital Requirements (1)	**1,371,967**	**(105,264)**	**(83,700)**	**(48,012)**	**1,134,991**
Impact of hedging instruments (2)			**23,145**		
TOTAL (1) + (2)			**(60,555)**		
Change in Operating Working Capital Requirements under the cash flow statement			60,555		

Change in financial liabilities

	31/12/2017	Translation difference	Proceeds drawn from new borrowings	Repayments of borrowings	Current/ non-current reclassifications and other	31/12/2018
Non-current financial liabilities	1,817,119	(10,052)	403,324	(1,160)	(412,594)	1,796,637
Current financial liabilities	746,220	(22,212)	945,827	(1,069,144)	400,181	1,000,872
Financial liabilities (1)	**2,563,339**	**(32,264)**	**1,349,151**	**(1,070,304)**	**(12,413)**	**2,797,509**
Impact of hedging instruments and other (2)			**(3,180)**	**(11,116)**		
TOTAL (1) + (2)			**1,345,971**	**(1,081,420)**		
Change in financial liabilities in the statement of cash flows			1,345,971	(1,081,420)		

	31/12/2016	Translation difference	Proceeds drawn from new borrowings	Repayments of borrowings	Current/ non-current reclassifications and other	31/12/2017
Non-current financial liabilities	1,120,648	(18,593)	821,888	(6,497)	(100,327)	1,817,119
Current financial liabilities	1,453,096	(76,477)	129,958	(846,005)	85,648	746,220
Financial liabilities (1)	**2,573,744**	**(95,070)**	**951,846**	**(852,502)**	**(14,679)**	**2,563,339**
Impact of hedging instruments and other (2)			**(25,088)**	**27,459**		
TOTAL (1) + (2)			**926,758**	**(825,043)**		
Change in financial liabilities in the statement of cash flows			926,758	(825,043)		

Note 13 Equity

Capital

Vallourec's issued capital is comprised of 457,987,760 ordinary shares with a nominal value of €2 per share, fully paid-up.

2018

There was no change in capital in fiscal year 2018.

2017

On 14 December 2017, under the Value 17 employee share ownership plan 6,749,755 new shares were subscribed at a price of €4.00 for the leveraged plan and €3.77 for the standard plan, for a capital increase of €26.6 million, including issue premium net of expenses.

RESERVES, FINANCIAL INSTRUMENTS

Under IAS 39 – Financial Instruments, postings to this reserve account are made for two types of transactions:

- effective currency hedges assigned to the order book and commercial tenders. Changes in the currency impacts at year-end are recognized in equity;
- variable rate borrowings for which interest rate swaps (fixed rate) have been contracted. These are accounted for in accordance with the cash flow hedge method. Changes in the fair value of the swap contracts, linked to interest rate movements, are recognized in equity.

FOREIGN CURRENCY TRANSLATION RESERVE

This reserve arises as a result of the translation of the equity of subsidiaries outside the euro zone. The change in the reserve corresponds to fluctuations in exchange rates used to translate the equity and net profit of these subsidiaries. Components of the reserve are reversed to income only in the case of a partial or total disposal and loss of control of the foreign entity.

	USD	GBP	Brazilian real	Chinese yuan	Others	Total
As at 31/12/2016	**343,878**	**(11,583)**	**(529,697)**	**34,276**	**(13,448)**	**(176,574)**
Change	(150,819)	(524)	(208,735)	(14,744)	(13,065)	(387,887)
As at 31/12/2017	**193,059**	**(12,107)**	**(738,432)**	**19,532**	**(26,513)**	**(564,461)**
Change	57,963	76	(142,280)	(3,340)	3,583	(83,998)
AS AT 31/12/2018	**251,022**	**(12,031)**	**(880,712)**	**16,192**	**(22,930)**	**(648,459)**

Main exchange rates used (euro/currency): translation of balance sheet items (closing rate) and income statement items (average rate).

For €1.00	USD	GBP	BRL	CNY
2017				
Average rate	1.13	0.88	3.61	7.63
Closing rate	1.20	0.89	3.97	7.80
2018				
Average rate	1.18	0.88	4.31	7.81
Closing rate	1.15	0.89	4.44	7.88

Note 14 Earnings per share

Basic earnings per share are calculated by dividing the net income for the year attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding in the same period.

Diluted earnings per share are calculated by dividing the net income for the year attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding in the same period, adjusted for the dilution effect of options.

Details of the earnings and numbers of shares used to calculate basic and diluted earnings per share are presented below:

Earnings per share	2017	2018
Net income (loss) attributable to ordinary shareholders for basic earnings per share	**(536,691)**	**(502,455)**
Weighted average number of ordinary shares for basic earnings per share	451,552,377	457,987,760
Weighted average number of treasury shares for basic earnings per share	(2,628,832)	(117,878)
Weighted average number of shares for basic earnings per share	448,923,545	457,869,882
EARNINGS PER SHARE *(in €)*	**(1.2)**	**(1.1)**
Earnings per share comparable to 2018 *(in €)*	(1.2)	
Dilution effect – stock purchase and subscription options and performance shares	-	-
Weighted average number of ordinary shares for diluted earnings per share	448,923,545	457,869,882
DILUTED EARNINGS PER SHARE *(in €)*	**(1.2)**	**(1.1)**
Earnings per share comparable to 2018 *(in €)*	(1.2)	

Dividends paid during the year:	2017	2018
• for the previous fiscal year *(in €)*	-	-
• interim dividend for the current fiscal year *(in €)*	-	-

Note 15 Non-controlling interests

	Reserves	Translation difference	Net income/(loss)	Total
As at 31/12/2017	454,300	27,283	(23,038)	458,545
AS AT 31/12/2018	**435,057**	**24,874**	**2,088**	**462,019**

Contribution at reporting date	As at 31/12/2017	As at 31/12/2018
Main American entities	268,337	286,234
Others	190,208	175,785
TOTAL	**458,545**	**462,019**

Contributions to income/(loss)	As at 31/12/2017	As at 31/12/2018
Main American entities	(23,110)	5,057
Others	72	(2,969)
TOTAL	**(23,038)**	**2,088**

Non-controlling interests are primarily held by Sumitomo Corp. and Nippon Steel Sumitomo Metal Corp.

The amounts presented are the amounts which appear in the financial statements for wholly-owned entities, which were prepared in accordance with IFRS, upon fair value adjustments made at the time of acquisition, and adjustments for standardization with the Group's accounting principles.

Main American entities	As at 31/12/2017	As at 31/12/2018
Current assets	294,561	361,076
Non-current assets	1,347,957	1,325,931
Current liabilities	507,806	237,010
Non-current liabilities	103,753	349,110
Net assets	**1,030,959**	**1,100,888**
Non-controlling interests	268,337	286,234
Revenue	875,544	1,103,159
Net income	(90,483)	20,167
Other comprehensive income (loss)	(132,449)	43,911
Total comprehensive income	**(222,932)**	**64,078**
Net income attributable to non-controlling interests	(23,110)	5,057
Other items of comprehensive income attributable to non-controlling interests	(38,548)	12,843
Cash flow from operating activities	(24,937)	76,877
Cash flow used in investing activities	(19,744)	(22,160)
Cash flow from (used in) financing activities	(53,798)	205,671
Impact of changes in exchange rates	28,083	(3,913)
Net cash flows	**(70,396)**	**256,475**

Note 16 Bank loans and other borrowings

Liquidity risk

The Group's financial resources are composed of bank financing and market financing.

The majority of long-term and medium-term bank financing has been put in place in Europe *via* Vallourec and to a lesser extent *via* the subsidiaries in Brazil and the United States (see below). Vallourec's credit lines (€2,150 million) do not benefit from any securities or guarantees.

Market financing is arranged exclusively by Vallourec.

IN EUROPE

In February 2014, Vallourec established a confirmed credit line for the amount of €1.1 billion, maturing in February 2019, plus two one-year extension options. In addition to the first one-year extension obtained for €1.078 billion, the second extension was granted in July 2016 for the sum of €989 million, which was then raised to 1,034 million in July 2017. The new maturity date is in 2021. This credit line is available for the Group's general funding purposes. As at 31 December 2018 this line had not been drawn.

In June 2015, Vallourec agreed to a confirmed bilateral line of €90 million until February 2019 with two one-year extension options, which were granted in July 2016. As at 31 December 2018 this line had not been drawn.

In September 2015, Vallourec established a confirmed credit facility for €400 million, maturing in July 2019, with a one-year extension option, which was granted in July 2016 for the full amount, and maturity rescheduled for 2020. As at 31 December 2018 this line had not been drawn.

In May 2016, Vallourec established a revolving credit facility for €450 million maturing in February 2020. As at 31 December 2018 this line had not been drawn.

In May 2018, Vallourec took out a credit line for €110 million with the European Investment Bank maturing in April 2027. This line of credit is available to finance the Group's Research & Development, and Digitization projects. As at 31 December 2018 this line had not been drawn.

Each of these bank facilities requires Vallourec to maintain its consolidated net debt-to-equity ratio ("bank covenant") at less than or equal to 100%, calculated as at 31 December each year. The Group's consolidated debt to equity ratio was 72% as at 31 December 2018, as calculated under the Group's bank loan covenant. As defined in the bank loan agreements, the banking covenant ratio is the ratio of the Group's consolidated net debt (including the shareholder's loan in Brazil) to the Group's equity, restated for gains and losses on derivatives and for foreign currency translation reserves (gains and losses of consolidated subsidiaries in foreign currency).

The calculation is shown in the table below:

Banking covenant	2017	2018
Net debt	**1,542,304**	**2,057,933**
Shareholder loan	71,702	28,892
Net debt restated (A)	**1,614,006**	**2,086,825**
Equity	2,884,575	2,264,276
Foreign currency translation reserve*	537,178	623,585
Reserves – changes in fair value of financial instruments*	(7,292)	8,311
Equity restated (1)	**3,414,461**	**2,896,172**
RATIO OF BANKING COVENANT RESTATED = (A)/(1)	**47%**	**72%**

* *Including minority interests.*

In addition to bank financing, the Group has sought to diversify its funding sources by using market financing. For example, Vallourec launched a commercial paper program on 12 October 2011 to meet its short-term needs. The program has a €1 billion ceiling.

At 31 December 2018, Vallourec had an outstanding debt of €161.4 million for maturities of up to one year. This commercial paper program was rated B by Standard & Poor's.

In August 2012, Vallourec also issued two long-term private bonds totaling €455 million. The amounts and terms of these two private bond issues are €400 million for seven years with an annual coupon of 3.25%, and €55 million for 15 years with an annual coupon of 4.125%.

On 30 September 2014, Vallourec issued a €500 million bond, maturing in September 2024, with a fixed annual coupon of 2.25%.

On 27 September 2017, Vallourec issued a €250 million bond issue, consisting of Bonds Convertible into New Shares and/or Exchangeable for Existing Shares, maturing in October 2022, with a fixed annual coupon of 4.125%, a 37.5% conversion premium and a 6.89 strike.

On 11 October 2017, Vallourec issued a €400 million bond, which received a matching contribution on 23 October 2017 in the amount of €150 million (i.e. €550 million in total) maturing in October 2022 with a fixed annual coupon of 6.625%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

On 12 April 2018, Vallourec issued a €400 million bond, maturing in October 2023, with a fixed annual coupon of 6.375%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

As at 31 December 2018, the market value of these fixed-rate bonds was €403.9 million, €61.7 million, €525.3 million, €554.6 million and €404.9 million, respectively.

These bond issues were intended to diversify and increase the amount and extend the maturity of the financial resources available to the Group.

These bond issues specifically include a change-of-control clause that would trigger the mandatory early repayment of the bonds at the request of each bondholder in the event of a change of control of the Company (in favor of a person or a group of people acting in concert) leading to a downgrade of Vallourec's financial rating.

In addition, these bonds may be subject to a request for prepayment should any of the common default scenarios for this type of transaction arise. Early redemption may also be requested in some cases by either the Company or the bondholder, particularly in respect of a change in Vallourec's position or tax status.

As at 31 December 2018, the Group complied with its commitments and the terms and conditions for obtaining and maintaining all of the above facilities. Together, the above resources were sufficient to cover the Group's cash requirements as at 31 December 2018.

IN BRAZIL

In 2010, Vallourec Soluções Tubulares do Brasil entered into a finance lease with a nominal value of BRL 570 million relating to equipment needed to operate the plant at Jeceaba. As at 31 December 2018, the residual amount outstanding on this finance lease was BRL 251 million.

IN THE UNITED STATES

Vallourec Star benefits from a bilateral bank line of credit established in 2016 for a total amount of USD 80 million, maturing in March 2019. The amount used as at 31 December 2018 totaled USD 80 million. This line contains clauses relating to the indebtedness of Vallourec Star and a change of control clause.

Financial liabilities – Non-current liabilities

	Bank borrowings	Finance lease	Convertible bond issue	Non-convertible bond issue	Other borrowings	Total
As at 31/12/2016	**56,394**	**113,031**	**-**	**950,373**	**850**	**1,120,648**
Issuance of new debt	4,685	27,505	247,015	542,283	400	821,888
Repayments	(6,249)	(245)	-	-	(3)	(6,497)
Impact of changes in exchange rates	(6,309)	(12,284)	-	-	-	(18,593)
Current/non-current reclassifications	(13,459)	(62,133)	-	-	-	(75,592)
Other changes	-	-	(24,763)	-	28	(24,735)
As at 31/12/2017	**35,062**	**65,874**	**222,252**	**1,492,656**	**1,275**	**1,817,119**
Issuance of new debt	880	-	5,127	397,317	-	403,324
Repayments	(160)	(276)	-	-	(724)	(1,160)
Impact of changes in exchange rates	(3,598)	(6,454)	-	-	-	(10,052)
Current/non-current reclassifications	(4,171)	(8,353)	-	(399,705)	-	(412,229)
Other changes	(449)	-	-	-	84	(365)
AS AT 31/12/2018	**27,564**	**50,791**	**227,379**	**1,490,268**	**635**	**1,796,637**

Financial liabilities – Current liabilities

	Bank overdrafts	Non-convertible bond issue	Bank borrowings (< 1 year)	Accrued interest not yet due on bank borrowings	Other financial liabilities (< 1 year)	Total
As at 31/12/2016	**9,608**	**649,828**	**158,162**	**33,443**	**602,055**	**1,453,096**
Current/non-current reclassifications	-	-	13,459		62,133	75,592
Impact of changes in exchange rates	(22,142)	-	(14,312)	(13)	(40,010)	(76,477)
Other changes	23,246	(649,828)	(55,092)	(14,392)	(9,925)	(705,991)
As at 31/12/2017	**10,712**	**-**	**102,217**	**19,038**	**614,253**	**746,220**
Current/non-current reclassifications	-	399,705	4,171	-	8,353	412,229
Impact of changes in exchange rates	-	-	2,434	(1)	(24,645)	(22,212)
Other changes	(8,185)	-	(18,971)	6,254	(114,463)	(135,365)
AS AT 31/12/2018	**2,527**	**399,705**	**89,851**	**25,291**	**483,498**	**1,000,872**

Other financial liabilities primarily correspond to outstanding commercial paper (€161 million) and to ACC ACE in Brazil (€302 million).

Debt by currency

	USD	EUR	BRL	Others	Total
As at 31/12/2017 – in thousands of currency unit	336,267	2,136,553	449,903	n/a	n/a
As at 31/12/2017 – in € thousand	280,386	2,136,553	113,243	33,157	2,563,339
As at 31/12/2018 – in thousands of currency unit	**325,956**	**2,398,712**	**391,156**	**n/a**	**n/a**
AS AT 31/12/2018 – IN € THOUSAND	**284,678**	**2,398,712**	**88,019**	**26,100**	**2,797,509**

Breakdown by maturity of non-current loans and other financial liabilities (> 1 year)

	> 1 year	> 2 years	> 3 years	> 4 years	5 years or more	Total
As at 31/12/2017	**413,043**	**12,287**	**13,638**	**780,004**	**598,147**	**1,817,119**
Finance leases	8,298	8,315	8,354	8,398	17,426	50,791
Other non-current borrowings	2,713	3,421	776,641	399,076	563,995	1,745,846
AS AT 31/12/2018	**11,011**	**11,736**	**784,995**	**407,474**	**581,421**	**1,796,637**

Breakdown by maturity of current loans and other financial liabilities

2018	< 3 months	> 3 months and < 1 year	Total
Non-convertible bond issues	-	399,705	399,705
Bank borrowings	77,116	12,735	89,851
Other borrowings	258,088	217,144	475,232
Finance lease liabilities	2,089	6,277	8,366
Accrued interest on borrowings	96	25,195	25,291
Bank overdrafts (negative cash and cash equivalents)	2,423	4	2,427
AS AT 31/12/2018	**339,812**	**661,060**	**1,000,872**

Debt by interest rate

The following table groups the current and non-current portions of bank and other borrowings.

	Rate < 3%	Rate 3 to 6%	Rate 6 to 10%	Rate > 10%	Total
AS AT 31/12/2017					
Fixed rate on date granted	514,244	1,286,715	580,049	-	2,381,008
Variable rate on date granted swapped to fixed rate					
Fixed rate	514,244	1,286,715	580,049		2,381,008
Variable rate	7,399	90,000	11,480	73,452	182,331
TOTAL	**521,643**	**1,376,715**	**591,529**	**73,452**	**2,563,339**
AS AT 31/12/2018					
Fixed rate on date granted	755,175	947,825	951,662	-	2,654,662
Variable rate on date granted swapped to fixed rate	-	-	-	-	-
Fixed rate	755,175	947,825	951,662		2,654,662
Variable rate	2,392	75,588	8,298	56,569	142,847
TOTAL	**757,567**	**1,023,413**	**959,960**	**56,569**	**2,797,509**

Debt contracted at a rate higher than 6% relates to bond issues of €550 million and €400 million, and to companies based in Brazil.

Debt at a fixed rate of less than 3% on the date granted relates mainly to commercial paper and to the €500 million bond issue.

Note 17 Provisions

Non-current liabilities	Provisions for environmental risks	Reorganization measures	Tax risks (income and other taxes, inspections, etc.)	Others	Total
As at 31/12/2016	**15,380**	**22,183**	**45,769**	**12,356**	**95,688**
Provisions for the period	682	2,294	5,087	4,067	12,130
Provisions used	(5)	(5,685)	(5,408)	(5,730)	(16,828)
Impact of changes in exchange rates	(2,181)	(188)	(3,736)	(568)	(6,673)
Other changes [(a)]	306	(4,047)	(26,839)	(3,185)	(33,765)
As at 31/12/2017	**14,182**	**14,557**	**14,873**	**6,940**	**50,552**
Provisions for the period	629	2,140	2,399	877	6,045
Provisions used	(72)	(5,213)	(451)	(3,088)	(8,824)
Other reversals	-	(1,254)	-	-	(1,254)
Impact of changes in exchange rates	(1,559)	35	(1,639)	102	(3,061)
Other changes	1,453	(3,219)	102	(1,216)	(2,880)
AS AT 31/12/2018	**14,633**	**7,046**	**15,284**	**3,615**	**40,578**

(a) The "other changes" in "tax risks" are essentially linked to the review of the tax risk in Brazil.

Provisions for environmental risks

The environment provision covers the cost of treating industrial land, as well as the clean-up costs for the mine in Brazil: amounts are provided as and when minerals are extracted, based on the volumes extracted.

Provision for tax risks

This provision mainly relates to risks in connection with tax disputes in Brazil, some of which are covered by security deposits (see Note 4).

Current liabilities	Disputes and commercial commitments	Unfilled orders – losses on completion	Reorganization measures	Environmental risks	Others	Total
As at 31/12/2016	**49,209**	**108,310**	**86,754**	**9,404**	**26,619**	**280,296**
Provisions for the period	13,143	46,680	285	2,776	16,475	79,359
Provisions used	(21,394)	(114,831)	(21,236)	(647)	(10,190)	(168,298)
Other reversals [(a)]	(11,357)	-	(17,493)	-	(4,935)	(33,785)
Impact of changes in exchange rates	(2,948)	(5,587)	(210)	(1,532)	(3,258)	(13,535)
Other changes	1,236	2,713	255	535	23	4,762
As at 31/12/2017	**27,889**	**37,285**	**48,355**	**10,536**	**24,734**	**148,799**
Provisions for the period	10,754	68,389	40,321	1,123	8,542	129,129
Provisions used	(12,379)	(76,771)	(26,209)	-	(7,429)	(122,788)
Other reversals [(a)]	(2,772)	-	(3,643)	-	-	(6,415)
Impact of changes in exchange rates	(1,322)	(443)	12	(1,129)	(2,017)	(4,899)
Other changes	(703)	(450)	(3,227)	-	(3,148)	(7,528)
AS AT 31/12/2018	**21,467**	**28,010**	**55,609**	**10,530**	**20,682**	**136,298**

(a) The "other reversals" of "reorganization measures" are primarily related to the updating of restructuring provisions in France and Germany.

Provisions for disputes, commercial commitments and losses on unfilled orders

Provisions are booked with regard to disputes if the Group has an obligation to a third party at the reporting date. They are determined based on the best estimate of the expense likely to be required to settle the obligation.

Provisions for adaptation and restructuring measures

The provisions for adaptation and restructuring measures cover the estimated costs of the plans announced as at 31 December 2018, mainly concerning Europe. They include the following costs:

- redundancy and end-of-contract compensation paid to personnel no longer required by the company;
- costs of maintaining personnel after the shutdown of operations and until the site closure (compensation for unworked notice periods, for example);
- contract termination compensation paid to suppliers;
- outstanding rents payable after the shutdown of operations until the end of the rental agreement.

Other current provisions

This item comprises various provisions with regard to customer discounts, late payment penalties and other risks identified at the reporting date, with none being individually material.

For 2018 and 2017, actual annual greenhouse gas emissions were lower than the allowance granted by the French government, so no provisions were booked in this regard.

Note 18 Other long-term liabilities

Other long-term liabilities

As at 31/12/2016	**25,712**
Impact of changes in exchange rates	(1,113)
Other changes	(14,028)
As at 31/12/2017	**10,571**
Impact of changes in exchange rates	79
Other changes	(1,433)
AS AT 31/12/2018	**9,217**

The other long-term liabilities mainly consist of other non-operating liabilities that are more than one year.

Note 19 Employee benefit commitments

	Germany	France	United Kingdom	Others	Total
AS AT 31/12/2017					
Present value of the obligation	**328,112**	**37,637**	**117,940**	**92,776**	**576,465**
Retirement benefits	257,631	35,958	117,940	89,478	501,007
Early retirement commitments	53,809	-	-	-	53,809
Long-service awards and medical benefits	16,672	1,679	-	3,298	21,649
Fair value of plan assets	(179,974)	(8,106)	(143,486)	(36,334)	(367,900)
NET LIABILITY	**148,138**	**29,531**	**(25,546)**	**56,442**	**208,565**
AS AT 31/12/2018					
Present value of the obligation	**321,382**	**32,534**	**106,328**	**93,179**	**553,423**
Retirement benefits	247,092	31,096	106,328	89,949	474,465
Early retirement commitments	57,762	-	-	-	57,762
Long-service awards and medical benefits	16,528	1,438	-	3,230	21,196
Fair value of plan assets	(176,331)	(5,116)	(120,572)	(37,045)	(339,064)
NET LIABILITY	**145,051**	**27,418**	**(14,244)**	**56,134**	**214,359**

The main actuarial assumptions used for the measurement of post-employment benefit obligations, taking account of the plans' durations, are as follows:

Main actuarial assumptions	Germany	France	United Kingdom	Others
AS AT 31/12/2017				
Discount rate	1.55%	1.55%	2.50%	from 3.6% to 9.58%
Actual return on plan assets	1.55%	1.55%	2.50%	from 3.6% to 9.58%
Salary increase rate	2.00%	1.10%	4.20%	from 3% to 10%
AS AT 31/12/2018				
Discount rate	1.70%	1.70%	2.80%	from 4% to 9.09%
Long-term return on plan assets	1.70%	1.70%	2.80%	from 4% to 9.09%
Salary increase rate	2.00%	1.14%	n/a	from 3% to 10%

Commitments are valued by the Group's independent actuaries. The assumptions used take account of the specific characteristics of the plans and companies concerned.

Experience gains and losses in 2018 generated €13.4 million in losses for the Group (against €3.8 million in gains in 2017).

In 2019, the Group expects to pay €38.5 million in benefits under defined benefit plans, including €30 million in Germany, €3.9 million in the United Kingdom, €1.3 million in France and €1.9 million in Brazil.

Plans that are fully or partially outsourced represented a total obligation of €475 million as at 31 December 2018 for assets of €339 million.

In the euro zone, the discount rate is based on the iBoxx index (AA-rated corporate bonds with a maturity of 10 or more years, estimated on the date the obligations are valued). This index uses a basket of bonds of financial and non-financial companies. The rates have not been restated to reflect credit risk not factored into the selected bond baskets.

Actual returns on plan assets were less than the estimate of €22.5 million. In 2018, a general increase in discount rates resulted in an overall decrease in liabilities, generating actuarial gains for the year of €15.3 million.

The Group has continued the restructuring efforts it began in previous years, in particular making commitments to staff in Germany, and to a lesser extent France and Brazil.

France

Commitments in France correspond to retirement benefits, supplemental pension plans and long-service award-type benefits.

On 31 December 2018, a sensitivity analysis of the discount rate was performed: a 1% increase of this rate would result in a drop of about €2.9 million in these commitments.

On 14 September 2005, a supplementary pension plan with its own plan assets was set up for executive management. The plan is partially outsourced to an insurance company. Since it is a defined benefit plan, it is valued on an actuarial basis and recognized in accordance with revised IAS 19 in the case of active employees.

The plan was closed in 2016 and the rights frozen.

As at 31 December 2018, the obligation represents €9 million for assets of €5.1 million.

Germany

The Group's employees in Germany benefit from a variety of mechanisms (retirement benefits, deferred compensation, long-service awards and early retirement), which constitute long-term obligations for the Group.

On 31 December 2018, a sensitivity analysis of the discount rate was performed: a 1% increase of this rate would result in a drop of about €28.7 million in these commitments.

United Kingdom

The Group helps fund a defined benefit pension plan for Group employees. The obligations are outsourced and managed by leading institutions in the financial markets.

On 31 December 2018, a sensitivity analysis of the discount rate was performed: a 1% increase of this rate would result in a drop of about €18.9 million in these commitments.

Brazil

In Brazil, the Group is participating in funding retirement benefits, long-service awards and a retirement healthcare expenses plan (closed).

Retirement benefits are partially outsourced in a fund with total assets of €1.7 million in 2018 (vs. €1.5 million in 2017). The Group paid a €0.6 million contribution this year (€0.7 million in 2017).

United States

The assumption for increased medical benefits is regressive: from 6.75% to 4.5% in 2029, then stable.

There were no significant events during 2018 that could have a material impact on the commitment.

Other countries

Provisions are made for obligations in other countries in accordance with local standards. They are not considered material at Group level.

Expenses incurred during the year include the additional rights acquired for an additional year of service, the change in existing rights at the beginning of the year due to discounting, past service costs recorded in the period, the expected return on plan assets, the effects of plan reductions or liquidations, and the amortization of actuarial gains and losses. The portion relating to the discounting of rights is recognized in financial income/(loss), and the return on plan assets is recorded in investment income. These expenses are broken down as follows:

Expenses for the fiscal year

	Germany	France	United Kingdom	Others	Total
AS AT 31/12/2018					
Current service cost	13,920	1,254	966	3,582	19,722
Interest expense	4,858	511	2,742	5,186	13,297
Actual return on plan assets	(2,804)	(126)	(3,502)	(1,453)	(7,885)
Net actuarial losses/(gains) for the year	(571)	(8)	-	(149)	(728)
Cost of past services	(2,992)	-	1,065	-	(1,927)
Gains/(Losses) from reduction or liquidation [(a)]	9,278	(1,474)	(2,230)	(741)	4,833
NET EXPENSE	**21,689**	**157**	**(959)**	**6,425**	**27,312**
ACTUAL RETURN ON PLAN ASSETS	**(8,243)**	**168**	**(4,423)**	**(2,156)**	**(14,654)**

(a) Primarily consists of the restructurings in Germany (increase in early retirement plan).

	Germany	France	United Kingdom	Others	Total
AS AT 31/12/2017					
Current service cost	9,868	1,663	2,949	3,492	17,972
Interest expense	4,717	587	3,485	5,792	14,581
Actual return on plan assets	(2,608)	(124)	(3,887)	(1,414)	(8,033)
Net actuarial losses/(gains) for the year	4,214	(38)	-	(206)	3,970
Cost of past services	-	-	-	-	-
Gains/(Losses) from reduction or liquidation [(a)]	15,661	(1,241)	-	(1,001)	13,419
NET EXPENSE	**31,852**	**847**	**2,547**	**6,663**	**41,909**
ACTUAL RETURN ON PLAN ASSETS	**4,925**	**172**	**11,430**	**4,984**	**21,511**

(a) Primarily consists of the restructurings in Germany (increase in early retirement plan).

The changes in assets associated with these benefits are as follows:

Changes in related assets	Germany	France	United Kingdom	Others	Total
As at 31/12/2016	**166,984**	**8,022**	**148,517**	**33,665**	**357,188**
Value of assets	166,984	8,022	148,517	33,665	357,188
Actual return on assets	4,925	172	11,430	4,984	21,511
Contributions	8,065	-	4,566	4,172	16,803
Benefits paid	-	(88)	(15,836)	(1,406)	(17,330)
Acquisitions, disposals, liquidations	-	-	-	-	-
Impact of changes in exchange rates	-	-	(5,191)	(5,081)	(10,272)
As at 31/12/2017	**179,974**	**8,106**	**143,486**	**36,334**	**367,900**
Value of assets	179,974	8,106	143,486	36,334	367,900
Actual return on assets	(8,243)	168	(4,423)	(2,156)	(14,654)
Contributions	4,600	-	2,538	3,009	10,147
Benefits paid	-	(2,960)	(20,099)	(1,582)	(24,641)
Acquisitions, disposals, liquidations	-	(198)	-	-	(198)
Impact of changes in exchange rates	-	-	(930)	1,440	510
AS AT 31/12/2018	**176,331**	**5,116**	**120,572**	**37,045**	**339,064**

Changes in the obligation	Germany	France	United Kingdom	Others	Total
As at 31/12/2016	**315,841**	**38,251**	**135,041**	**94,818**	**583,951**
Current service cost	9,868	1,663	2,949	2,939	17,419
Interest expense	4,717	587	3,485	5,792	14,581
Employee contributions	-	-	431	60	491
Actuarial losses/(gains) generated during the year	-	-	-	-	-
Remeasurements:					
• Experience-related adjustments	3,734	(829)	(6,269)	(451)	(3,815)
• Actuarial gains and losses arising from changes in demographic assumptions	-	-	-	(380)	(380)
• Actuarial gains and losses arising from changes in financial assumptions	-	-	2,708	6,199	8,907
Acquisitions/disposals	-	842	-	-	842
Benefits payments	(21,709)	(881)	(15,835)	(3,651)	(42,076)
Plan amendments	-	-	-	-	-
Reclassification to assets/liabilities held for sale	-	(755)	-	-	(755)
Foreign exchange differences	-	-	(4,570)	(12,604)	(17,174)
Others [(a)]	15,661	(1,241)	-	54	14,474
AS AT 31/12/2017	**328,112**	**37,637**	**117,940**	**92,776**	**576,465**

(a) Primarily consists of the restructurings in Germany (increase in early retirement plan).

Changes in the obligation	Germany	France	United Kingdom	Others	Total
As at 31/12/2017	**328,112**	**37,637**	**117,940**	**92,776**	**576,465**
Current service cost	13,920	1,254	966	3,582	19,722
Interest expense	4,858	511	2,742	5,186	13,297
Employee contributions	-	-	151	42	193
Actuarial losses/(gains) generated during the year	-	-	-	-	-
Remeasurements:					
• Experience-related adjustments	1,602	57	9,593	2,172	13,424
• Actuarial gains and losses arising from changes in demographic assumptions	(3,046)	-	1,555	(242)	(1,733)
• Actuarial gains and losses arising from changes in financial assumptions	(4,337)	(253)	(4,511)	(6,216)	(15,317)
Acquisitions/disposals	-	(2,558)	-	-	(2,558)
Benefits payments	(26,013)	(3,593)	(20,099)	(4,462)	(54,167)
Plan amendments	(2,992)	-	1,065	-	(1,927)
Foreign exchange differences	-	-	(845)	(453)	(1,298)
Others [(a)]	9,278	(521)	(2,229)	794	7,322
AS AT 31/12/2018	**321,382**	**32,534**	**106,328**	**93,179**	**553,423**

(a) Primarily consists of the restructurings in Germany (increase in early retirement plan).

Movements during the year in net liabilities recognized on the statement of financial position were as follows:

Changes in net liability	Germany	France	United Kingdom	Others	Total
Net Liability/(Asset) as at 31/12/2016	**148,857**	**30,229**	**(13,476)**	**61,153**	**226,763**
Total expense for the fiscal year	31,852	847	2,547	6,663	41,909
Amount recognized in Other comprehensive income – Remeasurement	(2,797)	(840)	(11,104)	2,003	(12,738)
Benefits or contributions to funds	(29,774)	(793)	(4,135)	(6,358)	(41,060)
Reclassification to assets/liabilities held for sale	-	(754)	-	-	(754)
Impact of changes in exchange rates	-	-	621	(8,077)	(7,456)
Changes in scope and other	-	842	1	1,058	1,901
Net Liability/(Asset) at 31/12/2017	**148,138**	**29,531**	**(25,546)**	**56,442**	**208,565**
Total expense for the fiscal year	21,689	157	(959)	6,425	27,312
Amount recognized in Other comprehensive income – Remeasurement	5,835	(159)	14,562	(351)	19,887
Benefits or contributions to funds	(30,613)	(165)	(2,386)	(5,849)	(39,013)
Reclassification to assets/liabilities held for sale					-
Impact of changes in exchange rates	-	-	85	(1,634)	(1,549)
Changes in scope and other	2	(1,946)	-	1,101	(843)
NET LIABILITY/(ASSET) AS AT 31/12/2018	**145,051**	**27,418**	**(14,244)**	**56,134**	**214,359**

Plan assets are broken down as follows:

United Kingdom	31/12/2018 In share	31/12/2017 In share
Equities (UK and overseas)	47.24%	43.00%
Bonds	-	-
Real Estate	8.52%	12.00%
Other (Cash and Index-Linked Gilts)	44.24%	45.00%

United States	31/12/2018 In share	31/12/2017 In share
Equities	49.60%	56.12%
Bonds	42.00%	36.27%
Real Estate	-	7.43%
Others	8.40%	0.18%

Germany	31/12/2018 In share	31/12/2017 In share
Equities	22.24%	22.09%
Bonds	77.76%	77.03%
Real Estate	-	-
Others	-	0.88%

In France, 100% of the assets are placed in the general assets of an insurance company.

Sensitivity analysis

Calculating the obligation of a defined benefit plan is sensitive to the above assumptions.

A change of 1% in the respective assumptions would have the following impacts on the defined benefit obligation at the reporting date:

In € million	1% increase	1% decrease
Discount rate	(61)	72
Salary increase rate	8	(7)
Guaranteed rate of pension increase	34	(28)

Amounts expensed for defined contribution plans:	Production staff	Directors, management, technical and supervisory staff	Total
AS AT 31/12/2017			
Employer's share of retirement contributions	3,290	7,979	11,269
Life insurance paid by the employer	2,841	2,392	5,233
Other retirement contributions	-	651	651
TOTAL	**6,131**	**11,022**	**17,153**
AS AT 31/12/2018			
Employer's share of retirement contributions	2,509	7,663	10,172
Life insurance paid by the employer	4,184	2,946	7,130
Other retirement contributions	-	603	603
TOTAL	**6,693**	**11,212**	**17,905**

Other employee benefits (options and performance shares)

The impact on the income statement of employee share ownership plans is presented in Note 25.

SHARE SUBSCRIPTION PLANS

Characteristics of the plans

The Vallourec Management Board authorized share subscription plans from 2009 to 2018 for some executive management and corporate officers of the Group.

The characteristics of these plans are as follows (figures for the 2009 plan are restated to reflect the 2:1 stock split on 9 July 2010 and the subsequent doubling of the number of shares):

	2009 Plan	2010 Plan	2011 Plan	2012 Plan	2013 Plan
Allocation date	01/09/2009	01/09/2010	01/09/2011	31/08/2012	02/09/2013
Maturity date	01/09/2013	01/09/2014	01/09/2015	01/03/2017	03/03/2018
Expiration date	01/09/2019	01/09/2020	01/09/2021	30/08/2020	01/09/2021
Exercise price in euros	31.02	42.72	36.44	22.21	27.7
Number of options granted	964,107	853,641	1,140,431	883,602	1,003,746

	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan
Allocation date	15/04/2014	15/04/2015	18/05/2016	18/05/2017	15/06/2018
Maturity date	15/04/2018	15/04/2019	18/05/2020	18/05/2021	15/06/2022
Expiration date	15/04/2022	15/04/2023	18/05/2024	18/05/2025	15/06/2026
Exercise price in euros	23.13	13.57	3.9	6.02	5.50
Number of options granted	622,261	683,413	537,895	292,500	354,220

Change in number of unexpired options

For all of these plans, the change in the number of unexpired options is as follows:

In number of options	2017	2018
Options outstanding as at 1 January	**5,002,867**	**4,013,201**
Options exercised	-	-
Options lapsed	-	-
Options canceled	(1,282,166)	(692,435)
Options distributed	292,500	354,220
OPTIONS OUTSTANDING AS AT 31 DECEMBER	**4,013,201**	**3,674,986**
Options available for exercise	*1,260,022*	*2,110,179*

The reported figures correspond to the number of options, with a performance factor of 1 for plans that were vesting, and to the actual number of shares allocated for plans that had matured.

As at 31 December 2018, the average exercise price was €30.5.

Measurement of plans (a)

	2017 Plan	2018 Plan
Share price at allocation date	€5.82	€5.33
Volatility (b)	31.00%	30.00%
Risk-free rate (c)	0.50%	0.42%
Exercise price	€6.02	€5.50
Dividend rate (d)	3.00%	3.00%
Fair value of the option (e)	€1.13	€1.02

(a) The binomial model of projecting share prices has been used to measure the fair value of the options granted.

(b) Volatility corresponds to historical volatility observed over a period corresponding to the duration of the plans.

(c) The risk-free rate corresponds to the zero-coupon rate (source: French Institute of Actuaries – Institut des Actuaires).

(d) The expected dividend rates have been determined on the basis of analysts' expectations and the Group's dividend policy.

(e) The fair value for the Management Board and the Operational Committee is €1.02 for the 2018 plan.

PERFORMANCE SHARE ALLOCATION PLANS

Characteristics of the plans

The Vallourec Management Board authorized performance share plans from 2013 to 2018 for some employees and corporate officers of the Group.

The characteristics of these plans are as follows:

Performance share allocation plans	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan
Allocation date	29/03/2013	16/12/2014	15/04/2015	18/05/2016	18/05/2017	15/06/2018
Vesting period	3 years (French residents and members of the Management Board) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)
Holding period	2 years (French residents and members of the Management Board) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)
Performance conditions	Yes [a]	Yes [b]	Yes [c]	Yes [d]	Yes [e]	Yes [f]
Theoretical number of shares allocated	391,200	661,861	388,583	610,001	820,275	842,630

(a) Definitive allocation of shares in 2016 for French residents and members of the Management Board, and in 2017 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2013, 2014 and 2015. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the definitive allocation will be based on the following three criteria assessed for fiscal years 2013, 2014, and 2015: the ratio of consolidated EBITDA to consolidated revenue on a like-for-like basis; and the performance of the Vallourec share on the regulated NYSE Euronext Paris stock market against a benchmark panel. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.

(b) Definitive allocation of shares in 2017 for French residents and members of the Management Board, and in 2018 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2014, 2015 and 2016. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, final allocation shall depend on the following four criteria, assessed in 2014, 2015 and 2016: the rate of return on capital employed (ROCE), compared with the ROCE in the budget; consolidated revenue on a like-for-like basis, as compared with the revenue in the budget; the relative stock market performance of the Vallourec share on the regulated NYSE Euronext market in Paris, as compared with a benchmark panel; and the relative EBITDA performance as compared with the same panel as for the previous criterion. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.

(c) Definitive allocation of shares in 2018 for French residents and members of the Management Board, and in 2019 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the final award will depend on the following two criteria, assessed for 2015, 2016 and 2017: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the strategic plan, and the Total Shareholder Return (TSR) for 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.

(d) Definitive allocation of shares in 2019 for French residents and members of the Management Board, and in 2020 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the final award will depend on the following two criteria, assessed for 2016, 2017 and 2018: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the strategic plan, and the Total Shareholder Return (TSR) for 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.

(e) For all beneficiaries (excluding members of the Management Board and Executive Committee), this will depend on cost reduction in 2017, 2018 and 2019, in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free Cash Flow (FCF) for 2017, 2018 and 2019. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.4. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria: reducing costs in 2017, 2018 and 2019, in comparison to the Group's planned performance in the medium-term plan over the same period and the growth of the EBITDA margin between 2017 and 2019 in comparison to a panel of comparable companies. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.

(f) For all beneficiaries (excluding members of the Management Board and Executive Committee), this will depend on cost reduction in 2018, 2019 and 2020, in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free Cash Flow (FCF) for 2018, 2019 and 2020. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria: reducing costs in 2018, 2019 and 2020 in comparison to the Group's planned performance in the medium-term plan over the same period and the growth of the EBITDA margin between 2017 and 2019 in comparison to a panel of comparable companies. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.

International performance share allocation plans	2-4-6 plan (2013)	2-4-6 plan (2014)
Allocation date	29/03/2013	15/04/2014
Vesting period	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)
Holding period	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)
Performance condition	Ratio of EBITDA to revenue (2013, 2014 and 2015)	Ratio of EBITDA to revenue (2014, 2015 and 2016)
Theoretical number of shares allocated	191,144	208,100

Free share allocation plans (without performance condition)	Value 12 Plan	Value 13 Plan	Value 14 Plan	Value 15 Plan	Value 16 Plan	Value 17 Plan
Allocation date	06/12/2012	10/12/2013	16/12/2014	15/12/2015	14/12/2016	14/12/2017
Vesting period	4.6 years	4.6 years	4.6 years	4.6 years	4.6 years	4.6 years
Theoretical number of shares allocated	7,032	6,445	6,336	2,744	3,344	3,409

In 2017, in order to meet the legal and tax requirements of each country, several different employee share ownership plans (ESOP) were offered:

- leveraged company mutual fund (*fonds commun de placement entreprise levier* – FCPE levier): employees subscribe *via* a company mutual fund to a number of Vallourec shares at a price discounted by 15% and receive, at the end of the vesting period, a performance multiple on their Vallourec shares as well as protection of their initial investment, excluding currency effects. The increase in the multiple is achieved through the transfer of the discount, from dividends and other financial rights related to ownership of the shares to the bank structuring the transaction through a swap contract;
- standard company mutual fund (*fonds commun de placement entreprise classique* – FCPE classique): employees subscribe *via* a company mutual fund to Vallourec shares at a price discounted by 20% and receive any dividends;
- share and Stock Appreciation Rights (SAR): employees, by buying one share at a price discounted by 15%, receive one SAR (protection on their initial investment, excluding currency effects, and a performance multiple on said share), which will be paid by the employer, in cash, at the end of the holding period. The resulting liability (SAR) is covered by warrants provided to the employer by the bank structuring the transaction. The warrants are issued in consideration of the issue of shares reserved for the bank at a price discounted by 15%;
- cash and Stock Appreciation Rights (SAR): employees, by depositing funds in an interest-bearing bank account, receive SARs (performance multiple on the deposit), which will be paid to the employee by the employer in cash at the end of the holding period.

  The resulting liability (SAR) is covered by warrants provided to the employer by the bank structuring the transaction. The warrants are issued in consideration of the issue of shares reserved for the bank at a price discounted by 15%.

The IFRS 2 expense resulting from the benefit granted to the employee under the terms of the ESOP is measured on the grant date. The fair value of the benefit corresponds, in the case of the standard offering, to the value of the economic benefit granted less the cost to the employee of the non-transferability of the share, and, for the leveraged plans, to the estimated present value of the amounts ultimately paid to the employee. In the case of the "share and SAR" plan, the discount on the share held by the employee and the measurement of the option protecting the initial investment are added.

No discounts were granted in 2018. In 2017, this benefit led to the recording of a personnel cost of €0.6 million.

The IFRS 2 expense resulting from the Stocks Appreciation Rights (SAR) is measured again at each quarter-end by reference to the fair value corresponding to the estimated present value of the amounts ultimately paid to the employee. The liability to employees resulting from SARs resulted in an expense included in personnel costs of €0.4 million.

In accordance with IAS 39, the income from warrants is remeasured at each quarter-end by reference to the fair value of the derivative instrument.

The income corresponding to the warrants paid by the bank to the employer was added to the employees' investment and recognized in personnel expenses for €0.4 million in 2018 since it is intended to cover income associated with SARs (see above).

Change in number of shares

For all of these plans, the change in the number of shares being vested is as follows:

In number of shares	2017	2018
Number of shares being vested as at 1 January	**2,199,312**	**2,208,468**
Shares delivered over the year	(160,170)	(83,238)
Shares canceled	(654,358)	(716 175)
Shares allocated over the year	823,684	842 630
NUMBER OF SHARES BEING VESTED AS AT 31 DECEMBER	**2,208,468**	**2,251,685**

The reported figures correspond to the number of shares, with a performance factor of 1 for plans that were vesting, and to the actual number of shares allocated for plans that had matured.

Measurement of Plans [a]	2017 Plan	Value 17 Plan	2018 Plan
Share price at allocation date	€5.82	€4.30	€5.33
Risk-free rate [b]	-0.12% (France), -0.32% (non-French)	-0.27%	-0.07% (France), -0.30% (non-French)
Dividend rate [c]	3%	3%	3%
Fair value of the share	€4.84 (French residents) or €5.15 (non-French residents)	€3.69	€4.57 (French residents) or €4.72 (non-French residents)

(a) *The binomial model of projecting share prices has been used to measure the fair value of the shares granted. The employee benefit corresponds to the fair value of the shares allocated, taking into account the impossibility of receiving dividends during the vesting period and the cost to the employee of the non-transferability of shares during the holding period.*

(b) *The risk-free rate corresponds to the zero-coupon rate (source: French Institute of Actuaries – Institut des Actuaires).*

(c) *The expected dividend rates were determined based on analysts' expectations (external information) and the Group's dividend policy.*

Note 20 Other current liabilities

	Social security liabilities	Tax liabilities	Liabilities associated with the acquisition of assets	Deferred income	Other current liabilities	Total
As at 31/12/2016	**197,382**	**29,897**	**20,494**	**1,284**	**50,405**	**299,462**
Impact of changes in exchange rates	(10,481)	(1,912)	(2,279)	(4)	(8,194)	(22,870)
Reclassification to liabilities held for sale and discontinued operations	(2,412)	(116)	-	-	(460)	(2,988)
Other changes	12,081	5,751	2,792	317	11,336	32,277
As at 31/12/2017	**196,570**	**33,620**	**21,007**	**1,597**	**53,087**	**305,881**
Impact of changes in exchange rates	(2,750)	(244)	(1,427)	(2)	(3,111)	(7,534)
Other changes	(9,622)	(4,090)	(12,198)	182	(10,038)	(35,766)
AS AT 31/12/2018	**184,198**	**29,286**	**7,382**	**1,777**	**39,938**	**262,581**

Note 21 Information on related parties

The following transactions were entered into with related parties:

	Sales to related parties	Purchases from related parties	Related party receivables	Related party payables
AS AT 31/12/2017				
HKM	2,076	294,172	104	94,107
Ascoval	17,596	99,294	3,545	2,016
AS AT 31/12/2018				
HKM	1,458	315,345	-	89,082
Ascoval	6,049	103,283	3,781	3,110

Purchases mainly concern the acquisition of steel rounds from HKM and Ascoval, which are used as raw manufacturing materials by the European rolling mills of Vallourec Deutschland and Vallourec Tubes France.

Compensation of the management and supervisory boards

The total compensation for members of the Executive Committee, as constituted at 31 December 2018 (10 people in 2018, compared to 11 in 2017), as well as retirement commitments at the reporting date, were as follows:

	2017	2018
Compensation and benefits in kind	7,220	6,670
Share-based payments [a]	1,378	1,421
Retirement commitments	829	716
Supplementary retirement commitments	5,589	5,797

(a) Information provided based on the 2018, 2017, 2016, 2015, 2014, 2013, 2012, and 2011 share subscription option, performance share and employee share ownership plans.

As regards retirement commitments for executive management, there is no specific plan. Executive management is covered by the Vallourec Group's supplementary pension plan (a benefit plan introduced in 2005 and closed on 31 December 2015), as well as by plans under Articles 83 and 82 of the French General Tax Code set up on 1 April 2016. These plans do not give rise to any commitments.

As at 31 December 2018, no loans or guarantees had been granted to executive management by the parent company or its controlled subsidiaries.

The amount of attendance fees and other compensation received by the members and Non-voting Board Member of the Supervisory Board totaled €892,350 in 2018, compared to €874,550 in 2017.

Note 22 Shareholder loan

NSSMC Shareholder loan

As at 31/12/2017	**71,702**
Repayment of debt	(41,029)
Impact of changes in exchange rates	(6,494)
Fair value of debt	4,713
AS AT 31/12/2018	**28,892**

Vallourec Soluções Tubulares do Brasil benefits from shareholder loans granted by NSSMC. These loans are subject to a maturity of BRL 44 million in 2019, with the remaining balance being gradually amortized until 2022.

The main exchange rates used for income statement items are set out in Note 13.

Income statement items are translated at the average rate.

Note 23 Revenue

	2017	2018
Europe	593,600	586,579
North America (NAFTA)	1,033,185	1,280,853
South America	612,094	625,558
Asia and Middle East	1,175,404	1,087,991
Rest of the world	335,358	339,696
TOTAL	**3,749,641**	**3,920,677**

The application of IFRS 15 led to a reclassification of the income from patent royalties to revenue in the amount of €21 million during 2018.

Note 24 Industrial costs of products sold

	2017	2018
Direct cost of sales	(223,337)	(207,456)
Cost of raw materials consumed	(1,369,434)	(1,485,316)
Labor costs	(837,374)	(757,158)
Other manufacturing costs	(908,458)	(964,252)
Change in non-raw material inventories	41,455	71,783
TOTAL	**(3,297,148)**	**(3,342,399)**
Depreciation and amortization	(297,020)	(265,653)
TOTAL (INCLUDING DEPRECIATION AND AMORTIZATION)	**(3,594,168)**	**(3,608,052)**

"Other manufacturing costs" mainly include the costs of energy and consumables, and the costs of outsourcing, maintenance and provisions.

Note 25 Sales, general and administrative costs

	2017	2018
Research and Development costs	(46,904)	(44,598)
Selling and marketing costs	(81,929)	(76,724)
General and administrative costs	(310,754)	(283,607)
TOTAL	**(439,587)**	**(404,929)**
Depreciation and amortization	(44,457)	(34,136)
TOTAL (INCLUDING DEPRECIATION AND AMORTIZATION)	**(484,044)**	**(439,065)**

Personnel expenses and average headcount of consolidated companies

	2017	2018
PERSONNEL EXPENSES		
Wages and salaries	(819,703)	(750,266)
Employee profit-sharing and bonuses	(21,674)	(15,569)
Expenses related to share subscription and share purchase options and performance shares [(a)]	(10,571)	155
Social security costs	(215,749)	(192,107)
TOTAL	**(1,067,697)**	**(957,787)**

(a) Including a €1.3 million expense for all share subscription plans for 2018 (compared to €6.6 million for 2017).

In 2018, the impact from the updating of performance factors on existing plans led to reducing the number of performance shares allocated and to recording an adjustment, which resulted in income.

The drop in personnel expenses is mainly linked to the drop in the Group's personnel and to exchange rates.

Closing headcount of consolidated companies	2017	2018
Managers	3,231	3,116
Technical and supervisory staff	3,048	2,703
Production staff	13,245	12,511
TOTAL	**19,524**	**18,330**

Group headcount as at 31 December 2018 was 18,330 people, compared with 19,524 people as at 31 December 2017.

Note 26 Others

	2017	2018
Profit-sharing and other	(20,637)	(14,995)
Fees for concessions and patents	20,424	(345)
Other income and expenses	(10,463)	(7,754)
TOTAL	**(10,676)**	**(23,094)**

Provision allowances, net of reversals	2017	2018
Provision allowances net of reversals included in EBITDA amounted to	81,191	55,983

The application of IFRS 15 led to income from patent royalties being reclassified under revenue.

Note 27 Fees paid to Statutory Auditors and members of their networks

	KPMG		Deloitte	
	Amount (excl. tax)		Amount (excl. tax)	
	2017	2018	2017	2018
CERTIFICATION OF PARENT COMPANY AND CONSOLIDATED FINANCIAL STATEMENTS				
Issuer	242	242	242	242
%	15%	16%	20%	20%
Fully consolidated subsidiaries	1,192	1,206	912	888
%	72%	77%	74%	75%
Sub-total	**1,434**	**1,448**	**1,154**	**1,130**
OTHER SERVICES DIRECTLY ASSOCIATED WITH THE STATUTORY AUDIT [(a)]				
Issuer	111	106	42	35
%	7%	7%	3%	3%
Fully consolidated subsidiaries	105	5	33	21
%	6%	0%	3%	2%
Sub-total	**216**	**111**	**75**	**56**
TOTAL	**1,650**	**1,559**	**1,229**	**1,186**

(a) The services provided cover the other services directly associated with the statutory audit that are required by the legal and regulatory texts, as well as those services provided at the Group's request. For Deloitte & Associés, for the 2018 fiscal year, they primarily correspond to the completion of procedures conducted under the framework of (i) bond issues and (ii) the certification of the carbon certificates. For KPMG, for the 2018 fiscal year, they primarily correspond to the completion of procedures conducted under the framework of (i) bond issues, (ii) the engagement of an independent third-party entity in relation to the CSR information of the management report and (iii) compliance reviews of tax returns for subsidiaries outside the European Union.

Note 28 Depreciation and amortization

	2017	2018
BY FUNCTION		
Depreciation of industrial assets	(297,020)	(265,653)
Depreciation and amortization – Research and Development	(10,371)	(9,770)
Depreciation and amortization – Sales and Marketing Department contracts	(11,398)	(5,997)
Depreciation and amortization – general and administrative expenses	(22,688)	(18,369)
TOTAL	**(341,477)**	**(299,789)**
BY TYPE		
Net depreciation and amortization of intangible assets (see Note 1)	(28,199)	(21,671)
Net depreciation and amortization of property, plant and equipment (see Note 2)	(304,675)	(269,248)
Net depreciation and amortization of biological assets	(8,603)	(8,870)
TOTAL	**(341,477)**	**(299,789)**

Note 29 Impairment of assets and goodwill, asset disposals, restructuring and non-recurring items

	2017	2018
Reorganization measures (net of expenses and provisions)	(4,697)	(43,287)
Gains and losses on disposals of non-current assets and other non-recurring items	(74,539)	(31,069)
TOTAL	**(79,236)**	**(74,356)**

	2017	2018
Impairment of intangible assets (see Note 1)	-	-
Impairment of property, plant and equipment (see Note 2)	(65,105)	(51,586)
Impairment of goodwill (see Note 1)	-	-
Other impairment of assets	-	(1,663)
TOTAL	**(65,105)**	**(53,249)**

In 2018, impairment charges were -€53 million compared to -€65 million in 2017 and “Assets disposal, restructuring, and other” charges amounted to -€74 million compared to -€79 million in 2017. These elements are a result (i) of the restructuring costs in Europe, (ii) the disposal of non-strategic assets, and more specifically two French entities in the “Drilling productions” sector, and (iii) impairment of assets recorded primarily in Europe.

Note 30 Financial income/(loss)

	2017	2018
FINANCIAL INCOME		
Income from investment securities	26,471	14,768
Income from disposals of investment securities	(464)	(479)
Total	**26,007**	**14,289**
Interest expenses	**(155,129)**	**(189,490)**
Net interest expenses	**(129,122)**	**(175,201)**
OTHER FINANCIAL INCOME AND EXPENSES		
Income from securities	1,726	564
Income from loans and receivables	930	1,425
Exchange (losses) and gains and changes in premiums/discounts	(36,831)	(40,303)
Provision allowances, net of reversals	7,765	(532)
Other financial income and expenses	(5,600)	4,493
Total	**(32,010)**	**(34,353)**
OTHER DISCOUNTING EXPENSES		
Interest expense discounts on pensions	(6,472)	(5,356)
Financial income from discounted assets and liabilities	(5,979)	(4,721)
Total	**(12,451)**	**(10,077)**
FINANCIAL INCOME/(LOSS)	**(173,583)**	**(219,631)**

Note 31 Reconciliation of theoretical and actual tax expense

Breakdown of the tax expense	2017	2018
Current tax expense	(46,409)	(36,577)
Deferred taxes (see Note 5)	147,024	31,660
Net expense (-)/Net income (+)	**100,615**	**(4,917)**
Consolidated net income/(loss)	(556,556)	(501,688)
Tax expense	100,615	(4,916)
Consolidated net income/(loss) before tax	**(657,171)**	**(496,772)**
Statutory tax rate of consolidating company (see Note 5)	34.43%	34.43%
Theoretical tax	226,264	171,039
Impact of main tax loss carryforwards	(80,685)	(133,021)
Impact of permanent differences	(30,004)	(28,301)
Other impacts	(7,055)	(10,713)
Impact of differences in tax rates	(7,905)	(3,921)
Net expense (-)/Net income (+)	**100,615**	**(4,917)**
Actual tax rate	**15%**	**-1%**

The 1% rate mainly reflects the items detailed below:

- the impact of tax loss carryforwards and timing differences mainly concerns the non-recognition of deferred tax assets (DTAs) for the year in France, Germany and China;
- the permanent differences are analyzed by the reintegration of financial expenses and by the impact from the disposal of shares;
- differences in taxation mainly reflect the range of tax rates applied in each country (France 34.4%, Germany 31.6%, United States 21%, Brazil 34.0%, China 25.0% and Saudi Arabia 20%);
- the impact from the drop in the income tax in France had no impact on the deferred taxes of the France Group due to the fact that the deferred taxes were not recorded on the temporary differences and tax losses.

Note 32 Segment information

Operating segments

The following tables provide information on the income and results for each operating segment, as well as certain information on the assets, liabilities and investments for the 2018 and 2017 fiscal years.

Information on results, assets and liabilities by operating segment

2018	Seamless tubes	Specialty products	Holdings & miscellaneous [(a)]	Inter-segment transactions	Total
INCOME STATEMENT					
Sales to external customers	3,888,204	31,524	949	-	3,920,677
EBITDA	198,089	(16,113)	(31,721)	-	150,255
Depreciation and amortization	(285,746)	(13,695)	(744)	396	(299,789)
Impairment of assets and goodwill	(16,458)	(36,791)	-	-	(53,249)
Asset disposals and restructuring costs	(48,108)	8,815	(35,053)	(10)	(74,356)
OPERATING INCOME/(LOSS)	**(152,223)**	**(57,784)**	**(67,518)**	**386**	**(277,139)**
Unallocated income					(20,064)
Unallocated expenses					(199,567)
Pre-tax income					(496,770)
Income tax					(4,917)
Net income of associates					1,320
Consolidated net income/(loss)					(500,367)
STATEMENT OF FINANCIAL POSITION					
Non-current assets	3,660,758	89,214	4,182,105	(4,211,461)	3,720,616
Current assets	1,904,399	44,083	94,348	(89,977)	1,952,853
Cash	395,074	2,592	642,944	(301,034)	739,576
Assets held for sale and discontinued operations	-	-	-	-	-
TOTAL ASSETS	**5,960,231**	**135,889**	**4,919,397**	**(4,602,472)**	**6,413,045**
CASH FLOWS					
Property, plant and equipment, intangible assets and biological assets	(127,184)	(1,271)	(219)	-	(128,674)

(a) Vallourec and Vallourec Tubes.

2017	Seamless tubes	Specialty products	Holdings & miscellaneous [(a)]	Inter-segment transactions	Total
INCOME STATEMENT					
Sales to external customers	3,680,599	68,248	794	-	3,749,641
EBITDA	47,892	(245)	(45,417)	-	2,230
Depreciation and amortization	(325,320)	(15,598)	(1,003)	444	(341,477)
Impairment of assets and goodwill	(65,105)	-	-	-	(65,105)
Asset disposals and restructuring costs	(63,501)	-	(15,735)	-	(79,236)
OPERATING INCOME/(LOSS)	**(406,034)**	**(15,843)**	**(62,155)**	**444**	**(483,588)**
Unallocated income					(6,003)
Unallocated expenses					(167,580)
Pre-tax income					(657,171)
Income tax					100,615
Net income of associates					(3,173)
Consolidated net income/(loss)					(559,729)
STATEMENT OF FINANCIAL POSITION					
Non-current assets	4,262,872	123,281	3,529,852	(3,949,595)	3,966,410
Current assets	1,770,517	51,104	123,368	(110,170)	1,834,819
Cash	465,495	2,901	1,054,009	(501,370)	1,021,035
Assets held for sale and discontinued operations	64,119	-	-	-	64,119
TOTAL ASSETS	**6,563,003**	**177,286**	**4,707,229**	**(4,561,135)**	**6,886,383**
CASH FLOWS					
Property, plant and equipment, intangible assets and biological assets	(149,835)	(5,089)	(28)	-	(154,952)

(a) Vallourec and Vallourec Tubes.

Geographical regions

The following tables provide information by geographical region on revenue (by location of the Group's customers) and capital expenditure as well as certain information on assets (by regions where the companies operate).

2018	Europe	North America	South America	Asia	Rest of the World	Total
REVENUE						
Sales to external customers	586,579	1,280,853	625,558	1,087,991	339,696	3,920,677
STATEMENT OF FINANCIAL POSITION						
Property, plant & equipment, intangible assets, biological assets and goodwill (net)	519,281	1,414,833	915,748	329,762	319	3,179,943
CASH FLOWS						
Property, plant and equipment, intangible assets and biological assets	50,535	32,818	27,476	17,695	150	128,674

2017	Europe	North America	South America	Asia	Rest of the World	Total
REVENUE						
Sales to external customers	593,600	1,033,185	612,094	1,175,404	335,358	3,749,641
STATEMENT OF FINANCIAL POSITION						
Property, plant & equipment, intangible assets, biological assets and goodwill (net)	603,246	1,435,102	1,096,520	350,143	267	3,485,278
CASH FLOWS						
Property, plant and equipment, intangible assets and biological assets	85,186	26,224	32,884	10,519	139	154,952

Note 33 Share in net income/(loss) of equity affiliates

The contribution to the consolidated net income of equity affiliates is as follows:

	2017	2018
HKM	6	-
Vallourec Umbilicals	-	(594)
Other companies	(3,179)	1,914
TOTAL	**(3,173)**	**1,320**

Note 34 Contingent liabilities and commitments

Due to its activities in Europe, Vallourec is concerned about the European Emissions Trading System (ETS). This system, established in 2005, has been in its third period since 2013, which will end in 2020.

Under this framework, Vallourec is still benefiting from free quotas, though reduced compared to previous periods. The other portion of the quotas allocated is no longer free, but subject to auction on the market. Vallourec operates in the metallurgy sector, which is considered to be exposed to the risk of “carbon leakage.”

The Group was allocated a greenhouse gas emissions quota in 2018 of 38,778 metric tons for its French plants, and 168,917 metric tons for its German plants.

The European authorities recently agreed to rules applicable for the fourth period (2020-2030) with the objective of reducing emissions by at least 40% between now and 2030. These new rules will notably lead to a reduction in free quotas, a quicker drop in their annual level, a more dynamic allocation depending on level of activity, and to stricter eligibility conditions for obtaining the status of a company at risk of “carbon leakage”.

	2017	2018
OFF-STATEMENT OF FINANCIAL POSITION COMMITMENTS RECEIVED (EXCLUDING FINANCIAL INSTRUMENTS)		
Firm non-current asset orders	4,449	5,462
Guarantees and commitments received	89,247	63,983
Other commitments received	11,180	10,797
TOTAL	**104,876**	**80,242**
OFF-STATEMENT OF FINANCIAL POSITION COMMITMENTS GIVEN (EXCLUDING FINANCIAL INSTRUMENTS)	**463,527**	**322,429**

Commitments given by maturity

	2018	< 1 year	> 1 year	> 5 years
STATEMENT OF FINANCIAL POSITION				
Long-term financial debts	2,797,509	1,000,872	1,215,216	581,421
OFF-STATEMENT OF FINANCIAL POSITION				
Market guarantees and letters of credit given	90,296	61,866	28,430	-
Other securities, mortgages and pledges given	1,401	607	329	465
Long-term lease [(a)]	147,873	36,128	69,472	42,273
Firm asset orders given	5,462	5,076	386	-
Other obligations	77,397	49,507	26,183	1,707
TOTAL	**322,429**	**153,184**	**124,800**	**44,445**

(a) In light of the future application of IFRS 16 – Leases, lease agreements have been subject to an extensive review.

	2017	< 1 year	> 1 year	> 5 years
STATEMENT OF FINANCIAL POSITION				
Long-term financial debts	2,563,339	746,220	1,218,972	598,147
OFF-STATEMENT OF FINANCIAL POSITION				
Market guarantees and letters of credit given	106,484	69,123	37,361	-
Other securities, mortgages and pledges given	117,721	-	2,051	115,670
Long-term lease [(a)]	146,614	22,155	67,983	56,476
Firm asset orders given	4,449	4,167	282	-
Other obligations	88,259	68,642	17,707	1,910
TOTAL	**463,527**	**164,087**	**125,384**	**174,056**

(a) In light of the future application of IFRS 16 – Leases, lease agreements have been subject to an extensive review.

Note 35 Subsequent events

On 19 February 2019, Vallourec obtained an extension of two lines of credit maturing in 2020, allowing this bank financing to be extended until February 2021, in the amount of €600 million.

6.2 Statutory Auditors' Report on the Consolidated Financial Statements

For the year ended 31 December 2018

This is a translation into English of the Statutory Auditors' report on the financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users.

This Statutory Auditors' report includes information required by European regulation and French law, such as information about the appointment of the Statutory Auditors or verification of the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Annual General Shareholders' Meeting of Vallourec,

Opinion

In compliance with the engagement entrusted to us by your Shareholders' Meeting, we have audited the accompanying consolidated financial statements of Vallourec S.A. (hereinafter, "the Company") for the year ended 31 December 2018.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at 31 December 2018 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Financial and Audit Committee.

Basis for Opinion

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from 1 January 2018 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No. 537/2014 or in the French Code of ethics *(Code de déontologie)* for Statutory Auditors.

Justification of Assessments – Key Audit Matters

In accordance with the requirements of Articles L.823-9 and R.823-7 of the French Commercial Code *(Code de commerce)* relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

Valuation of goodwill, intangible assets and property, plant and equipment – Notes A2.7 to A2.9, C.1, C2.1, C2.3 and C29 of the consolidated financial statements

Key Audit Matter	Audit Approach
As at 31 December 2018, the carrying amount of goodwill, intangible assets and property, plant and equipment was €358 million, €71 million and €2,691 million respectively, representing 49% of the consolidated balance sheet total. As described in note C2.3 of the consolidated financial statements, since 2014, the Group has faced a deteriorated economic environment, with a drop in exploration and production investment by oil operators, increased volatility in the price of raw materials and energy, and an extremely competitive international environment. In response to the continued decline in oil and gas prices since the end of 2014, oil and gas companies have reduced capital expenditure in exploration, production and development of oil and natural gas reserves. This has had a significant impact on demand and on the price of pipes. Reduced demand, combined with lower prices resulting from competitive pressure from incumbent gas operators and the arrival of new competitors, exacerbated by deflationary pressure from customers, has significantly affected the Group's profitability. As described in note C2.3 of the consolidated financial statements, in 2018, impairment tests were conducted on the cash generating units (CGUs) for which an indication of impairment was identified: Europe, Serimax and Valinox Nucléaire. In addition, the Group performed an impairment test on the CGUs that included goodwill, namely Brazil and North America. Impairment testing methods and assumptions are described in note C2.3 of the consolidated financial statements. As indicated in note C29 to the consolidated financial statements, these tests resulted in the record of a €53 million impairment in 2018 on individual assets. We believe that the estimation of the recoverable value of these CGUs is a key audit matter, given the materiality of these assets on the consolidated financial statements of the Group, and also given the fact that the determination of recoverable value requires Management to make judgments and use estimates to forecast the discounted future cash flows used in the tests. It should be noted that the CGU "Vallourec Europe" receives particular attention because of past achievements, expected growth and the sensitivity of exchange rate assumptions.	During our work, we gained an understanding of (i) the process for preparing and approving the estimates and hypothesis used by Management to perform impairment tests, (ii) the procedures for approval of the results of these tests by the governance entities, and we (iii) assessed the appropriateness of the model adopted to determine the recoverable value of the CGUs tested. We have obtained the cash flows and operating cash flows forecasts prepared by the Company for each CGU, and assessing their consistency with the forecast data from the latest strategic plans, prepared under the supervision of Executive Management and approved by the Supervisory Board. With the support of our valuation experts, we assessed the appropriateness of the various assumptions underlying the cash flow forecasts, particularly with respect to the Group's internal data and sectorial macroeconomic data analyses, namely (i) price and volume assumptions that are dependent on investment expenditures in the exploration and production of oil and natural gas, and (ii) exchange rates, growth rates and discount rates. The consistency of cash forecasts with past performance, market outlook, and forecast data presented to the Company's Supervisory Board was also analyzed. Last, we performed our own sensitivity analyses and verified the appropriateness of the information presented in note C2.3 of the consolidated financial statements on those performed by the Company.

Specific verifications

As required by French law and regulations, in accordance with professional standards applicable in France we have also verified the information pertaining to the Group presented in the management report of the Management Board.

We have no matters to report as to its fair presentation and its consistency with the consolidated financial statements.

We attest that the consolidated declaration of extra-financial performance, required under Article L. 225-102-1 of the French Commercial Code *(Code de commerce)*, is included in the information relating to the group provided in the management report, being specified that, in accordance with the provisions of Article L. 823-10 of this Code, we have not verified the fair presentation and the consistency with the consolidated financial statements of the information provided in this declaration and this information must be reported by an independent third party.

Report on Other Legal and Regulatory Requirements

Appointment of the Statutory Auditors

We were appointed as Statutory Auditors of the company Vallourec by the annual general meeting held on 1 June 2006 for both audit firms.

As at 31 December 2018, KPMG S.A. was in the 13th year of an uninterrupted engagement and Deloitte & Associés in the 17th year of an uninterrupted engagement given the succession of mandates between legal entities of the Deloitte network.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union, and for such internal control as Management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, Management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is expected to liquidate the Company or to cease operations.

The Financial and Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risk management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements have been approved by the Management Board.

Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Objectives and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As specified in Article L.823-10-1 of the French Commercial Code *(Code de commerce)*, our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the Statutory Auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for the audit opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management in the consolidated financial statements;
- assesses the appropriateness of Management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the Statutory Auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- evaluates the overall presentation of the consolidated financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation;
- obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The Statutory Auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion on these consolidated financial statements.

Report to the Financial and Audit Committee

We submit a report to the Financial and Audit Committee which includes a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Financial and Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore key audit matters that we are required to describe in this audit report.

We also provide the Financial and Audit Committee with the declaration provided for in Article 6 of Regulation (EU) No. 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by Articles L.822-10 to L.822-14 of the French Commercial Code *(Code de commerce)* and in the French Code of Ethics *(Code de déontologie)* for Statutory Auditors. Where appropriate, we discuss with the Financial and Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris La Défense, on 25 March 2019

The Statutory Auditors,
French original signed by

Deloitte & Associés
Véronique Laurent

KPMG Audit
Division of KPMG SA
Alexandra Saastamoinen

6.3 Parent company financial statements

6.3.1 Statement of financial position

Assets

In € thousand	31/12/2017	31/12/2018
NON-CURRENT ASSETS		
Intangible assets	414	414
Property, plant and equipment	88	88
Equity interests	3,856,437	3,856,429
Receivables, loans and other financial assets	1,700,000	1,700,000
Total I	**5,556,939**	**5,556,931**
CURRENT ASSETS		
Operating receivables	4,203	1,710
Other receivables	808,865	913,436
Investment securities	8,834	7,034
Cash and cash equivalents	5	131
Prepaid expenses	14,216	7,427
Deferred expenses	16,362	18,200
Total II	**852,495**	**947,938**
TOTAL ASSETS (I + II)	**6,409,434**	**6,504,869**

Liabilities

In € thousand	31/12/2017	31/12/2018
EQUITY		
Capital	915,976	915,976
Additional paid-in capital	1,421,586	1,421,586
Revaluation reserve	634	634
Reserves	85,886	85,886
Retained earnings	1,784,644	1,745,588
Net income/(loss) for the period	(39,056)	(34,718)
Total I	**4,169,670**	**4,134,952**
Provisions for contingencies and liabilities	6,284	3,065
Financial liabilities	2,170,562	2,341,546
Operating liabilities	8,402	5,045
Other liabilities	54,295	20,261
Deferred income	221	-
Translation differences – unrealized gains	-	-
Total II	**2,239,764**	**2,369,917**
TOTAL EQUITY AND LIABILITIES (I+II)	**6,409,434**	**6,504,869**

6.3.2 Income statement

In € thousand	31/12/2017	31/12/2018
Revenue	5,050	2,335
Provision reversals and expenses transferred	27,622	10,287
Other income	18	-
External services	(25,928)	(15,427)
Taxes and similar	(685)	(434)
Personnel expenses	(4,358)	(3,148)
Other operating expenses	(9,500)	(2,739)
Amortization, depreciation and provisions	(5,511)	(5,726)
Operating income/(loss)	**(13,292)**	**(14,852)**
Financial income	**117,733**	**78,584**
From equity interests	-	428
Other long-term securities and receivables	77,465	75,839
Other interest and similar income	842	57
Provision reversals and financial expenses transferred	20,797	10
Foreign exchange gains	18,629	2,250
Net income on disposal of investment securities	-	-
Financial expenses	**(111,815)**	**(135,622)**
Amortization, depreciation and provisions	(10)	-
Interest and similar expenses	(93,303)	(133,193)
Foreign exchange losses	(18,502)	(2,429)
Net capital gain/(loss) on disposal of marketable securities	-	-
Financial income/(loss)	**5,918**	**(57,038)**
Net income from continuing operations before tax	**(7,374)**	**(71,890)**
Exceptional income	76,177	2
Exceptional expenses	(107,522)	-
Exceptional income/(loss)	**(31,345)**	**2**
Income tax	(337)	37,170
NET INCOME/(LOSS)	**(39,056)**	**(34,718)**

6.3.3 Notes to the parent company financial statements for the year ended 31 December 2018

In € thousand unless stated otherwise.

Notes to the statement of financial position (before allocation) for the year ended 31 December 2018, which totals €6,504.9 million, and to the income statement, which shows a loss of €34.7 million.

The fiscal year runs for 12 months, from 1 January to 31 December.

Vallourec prepares consolidated financial statements.

A – Significant events, measurement methods and comparability of financial statements

The presentation and measurement methods used in the preparation of the financial statements for the year under review are the same as those used for the previous year.

Impairment of equity interests is recorded under financial income.

B – Accounting principles

The parent company financial statements are prepared in accordance with French GAAP (ANC Regulation No. 2014-03) and the fundamental accounting concepts (independence of fiscal years, non-compensation, historic cost, intangibility of the opening balance sheet, going concern, true and fair view, conservatism and consistency of accounting methods).

Property, plant and equipment

In accordance with ANC Regulation No. 2014-03, the Company uses the component approach, which relies on technical analyses to individually account for significant parts of an item of property, plant and equipment, owing to their uses and utilization rates.

Measurement of property, plant and equipment includes:

- the acquisition or production cost, except for assets acquired before 31 December 1976, which were remeasured. The latter are stated at their transfer value;
- discounts, rebates and other payment deductions;
- costs directly attributable to asset implementation;
- any dismantling costs;
- financial expenses related to the asset's acquisition are excluded.

Depreciation of property, plant and equipment is calculated on a straight-line or accelerated basis over the expected useful life of the asset.

Tax depreciation is calculated using the diminishing value method over the shortest period between the useful life and the duration of use, except for components depreciated over their actual lives.

Equity interests

The gross value of equity interests comprises their purchase cost, excluding associated expenses, and the amount of any capital increases.

Securities acquired in foreign currencies are recorded at their acquisition price translated into euros at the rate applicable on the date of the transaction.

At the last year-end, the Company compared the net carrying amount of the equity interests at their value in use and constitutes a provision in financial income/(loss) when their value in use is less than the net carrying amount.

The value in use is determined based on the expected cash flows, which are estimated based on the Group's strategic plan for the first five years, with a projection over the next three years and a terminal value.

Treasury shares

Treasury shares acquired and available to be allocated to employees are classified as investment securities.

Pursuant to CRC Regulation No. 2008-15 dated 4 December 2008 relating to the accounting treatment of share purchase or subscription plans and performance share plans for employees, shares allocated for these plans are not impaired based on market value due to the obligation to allocate such shares to employees and the provision recognized as a liability (see below in the section relating to provisions for contingencies and liabilities).

Receivables and payables

Receivables and payables are measured at their nominal value.

Trade receivables are impaired when there is a risk of non-recovery.

Impairment ratios are applied to each receivable based on probabilities of recovery.

CICE

In accordance with the ANC circular published on 28 February 2013, the French Competitiveness and Employment Tax Credit (CICE) is recorded as a reduction of personnel expenditure, offset by a receivable from the parent company in the form of a tax credit that may be applied against the corporate income tax liability.

Investment securities

Investment securities are measured at acquisition cost plus accrued income for the period, or at market value if lower.

Treasury shares acquired and available to be allocated to employees are classified as investment securities.

Translation of transactions in foreign currencies and financial instruments

Receivables, cash and cash equivalents and payables in foreign currencies are stated on the statement of financial position using the exchange rate applicable on the reporting date.

Transactions denominated in foreign currencies backed by qualified hedges are recorded at the spot rate.

The aggregate value of the change in time value (i.e. the change between the forward price of the hedge on the reporting date and the initial spot rate) is recognized at each reporting date on the statement of financial position – Derivative instruments. The change in the premium/discount between the beginning and the end of the period impacts income/(loss). Since 1 January 2017, these changes have been recorded under operating income (see ANC Regulation 2015-05). They previously appeared under financial income/(loss).

The change in time value (premium/discount) is recognized separately from revenue.

In application of ANC Regulation 2015-05, the change in values of the isolated open-position operations are recorded in the balance sheet as a counterpart for suspense accounts:

- in assets for changes that correspond to an unrealized loss;
- in liabilities for changes that correspond to an unrealized gain.

Unrealized gains are not included in the income statement. When an operation results in an unrealized loss, a provision to financial income is made in the amount of this unrealized capital loss.

Provisions for contingencies and liabilities

RETIREMENT PENSIONS

Pensions are paid by an external organization and the Company therefore has no obligations in this respect.

RETIREMENT BENEFITS

Commitments in respect of benefits paid to retiring employees are measured based on an actuarial calculation and provisioned as a liability in the statement of financial position.

As at 31 December 2018 the discount rate was based on the iBoxx € Corporates AA 10+ index. This index uses a basket of bonds of financial and non-financial companies. They are based on the assumption that all employees leaving the Group will do so on a voluntary basis.

Actuarial gains or losses are amortized using the corridor rule over the average remaining working lives of employees.

The actuarial assumptions used vary depending on the specific arrangements of the Company's retirement plan(s) and collective agreement(s).

The following assumptions are used:

- discount rate of 1.70% (including inflation);
- inflation rate of 1.20%;
- staff turnover rate variable according to age and category;
- generational mortality table TPGF2005/TPGH2005.

PROVISIONS ON SHARES EARMARKED FOR EMPLOYEE SHARE ALLOCATIONS

Pursuant to CRC Regulation No. 2008-15 dated 4 December 2008 relating to the accounting treatment of share purchase or subscription plans and performance share plans for employees, the Company recognizes a provision for a contingent liability as soon as an outflow of resources becomes probable. This provision is measured based on the product of:

- the acquisition cost of the shares or their net carrying amount (when they were already owned) on the date they were allocated to the share allocation plan, less the price likely to be paid by the beneficiaries; and
- the number of shares that are expected to be allocated given the provisions of the allocation scheme (satisfaction of conditions regarding continuous service and performance) as assessed on the reporting date.

A provision for contingencies and liabilities has been recognized at each reporting date since these plans were put in place on a *prorata* basis, equal to the costs relating to the allocations of performance shares to employees, executive management and corporate officers of Vallourec and its subsidiaries.

OTHER PROVISIONS

All disputes (technical, tax) and risks have been recognized as provisions for the estimated probable risk at the reporting date.

Exceptional income and expenses

In general, exceptional income and expenses comprise amounts of an extraordinary nature, i.e. those that fall outside the scope of the Company's continuing operations.

C – Notes to the statement of financial position

1. Movements in non-current assets

Non-current assets	31/12/2017	Acquisition Allowances	Disposal Reversals of provisions	31/12/2018	Revaluation reserve	Related parties
Intangible assets	**414**	**-**	**-**	**414**	**-**	**-**
Trademarks	414	-	-	414	-	-
Property, plant and equipment	**88**	**-**	**-**	**88**	**-**	**-**
Land	88	-	-	88	-	-
Buildings	-	-	-	-	-	-
Depreciation of buildings	-	-	-	-	-	-
Construction in progress	-	-	-	-	-	-
Equity interests	**3,856,437**	**-**	**-**	**3,856,429**	**-**	**3,856,429**
Equity interests	3,856,437	-	-	3,856,429	-	3,856,429
Provisions for associates	-	-	-	-	-	-
Long-term investments & treasury shares	**-**	**-**	**-**	**-**	**-**	**-**
Long-term investments	-	-	-	-	-	-
Provisions for long-term investments	-	-	-	-	-	-
Treasury shares	-	-	-	-	-	-
Provisions for treasury shares	-	-	-	-	-	-
Receivables, loans, other investments	**1,700,000**	**-**	**-**	**1,700,000**	**-**	**1,700,000**
Loans	1,700,000	-	-	1,700,000	-	1,700,000
Accrued interest	-	-	-	-	-	-
TOTALS	**5,556,939**	**-**	**-**	**5,556,931**	**-**	**5,556,429**

RECEIVABLES, LOANS AND OTHER FINANCIAL ASSETS

Loans

Vallourec arranged a €1.7 billion loan for subsidiary Vallourec Tubes to finance its long-term requirements. The loan is being repaid at 4.4%, maturing on 31 December 2019.

On 31 December 2018, this loan was modified, increasing its interest rate to 6.50% and extending its maturity to 31 December 2021.

2. Investment securities

Investment securities include:

Mutual and investment funds

	31/12/2017	31/12/2018	Measurement as at 31/12/2018	Loss provisioned	Unrealized gain
Time deposit account	5,000	5,000	5,000	-	-
Mutual and investment funds	-	-	-	-	-
TOTAL	**5,000**	**5,000**	**5,000**	**-**	**-**

Vallourec joins in euro and US dollar cash management centralization with its main European companies and centralized currency hedging transactions in respect of its US dollar sales within Vallourec Tubes.

Cash is invested in risk-free UCITS money market funds. Vallourec only enters into financial transactions with leading financial institutions.

Treasury shares

	31/12/2017	Acquisition Allowance	Disposal Reversal	31/12/2018
Treasury shares	3,834	-	1,800	2,034
Impairment provision	-	-	-	-
TOTAL	**3,834**	**-**	**1,800**	**2,034**

Treasury shares recorded in investment securities are allocated to members of staff, executive management or corporate officers of the Group under the performance share allocation plan, and free share allocation plans for employees of the Group.

In this context, Vallourec holds:

- 155 treasury shares acquired in 2011 under the share buyback plan of 7 June 2011, after definitive allocation of 27,534 shares in 2012, 86,377 shares in 2013, 91,929 shares in 2014, 108,600 shares in 2015, 30,524 shares in 2016, 54,871 shares in 2017, and 10 shares in 2018 under the various performance share plans;
- 1,131 treasury shares acquired in 2012 under the share buyback plan of 31 May 2012, upon the definitive allocation of 94,600 shares in 2014 and 225,684 shares in 2016, and 78,585 shares in 2017 under the various performance share plans;
- 89,753 treasury shares acquired in 2014 after the definitive allocation of 128,689 shares in 2017 and 81,558 shares in 2018 for the various performance share plans.

As at 31 December 2018, Vallourec holds 91,039 treasury shares, all allocated to a performance plan.

3. Statement of receivables and payables

Receivables	Gross value	Of which accrued receivables	Of which related parties	Gross value < 1 year	Gross value > 1 year
Receivables, loans and financial assets	**1,700,000**	**-**	**1,700,000**		**1,700,000**
Operating receivables	**1,710**	**-**	**585**	**1,710**	**-**
Advances & deposits paid to suppliers	31	-	-	31	-
Trade & other receivables	585	-	585	585	-
Other operating receivables	1,094	-	-	1,094	-
Other receivables	**913,436**	**-**	**901,179**	**913,436**	**-**
Receivables related to tax consolidation	-	-	-	-	-
Government – Corporate income tax	11,717	-	-	11,717	-
Intercompany cash advance	901,719	-	901,179	901,719	-
Other receivables	-	-	-	-	-
TOTALS	**2,615,138**	**-**	**2,601,764**	**915,138**	**1,700,000**

Loans granted during the year: None.

Loans repaid during the year: None.

Receivables represented by commercial paper: None.

Payables	Gross value	Of which expenses payable	Of which related parties	< 1 year	> 1 year	> 5 years
Borrowings	**2,341,546**	**25,193**	**-**	**586,543**	**1,200,003**	**555,000**
Non-convertible bond issues	1,905,000	-	-	400,000	950,000	555,000
Convertible bond issues	250,000	-	-	-	250,000	-
Bank loans and borrowings	25,193	25,193	-	25,193	-	-
Commercial paper	161,350	-	-	161,350	-	-
Other loans and borrowings	3	-	-	-	3	-
Intercompany cash advance	-	-	-	-	-	-
Operating liabilities	**5,045**	**-**	**1,479**	**5,045**	**-**	**-**
Trade payables	2,782	-	1,479	2,782	-	-
Tax & social security liabilities	2,263	-	-	2,263	-	-
Customer advances & deposits	-	-	-	-	-	-
Other liabilities	**20,261**	**3,969**	**12,064**	**20,261**	**-**	**-**
Other operating liabilities	-	-	-	-	-	-
Other non-operating liabilities	20,261	3,969	12,064	20,261	-	-
TOTALS	**2,366,852**	**29,162**	**13,543**	**611,849**	**1,200,003**	**555,000**

BORROWINGS

Non-convertible bond issues

In August 2012, Vallourec issued two long-term private bonds totaling €455 million. The amounts and terms of these two private bond issues are €400 million for seven years with an annual coupon of 3.25% for one, and €55 million for 15 years with an annual coupon of 4.125% for the other.

On 30 September 2014, Vallourec issued a €500 million bond, maturing in September 2024, with a fixed annual coupon of 2.25%.

On 11 October 2017, Vallourec issued a €400 million bond, which received a matching contribution on 23 October 2017 in the amount of €150 million (i.e. €550 million in total) maturing in October 2022 with a fixed annual coupon of 6.625%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

On 12 April 2018, Vallourec issued a €400 million bond, maturing in October 2023, with a fixed annual coupon of 6.375%. This bond is callable pursuant to the contractual terms as from 15 October 2020.

As at 31 December 2018, the market value of these fixed-rate bonds was €403.9 million, €61.7 million, €525.3 million, €554.6 million and €404.9 million, respectively.

These bond issues were intended to diversify and increase the amount and extend the maturity of the financial resources available to the Group.

These bond issues specifically include a change-of-control clause that would trigger the mandatory early repayment of the bonds at the request of each bondholder in the event of a change of control of the Company (in favor of a person or a group of people acting in concert) leading to a downgrade of Vallourec's financial rating.

In addition, these bonds may be subject to a request for prepayment should any of the common default scenarios for this type of transaction arise. Early redemption may also be requested in some cases by either the Company or the bondholder, particularly in respect of a change in Vallourec's position or tax status.

Convertible bond issues

On 27 September 2017, Vallourec issued a €250 million bond issue, consisting of Bonds Convertible into New Shares and/or Exchangeable for Existing Shares, maturing in October 2022, with a fixed annual coupon of 4.125%, a 37.5% conversion premium and a 6.89 strike.

Bank loans & debts

In February 2014, Vallourec took out a confirmed credit facility for the amount of €1.1 billion, maturing in February 2019, plus two one-year extension options. In addition to the first one-year extension obtained for €1.078 billion, the second extension was granted in July 2016 for the sum of €989 million, which was then raised to 1,034 million in July 2017. The new maturity date is in 2021. This credit line is available for the Group's general funding purposes. As at 31 December 2018 this line had not been drawn.

In June 2015, Vallourec agreed to a confirmed bilateral line of €90 million until February 2019 with two one-year extension options, which were granted in July 2016. As at 31 December 2018 this line had not been drawn.

In September 2015, Vallourec took out a confirmed credit facility for €400 million, maturing in July 2019, with a one-year extension option, which was granted in July 2016 for the full amount, and maturity rescheduled for 2020. As at 31 December 2018, this line had not been drawn.

In May 2016, Vallourec took out a confirmed credit line for €450 million maturing in February 2020. As at 31 December 2018 this line had not been drawn.

In May 2018, Vallourec took out a credit line for €110 million with the European Investment Bank maturing in April 2027. This line of credit is available to finance the Group's Research & Development, and Digitization projects. As at 31 December 2018 this line had not been drawn.

Each of these bank facilities requires Vallourec to maintain its consolidated net debt-to-equity ratio ("bank covenant") at less than or equal to 100%, calculated as at 31 December each year. The Group's consolidated debt to equity ratio was 72% as at 31 December 2018, as calculated under the Group's bank loan covenant. As defined in the bank loan agreements, the banking covenant ratio is the ratio of the Group's consolidated net debt (including the shareholder's loan in Brazil) to the Group's equity, restated for gains and losses on derivatives and for foreign currency translation reserves (gains and losses of consolidated subsidiaries in foreign currency).

Commercial paper

In addition to bank financing, the Group has sought to diversify its funding sources by using market financing. For example, Vallourec launched a commercial paper program on 12 October 2011 to meet its short-term needs. The program has a €1 billion ceiling.

As at 31 December 2018, Vallourec had an outstanding debt of €161.4 million for maturities of up to one year. This commercial paper program was rated B by Standard & Poor's.

4. Bond issue costs

In accordance with the method recommended by the French National Accounting Board *(Conseil national de la comptabilité),* bond issue costs are spread in a straight line over the life of the bonds concerned.

In € thousand	31/12/2017	Increase	Decrease	31/12/2018
Bond issue costs	16,362	6,268	(4,430)	18,200

5. Equity

Changes in equity were as follows:

	Number of shares	Capital	Net income/(loss) for the period	Additional paid-in capital and reserves	Equity
Position as at 31/12/2016	**451,238,005**	**902,476**	**(17,841)**	**3,297,481**	**4,182,116**
Allocation of 2016 net income/(loss)	-	-	17,841	(17,841)	-
Capital increase	6,749,755	13,500	-	13,110	26,610
Revaluation reserve	-	-	-	-	-
Dividend paid	-	-	-	-	-
Interim dividend	-	-	-	-	-
2017 net income/(loss)	-	-	(39,056)	-	(39,056)
Change	6,749,755	13,500	(21,215)	(4,731)	(12,446)
Position as at 31/12/2017	**457,987,760**	**915,976**	**(39,056)**	**3,292,750**	**4,169,670**
Allocation of 2017 net income/(loss)	-	-	39,056	(39,056)	-
Capital increase	-	-	-	-	-
Revaluation reserve	-	-	-	-	-
Dividend paid	-	-	-	-	-
2018 net income/(loss)	-	-	(34,718)	-	(34,718)
Change			4,338	(39,056)	(34,718)
POSITION AS AT 31/12/2018	**457,987,760**	**915,976**	**(34,718)**	**3,253,694**	**4,134,952**

Vallourec's issued capital is comprised of 457,987,760 ordinary shares with a nominal value of €2 per share, fully paid-up as at 31 December 2018.

Equity dropped by €34.7 million and was €4,135 million as at 31 December 2018, compared to €4,170 million as at 31 December 2017.

6. Employee share ownership

SHARE SUBSCRIPTION PLANS

Characteristics of the plans

The Vallourec Management Board authorized share subscription plans from 2009 to 2018 for some executive management and corporate officers of the Group.

The characteristics of these plans are as follows (figures for the 2009 plans are restated to reflect the 2:1 stock split on 9 July 2010 and the subsequent doubling of the number of shares):

	2009 Plan	2010 Plan	2011 Plan	2012 Plan	2013 Plan
Allocation date	01/09/2009	01/09/2010	01/09/2011	31/08/2012	02/09/2013
Maturity date	01/09/2013	01/09/2014	01/09/2015	01/03/2017	03/03/2018
Expiration date	01/09/2019	01/09/2020	01/09/2021	30/08/2020	01/09/2021
Exercise price in euros	31.02	42.72	36.44	22.21	27.70
Number of options granted	964,107	853,641	1,140,431	883,602	1,003,746

	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan
Allocation date	15/04/2014	15/04/2015	18/05/2016	18/05/2017	15/06/2018
Maturity date	15/04/2018	15/04/2019	18/05/2020	18/05/2021	15/06/2022
Expiration date	15/04/2022	15/04/2023	18/05/2024	18/05/2025	15/06/2026
Exercise price in euros	23.13	13.57	3.90	6.02	5.50
Number of options granted	622,261	683,413	537,895	292,500	354,220

Change in number of unexpired options

For all of these plans, the change in the number of unexpired options is as follows:

In number of options	2017	2018
Options outstanding as at 1 January	**5,002,867**	**4,013,201**
Options exercised	-	-
Options lapsed	-	-
Options canceled	(1,282,166)	(692,435)
Options distributed during the period	292,500	354,220
OPTIONS OUTSTANDING AS AT 31 DECEMBER	**4,013,201**	**3,674,986**
Options available for exercise	1,260,022	2,110,179

The reported figures correspond to the number of options, with a performance factor of 1 for plans that were vesting, and to the actual number of shares allocated for plans that had matured.

As at 31 December 2018, the average exercise price was €30.5.

PERFORMANCE SHARE ALLOCATION PLANS

Characteristics of the plans

The Vallourec Management Board authorized performance share allocation plans from 2013 to 2018 for some employees and corporate officers of the Group.

The characteristics of these plans are as follows:

Performance share allocation plans	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan
Allocation date	29/03/2013	16/12/2014	15/04/2015	18/05/2016	18/05/2017	15/06/2018
Vesting period	3 years (French residents and members of the Management Board) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)
Holding period	2 years (French residents and members of the Management Board) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)
Performance conditions	Yes [a]	Yes [b]	Yes [c]	Yes [d]	Yes [e]	Yes [f]
Theoretical number of shares allocated	391,200	661,861	388,583	610,001	820,275	842,630

(a) *Definitive allocation of shares in 2016 for French residents and members of the Management Board, and in 2017 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2013, 2014 and 2015. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the definitive allocation will be based on the following three criteria assessed for fiscal years 2013, 2014, and 2015: the revenue growth rate on a like-for-like basis, the ratio of consolidated EBITDA to consolidated revenue on a like-for-like basis; and the performance of the Vallourec share on the regulated NYSE Euronext Paris stock market against a benchmark panel. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.*

(b) *Definitive allocation of shares in 2017 for French residents and members of the Management Board, and in 2018 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2014, 2015 and 2016. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, final allocation shall depend on the following four criteria, assessed in 2014, 2015 and 2016: the rate of return on capital employed (ROCE), compared with the ROCE in the budget; consolidated revenue on a like-for-like basis, as compared with the revenue in the budget; the relative stock market performance of the Vallourec share on the regulated NYSE Euronext market in Paris, as compared with a benchmark panel; and the relative EBITDA performance as compared with the same panel as for the previous criterion. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.*

(c) *Definitive allocation of shares in 2018 for French residents and members of the Management Board, and in 2019 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the final award will depend on the following two criteria, assessed for 2015, 2016 and 2017: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the strategic plan, and the Total Shareholder Return (TSR) for 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.*

(d) *Definitive allocation of shares in 2019 for French residents and members of the Management Board, and in 2020 for non-French residents. For all beneficiaries (excluding Management Board members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Executive Committee, the final award will depend on the following two criteria, assessed for 2016, 2017 and 2018: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the strategic plan, and the Total Shareholder Return (TSR) for 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33. The number of shares allocated, as shown in the above table, corresponds to the application of a performance factor of 1.*

(e) *For all beneficiaries (excluding members of the Management Board and Executive Committee), this will depend on cost reduction in 2017, 2018 and 2019, in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free Cash Flow (FCF) for 2017, 2018 and 2019. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.4. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria: reducing costs in 2017, 2018 and 2019, in comparison to the Group's planned performance in the medium-term plan over the same period and the growth of the EBITDA margin between 2017 and 2019 in comparison to a panel of comparable companies. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.*

(f) *For all beneficiaries (excluding members of the Management Board and Executive Committee), this will depend on cost reduction in 2018, 2019 and 2020, in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free Cash Flow (FCF) for 2018, 2019 and 2020. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria: reducing costs in 2018, 2019 and 2020 in comparison to the Group's planned performance in the medium-term plan over the same period and the growth of the EBITDA margin between 2017 and 2019 in comparison to a panel of comparable companies. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.*

International performance share allocation plans	"2-4-6" plan (2013)	"2-4-6" plan (2014)
Allocation date	29/03/2013	15/04/2014
Vesting period	3 years (French residents) or 4 years (non-French residents)	3 years (French residents) or 4 years (non-French residents)
Holding period	2 years (French residents) or none (non-French residents)	2 years (French residents) or none (non-French residents)
Performance conditions	Ratio of EBITDA to revenue (2013, 2014 and 2015)	Ratio of EBITDA to revenue (2014, 2015 and 2016)
Theoretical number of shares allocated	191,144	208,100

Free share allocation plans (without performance condition)	"Value" 12 Plan	"Value" 13 Plan	"Value" 14 Plan	"Value" 15 Plan	"Value" 16 Plan	"Value" 17 Plan
Allocation date	06/12/2012	10/12/2013	16/12/2014	15/12/2015	14/12/2016	14/12/2017
Vesting period	4.6 years	4.6 years	4.6 years	4.6 years	4.6 years	4.6 years
Theoretical number of shares allocated	7,032	6,445	6,336	2,744	3,344	3,409

Change in number of shares

For all of these plans, the change in the number of shares being vested is as follows:

In number of shares	2017	2018
Number of shares being vested as at 1 January	**2,199,312**	**2,208,468**
Shares delivered during the year	(160,170)	(83,238)
Shares canceled	(654,358)	(716,175)
Shares allocated during the year	823,684	842,630
NUMBER OF SHARES BEING VESTED AS AT 31 DECEMBER	**2,208,468**	**2,251,685**

The reported figures correspond to the number of shares originally allocated, with a performance factor of 1 for plans that were vesting, and to the actual number of shares allocated for plans that had matured.

7. Provisions for contingencies and liabilities

The change in provisions for contingencies and liabilities is shown below:

	31/12/2017	Allowances	Reversals used	31/12/2018
Provisions for foreign exchange losses	10	-	10	-
Retirement provisions	132	70	-	202
Provisions for supplementary pension commitments	-	-	-	-
Provisions for performance share expenses	6,142	1,054	4,333	2,863
TOTAL	**6,284**	**1,124**	**4,343**	**3,065**
• Recognized in operating profit	-	1,124	4,343	-
• Recognized in financial profit	-	-	-	-
• Recognized in exceptional income	-	-	-	-

Disputes are provisioned according to the estimated probable cost at the reporting date of each year, in application of CRC Regulation No. 2000-06 on liabilities.

The balance of the provision for expenses relating to the performance share plans (2013, 2014, 2015, 2016, 2017 and 2018 plans) totaled €2.9 million.

RETIREMENT PROVISIONS

Total retirement commitments, net of plan assets, totaled €0.2 million as at 31 December 2018, as compared with €0.3 million as at 31 December 2017.

PROVISIONS FOR SUPPLEMENTARY PENSION COMMITMENTS

Total supplementary pension commitments, net of plan assets, totaled €0.7 million as at 31 December 2018.

Actuarial losses and past service costs not recognized totaled €0.8 million. The commitments not recognized in the balance sheet correspond to changes or to the failure to achieve assumptions, for which the effect is amortized over time using the corridor method.

INFORMATION ON INTEREST RATE RISK

Vallourec used swaps, where required, to hedge its variable-rate borrowing at a fixed interest rate. As at 31 December 2018, Vallourec had no variable-rate borrowing.

INFORMATION ON FOREIGN EXCHANGE RISK

As at 31 December 2018, Vallourec was not exposed to foreign exchange risk.

D – Notes to the income statement

1. Operating income/(loss)

REVENUE

Revenues of €2.3 million mainly correspond to the Group's reinvoicing of services to its subsidiary Vallourec Tubes for €2.5 million, and of the costs of employee performance share allocation plans to Group subsidiaries.

OPERATING EXPENSES

Operating expenses of €27.5 million consist mainly of fees, personnel costs, and the impact of free share allocation programs, and commissions, loan issue fees and allocations to provisions.

2. Financial income and expenses concerning affiliated companies

Financial expenses: none.

Financial income: €75.8 million.

3. Financial income/(loss)

Financial income was a loss totaling €57.0 million.

	As at 31/12/2017	31/12/2018
Financial income [(a)]	78,306	75,896
Interest expenses [(b)]	(93,305)	(133,193)
Net interest expenses	**(14,999)**	**(57,297)**
Change in provisions [(c)]	20,787	10
Other financial income and expenses	128	249
FINANCIAL INCOME/(LOSS)	**5,916**	**(57,038)**

(a) Of which €75.8 million corresponding to interest on loans with Vallourec Tubes SAS.

(b) Of which €0.1 million with affiliated companies.

(c) In 2017, the change in provisions related to the recovery of the provision for impairment of NSSMC securities sold during the fiscal year.

4. Exceptional income/(loss)

Exceptional income/(loss) in 2017 was a loss of €31 million, which resulted from transfer loss on treasury shares and the income/(loss) from disposal of equity interests in NSSMC.

E – Other information

1. Composition of average headcount

The Company employed five people as of late 2018, including two corporate officers (members of the Management Board).

2. Taxation

TAX CONSOLIDATION

Since 1 January 1988, the Company has been a member of a tax consolidation group formed under the provisions of Article 223-A of the French General Tax Code.

This agreement has been renewed automatically for five-year periods since 1999.

In 2018, the scope of the tax consolidation group included: Vallourec, Vallourec Bearing Tubes, Vallourec Université France, Valinox Nucléaire, Vallourec Tubes, Vallourec Tubes France, Vallourec Oil and Gas France, Vallourec One, Vallourec Services, Val27, and Val28.

The tax consolidation agreement requires subsidiaries of the tax group to record a tax expense equivalent to the amount they would have borne in the absence of tax consolidation.

In 2018, the exit of Vallourec Umbilicals, Vallourec Fittings and Vallourec Drilling Products France generated a €37.2 million tax gain recorded in the income statement.

Any income resulting from tax consolidation recorded by Vallourec corresponds mainly to the charge to income of the losses generated by Vallourec itself and tax loss carryforwards used by Vallourec.

The Vallourec consolidation tax group reported a loss in 2018 and its tax loss carryforward was €1,617.3 million at the end of 2018.

Increase and decrease in future tax liabilities

Nature of temporary differences *In € thousand*	**Amount (base) as at 31/12/2018**
Increase	**-**
Decrease	**1,800**
Provision for retirement commitments	73
Provision for employee share ownership arrangements	1,712
Provision for paid leave	15
Provision for Tax on Tourism Vehicles	-

As at 31 December 2018, the amount of tax loss carryforwards specific to the Company stood at €175.1 million.

Breakdown of income tax between income (loss) from recurring operations and non-recurring income (loss)

In € thousand	**Pre-tax income**	**Tax due**	**Net income**
Recurring	(71,890)	-	(71,890)
Non-recurring	2	-	2
Sub-total	**(71,888)**	**-**	**(71,888)**
Expense specific to Vallourec (tax credit)	-	(37,170)	(37,170)
Income relating to tax consolidation	-	-	-
TOTAL VALLOUREC	**(71,888)**	**(37,170)**	**(34,718)**

3. Compensation of members of administrative and management bodies

ADMINISTRATIVE BODIES

Attendance fees paid during the year amounted to €0.6 million.

MANAGEMENT BODIES

This information is not provided as it is not relevant in relation to the assets and liabilities, financial position and net income of Vallourec.

4. Off-statement of financial position commitments

Off-statement of financial position commitments are as follows:

- retirement benefits: €181 thousand (actuarial loss);
- supplementary retirement payment: €0.8 million (actuarial loss);
- long-term vehicle leases: €12 thousand.

The Company has not issued any form of collateral against its liabilities.

5. Subsequent events

On 19 February 2019, the Group renegotiated an extension to February 2021 for the €600 million in bank lines initially set to expire in 2020.

6. Vallourec subsidiaries and directly-held equity interests as at 31 December 2018

In € thousand Companies	Capital	Other equity before allocation of income (loss)	Percentage of capital held *(%)*	Accounting value of the securities held		Loans and advances granted by the Company and not yet repaid	Total securities and guarantees given by the Company	Sales excluding taxes for the last fiscal year	Income (loss) for the last fiscal year	Dividends received by the Company during the year
				Gross	Net					
A) SUBSIDIARIES AND EQUITY INTERESTS WITH A CARRYING AMOUNT IN EXCESS OF 1% OF VALLOUREC'S CAPITAL										
I. Subsidiaries (at least 50%-owned)										
French company										
Vallourec Tubes 27, avenue du Général-Leclerc 92100 Boulogne-Billancourt – France	1,503,948	973,806	100%	3,856,429	3,856,429	2,601,719	-	61,568	(317,291)	-

7. Financial results for the last five years

In €, except number of shares and number of employees	2014	2015	2016	2017	2018
CAPITAL					
Share capital	**261,195,950**	**271,376,864**	**902,476,010**	**915,975,520**	**915,975,520**
Number of ordinary shares in issue	130,597,975	135,688,432	451,238,005	457,987,760	457,987,760
Number of preference dividend shares (without voting rights) in issue	-	-	-	-	-
Maximum number of new shares to be issued:					
• by converting bonds	-	-	-	36,284,470	-
• by exercise of subscription rights	3,277,041	2,860,088	5,002,867	4,013,201	3,674,986
• by bond redemption	-	-	-	-	-
Revenue, excluding taxes	7,113,746	3,768,771	5,758,082	5,050,327	2,335,242
Income (loss) before tax, employee profit-sharing, depreciation and amortization, and provisions	158,212,497	86,095,267	(43,370,419)	(70,741,338)	(70,504,334)
Income tax	(7,021,640)	(1,031,743)	(8,838,867)	336,751	37,169,694
Employee profit-sharing for the year	-	-	-	-	-
Income (loss) after tax, employee profit-sharing, depreciation and amortization, and provisions	159,162,352	61,538,102	(17,841,399)	(39,056,082)	(34,718,136)
Distributed earnings	**105,784,360**	**-**	**-**	**-**	**-**
EARNINGS PER SHARE					
Income after taxes and employee profit-sharing but before amortization and provisions	1.27	0.64	(0.08)	(0.16)	(0.07)
Income (loss) after tax, employee profit-sharing, depreciation and amortization, and provisions	1.22	0.45	(0.04)	(0.09)	(0.08)
Dividend allotted to each existing share	**0.81**	**-**	**-**	**-**	**-**
WORKFORCE					
Average number of employees during the fiscal year	7	7	7	5	5
Amount of payroll costs for the year	3,194,083	2,917,511	2,378,067	2,708,256	2,309,412
Payroll-related costs (social security, employee benefits, etc.)	1,905,112	1,251,897	1,969,216	1,138,027	1,069,659

6.4 Statutory Auditors' Report on the Financial Statements

For the year ended 31 December 2018

This is a translation into English of the Statutory Auditors' report on the financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users.

This Statutory Auditors' report includes information required by European regulation and French law, such as information about the appointment of the Statutory Auditors or verification of the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Annual General Shareholders' Meeting of Vallourec,

Opinion

In compliance with the engagement entrusted to us by your Annual General Shareholders' Meeting, we have audited the accompanying financial statements of Vallourec S.A. (hereafter, "the Company") for the year ended 31 December 2018.

In our opinion, the financial statements give a true and fair view of the assets and liabilities and of the financial position of the Company as at 31 December 2018 and of the results of its operations for the year then ended in accordance with French accounting principles.

The audit opinion expressed above is consistent with our report to the Financial and Audit Committee.

Basis for Opinion

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the *Statutory Auditors' Responsibilities for the Audit of the Financial Statements* section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from 1 January 2018 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No. 537/2014 or in the French Code of ethics *(Code de déontologie)* for Statutory Auditors.

Justification of Assessments – Key Audit Matters

In accordance with the requirements of Articles L.823-9 and R.823-7 of the French Commercial Code *(Code de commerce)* relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the financial statements.

Measurement of equity interests
Notes B, C.1 and E.6 to the financial statements

Key Audit Matter	Audit Approach
Equity interests on the balance sheet amounted to €3,856.4 million at 31 December 2018, represent the most significant item of the balance sheet. They correspond to the shares of Vallourec Tubes, a sub-holding company of the Vallourec Group. As described in the Note "Equity interests" to the financial statements, the Company constitutes a provision for impairment when the value in use of financial interest is less than its net carrying amount. The value in use is based on the expected cash flows which are estimated based on the Group's strategic plan for the first five years, with a projection over the next three years and a terminal value. This method requires the use of estimations and judgment by Management to determine assumptions underlying cash flows. Given the value of financial interests and the sensitivity of the valuation model to the assumptions used in the determination of cash flows, we considered the correct valuation of Vallourec Tubes shares as a key audit matter.	Our work consisted mainly in assessing the reasonableness of cash flow forecasts for the valuation of Vallourec Tubes' financial interests, including: • obtaining the Vallourec Group's cash flow and operating cash flow forecasts prepared by the Company, and assessing their consistency with the forecast data from the latest strategic plans, prepared under the supervision of Executive Management and approved by the Supervisory Board; • gaining an understanding of (i) the process for preparing and approving the estimates and hypothesis used by Management, (ii) the procedures for approval of the results of these tests by the governance entities, and we (iii) assessed the appropriateness of the model adopted to determine the value in use of the financial interests; • with the support of our valuation experts, we assessed the appropriateness of the various assumptions underlying the cash flow forecasts, particularly with respect to the Group's internal data and sectorial macroeconomic data analyses, namely (i) price and volume assumptions that are dependent on investment expenditures in the exploration and production of oil and natural gas, and (ii) exchange rates, growth rates and discount rates. The consistency of cash forecasts with past performance, market outlook, and forecast data presented to the Company's Supervisory Board was also analysed; • we performed our own sensitivity analyses on these impairment tests; • we verified that the value resulting from the cash flow forecasts has been adjusted by the Vallourec Group net debt amount.

Specific verifications

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by French laws and regulations.

Information given in the Management Report and the other documents with respect to the financial position and the financial statements provided to the Shareholders

We have no matters to report as to the fair presentation and the consistency with the financial statements of the information given in the Management Report of the Management Board and in the other documents with respect to the financial position and the financial statements provided to the Shareholders.

We attest the fair presentation and the consistency with the financial statements of the information relating to payment terms, required under Article D.441-4 of the French Commercial Code *(Code de commerce)*.

Corporate governance report

We attest that the Supervisory Board's report on corporate governance sets out the information required by Articles L.225-37-3 and L.225-37-4 of the French Commercial Code.

Concerning the information given in accordance with the requirements of Article L. 225-37-3 of the French Commercial Code *(Code de commerce)* relating to remunerations and benefits received by the directors and any other commitments made in their favour, we have verified its consistency with the financial statements, or with the underlying information used to prepare these financial statements and, where applicable, with the information obtained by your Company from controlling and controlled companies. Based on this work, we attest the accuracy and fair presentation of this information.

Information on matters likely to have an effect on a public tender or exchange offer is provided in accordance with Article L. 225-37-5 of the French Commercial Code *(Code de commerce)*. We have verified the consistency of the information with the documents from which it is derived, which were provided to us. Based on our work, we have no matters to report on the information.

Other information

In accordance with French law, we have verified that the required information concerning the purchase of investments and controlling interests and the identity of the shareholders and holders of the voting rights has been properly disclosed in the management report.

Report on Other Legal and Regulatory Requirements

Appointment of the Statutory Auditors

We were appointed Statutory Auditors of Vallourec S.A. by the Annual General Shareholders' Meeting held on 1 June 2006 for both audit firms.

As at 31 December 2018, KPMG S.A. were in their thirteenth year of their total uninterrupted engagement and Deloitte & Associés were in their seventeenth year of their total uninterrupted engagement, given the succession of mandates between legal entities of the Deloitte network.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with French accounting principles and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is expected to liquidate the Company or to cease operations.

The Financial and Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risks management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The financial statements were approved by the Management Board.

Statutory Auditors' Responsibilities for the Audit of the Financial Statements

Objectives and audit approach

Our role is to issue a report on the financial statements. Our objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As specified in Article L.823-10-1 of the French Commercial Code *(Code de commerce)*, our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the Statutory Auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the financial statements;
- assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the Statutory Auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- evaluates the overall presentation of the financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation.

Report to the Audit Committee

We submit a report to the Financial and Audit Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Financial and Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the financial statements of the current period and which are therefore key audit matters. We describe these matters in this audit report.

We also provide the Financial and Audit Committee with the declaration provided for in Article 6 of Regulation (EU) No. 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set out, in particular, by Articles L.822-10 to L.822-14 of the French Commercial Code *(Code de commerce)* and in the French Code of Ethics *(Code de déontologie)* for Statutory Auditors. Where appropriate, we discuss with the Financial and Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris La Défense, on 25 March 2019

The Statutory Auditors,
French original signed by

Deloitte & Associés
Véronique Laurent

KPMG Audit
Division of KPMG SA
Alexandra Saastamoinen

Corporate governance

Chapter 7

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7.1 Composition and operation of the Management and Supervisory Boards

The Ordinary and Extraordinary Shareholders' Meeting held on 14 June 1994 approved the adoption of a dual management structure with a Supervisory Board and a Management Board.

This structure is based on the separation of the management functions, which are the responsibility of the Management Board, from the supervision of that management, which is the responsibility of the Supervisory Board, the representative body of the shareholders:

- the Management Board, which is a collegial body, is responsible for managing the Group using the powers conferred on it by statutory and regulatory provisions and the Group's bylaws; and
- the Supervisory Board is responsible for ongoing management control; it receives the information needed to perform its role.

7.1.1 Composition of the Management and Supervisory Boards

7.1.1.1 Management Bodies

THE MANAGEMENT BOARD

At the date of this Registration Document, the Management Board is comprised of the following two members:

Mr. Philippe Crouzet
Chairman of the Management Board
62 years old
Date of first appointment
1 April 2009
End of term
15 March 2020

Mr. Olivier Mallet
Member of the Management Board
62 years old
Date of first appointment
30 September 2008
End of term
15 March 2020

Mr. Philippe CROUZET

Born on 18 October 1956 (62 years old) – French nationality

Chairman of the Management Board

First appointment: 1 April 2009
Most recent renewal: 29 January 2016
End of term: 15 March 2020
Vallourec shares held: 71,874

Expertise and managerial experience

- Graduate of *École nationale d'administration*
- Former Counsel *(Maître des requêtes)* to the *Conseil d'État*
- Twenty-three years' industrial experience with the Saint-Gobain Group
- Chairman of the Management Board of Vallourec since 1 April 2009

Positions held by Mr. Philippe CROUZET

Positions currently held

- Chairman of the Management Board of Vallourec SA[a]* (since 2009)
- Chairman and Director of Vallourec Tubes SAS[a] (since 2009)
- Chairman of Vallourec Tubes France SAS[a] (since 2017)
- Chairman of Vallourec Oil & Gas France SAS[a] (since 2017)
- Director of Vallourec Services SA [a] (since 2017)
- Chairman of the Supervisory Board of Vallourec Deutschland GmbH [a] (Germany) (since 2017)
- Director of Vallourec Soluções Tubulares do Brasil SA [a] (since 2016)
- Director and Chairman of the Nuclear Commitment Monitoring Committee of Électricité de France* (since 2009) and a member of the Audit Committee (since 2015)
- Director of *Théâtre de la Ville* (Paris) (since 2011)
- Vice-President of *Institut de l'entreprise* (since 2013)
- Member of the *Association pour la Maison de la culture du Japon à Paris* (since November 2018)

Positions expired within the last five years

- Director of Vallourec Tubos do Brasil SA [1] [a] (Brazil) (until 2017)
- Director of *Théâtre national de l'Opéra-Comique* (until 2017)

Mr. Philippe Crouzet does not receive any compensation as a corporate officer of Vallourec's direct or indirect subsidiaries.

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(1) Vallourec Tubos do Brasil Ltda following the change in corporate form which occurred on 20 November 2017.

(a) Offices held in relation to the Group.

** Listed company (for positions currently held).*

Mr. Olivier MALLET

Born on 14 July 1956 (62 years old) – French nationality

Member of the Management Board

First appointment: 30 September 2008
Most recent renewal: 29 January 2016
End of term: 15 March 2020
Valloufec shares held: 30,061

Expertise and managerial experience

- Graduate of *École nationale d'administration* – General Inspector of Finance
- Technical advisor within several cabinet offices, including that of the Prime Minister (1988-1993)
- CFO and member of the Executive Committee with responsibility for finance at Thomson Multimedia (1995-2001)
- CFO and member of the Executive Committee of Pechiney (2001-2004)
- Deputy CFO (2004-2006) then Head of the Mining, Chemistry and Enrichment sector of the Areva Group (2006-2008)
- Member of the Management Board of Vallourec since 30 September 2008, Chief Financial Officer and General Counsel

Positions held by Mr. Olivier MALLET

Positions currently held

- Member of the Management Board of Vallourec SA [a] * (since 2008)
- CEO and Director of Vallourec Tubes SAS [a] (since 2008)
- Chairman & CEO and Director of Vallourec Services SA [a] (since 2008)
- Member of the Supervisory Board of Vallourec Deutschland GmbH [a] (Germany) (since 2008)
- Director of Vallourec Soluções Tubulares do Brasil SA [a] (Brazil) (since 2016)
- Director of Vallourec USA Corporation [a] (United States) (since 2008)
- Director of Vallourec Tube-Alloy, LLC [a] (United States) (since 2008)
- Chairman (since 2009) and Director of Vallourec Industries Inc. [a] (United States) (since 2008)
- Chairman and Director of Vallourec Holdings Inc. [a] (United States) (since 2009)
- Director of Vallourec Drilling Products USA, Inc. [a] (United States) (since 2008)
- Member of the Executive Committee of VAM USA LLC [a] (United States) (since 2009)
- Member of the Executive Committee of Vallourec Star, LP [a] (United States) (since 2008)
- Manager of Vallourec One SARL [a] (since 2017)
- *Commissioner* of PT Citra Tubindo Tblc (since February 2018)

Positions expired within the last five years

- Director of Vallourec Tubos do Brasil SA [1] [a] (Brazil) (until 2017)
- Director of Vallourec Canada Inc. [a] (Canada) (until 2017)
- Director of Vallourec Heat Exchanger Tubes SAS [a] (until 2016) [2]

Mr. Olivier Mallet does not receive any compensation as a corporate officer of Vallourec's direct or indirect subsidiaries.

(1) Vallourec Tubos do Brasil Ltda following the change in corporate form which occurred on 20 November 2017.

(2) This company has been called Neotiss since 29 April 2016.

(a) Offices held in relation to the Group.

** Listed company (for positions currently held).*

EXECUTIVE COMMITTEE

To implement its strategic guidelines and key decisions, the Management Board relies on an Executive Committee, which has 10 members. The Executive Committee examines and drafts proposals to the Management Board regarding all of the actions needed to implement the Group's strategy. It provides daily management for operational and functional activities. It holds meetings once every two weeks, which are chaired by Mr. Philippe Crouzet.

At the date of this Registration Document, the Executive Committee is comprised of the following members:

MANAGEMENT BOARD

Mr. Philippe CROUZET
Chairman of the Management Board

Mr. Olivier MALLET
Chief Financial Officer

EXECUTIVE COMMITTEE

Along with Philippe Crouzet and Olivier Mallet

Mr. Philippe CARLIER
Director
Technology & Industry

Mr. Nicolas de COIGNAC
Director
North America

Mr. François CURIE
Director
of Human Resources

Mr. Rémi DUJON
Group's General Counsel and General Secretary

Mr. Edouard GUINOTTE
Director
Middle East/Asia

Mr. Didier HORNET
Director
Development & Innovation

Mr. Alexandre LYRA
Director
South America

Mr. Hubert PARIS
Director
Europe/Asia

7.1.1.2 The Supervisory Board

POLICY ON THE COMPOSITION OF THE SUPERVISORY BOARD;

The Board policy relating to its composition relies on the following four fundamental objectives:

- selection of competent members;
- a balanced composition, which creates value;
- acting in the best interest of the Company;
- a membership that ensures a seamless exchange of information and that each member can express himself or herself.

1. Selection of competent members

Aware that first-rate quality must lie in that of its members, the Board makes every effort to add members that have performed managerial duties with a high level of responsibility and/or who have recognized expertise in financial, strategic, industrial or legal areas. Furthermore, when they assume office and throughout their terms, members have the chance to benefit from training sessions on specific aspects of the Group, its businesses, its sector of activity and its organization, if they so desire.

2. Balanced composition, which creates value

Like any business player, the Supervisory Board is committed to the process of creating value. Consequently, beyond the challenges of social performance, it endeavors to ensure the diversity of its members, in terms of age, gender, qualifications and professional experience, which it considers to be a key source of creativity and innovation. The Board also takes international diversity into account, to reflect the Group's global presence.

The average age on the Board has stabilized over the last few years at 57, which the Board members have deemed to be satisfactory. Diverse genders and experiences bring to the Board distinct sensitivities that contribute favorably to good governance, which itself leads to competitive advantages. At the date of this Registration Document, the Board is comprised of 13 members, who have varied competencies (financial expertise, experience in general management, organizational transformation, multicultural experience, etc.), gained primarily in an international environment, which is a source of enrichment. The Board will also contain one employee representative and one employee shareholder representative. Furthermore, 50% of these members are female, excluding the employee representative from the analysis in compliance with the law. 31% of the Board members are of foreign nationality (British, Japanese, Dutch and Spanish). Vivienne Cox, who is British, is the Board Chairman.

Since the Board is well aware of how enriching a diverse body can be, it intends to pursue efforts to diversify its membership.

This diversity policy has been taken into account by the Chairman, the Appointments, Compensation and Governance Committee, and by the Board itself in considering its composition, which has led to proposals to renew terms of office and to appoint new members. Therefore, in its report on the draft resolutions that were submitted for approval at the Shareholders' Meeting of 25 May 2018, the Supervisory Board presented the reasons that led it to propose renewing the terms of Ms. Vivienne Cox, Ms. Laurence Broseta, Ms. Alexandra Schaapveld, and Mr. Cédric de Bailliencourt, and to appoint Mr. Jean-Jacques Morin.

3. Acting in the best interest of the Company

The Board feels that each member is a guardian of the corporate interest and members must accomplish their duties objectively and independently, in order to gain and maintain the trust of all of the shareholders who appointed them.

Consequently, going beyond the qualification of an independent member, the Board intends to propose to the Shareholders' Meeting members with integrity, who have strong ethics that lead them to act with ongoing concern for the corporate interest and the interests of all shareholders, and specifically, to avoid conflicts of interest. To that end, each member is required to inform the Board of any situation involving a conflict of interest, even a potential one, and to refrain from taking part in discussions or voting on any issue at Board meetings where there may be a conflict of interest, and to leave the Board meeting if a subject is discussed that places the member in such a situation.

When one of the members has a conflict of interest, whether actual or potential, regarding a subject matter to be debated by the Board, the Board ensures, by relying on the Appointments, Compensation and Governance Committee, that the information regarding this subject matter is not communicated to that member.

The internal regulations of the Supervisory Board and the Appointments, Compensation and Governance Committee contain specific provisions designed to prevent the risk of conflicts of interest. Therefore, a member cannot accept another position or appointment, or make a significant investment in any company or business in competition with Vallourec or operating upstream or downstream of it, without the Board's prior approval. As an exception, this rule does not apply to legal entities that are members of the Board, but if they take new positions or similar appointments, each case will be discussed with the Board in order to eliminate any risk of conflicts of interest. Members of the Board and members of the Management Board must inform the Chairman of the Board before accepting a new appointment in other companies. The Chairman of the Board will give an opinion after consulting with the Appointments, Compensation and Governance Committee.

4. A membership that ensures a seamless exchange of information and that each member can express himself or herself

Although the law allows a Board to contain up to 18 members, the Board wishes to limit its membership in order to ensure there is a satisfying and seamless exchange of information, and to allow each member to express himself or herself, thereby encouraging each person's action and involvement. To that end, the Chairman of the Board encourages the participation of the members and sees to it that each member can express an opinion.

SUPERVISORY BOARD COMMITTEES

The Supervisory Board relies on the work of specialized committees, which play a consulting role and prepare certain Board resolutions. They issue proposals, make recommendations and provide advice in their areas of expertise.

On 13 December 2018, the Supervisory Board decided to create a new specialized Committee, tasked with assisting it on issues relating to its Corporate Social Responsibility (CSR) strategy. By extending the strong commitments Vallourec has made for numerous years, this new Committee aims to ensure that the Group best anticipates the non-financial challenges, opportunities, and risks associated with its activity, in order to promote the creation of long-term value in a responsible and harmonious manner.

The Supervisory Board is thus now assisted by four specialized committees:

- the Finance and Audit Committee;
- the Appointments, Compensation and Governance Committee;
- the Strategy Committee; and
- the Corporate Social Responsibility (CSR) Committee.

The Supervisory Board appoints the members of each of the Committees, establishes their powers and determines their compensation.

The term of office of the members of each of the Committees is the same as their term of office as members of the Supervisory Board, unless the composition of the Committee is changed earlier. Subject to this condition, the term of office of a Committee member may be renewed at the same time as the term of office of a member of the Supervisory Board. A Committee's composition may be changed at any time by decision of the Supervisory Board.

COMPOSITION OF THE SUPERVISORY BOARD

Vivienne COX ◇
Chairman of the Supervisory Board

Alexandra SCHAAPVELD ◇

Pierre PRINGUET ◇
Vice-President and Lead Member of the Supervisory Board

Jean-Jacques MORIN ◇

Maria-Pilar ALBIAC-MURILLO ◇

Yuki IRIYAMA ◆

Philippe ALTUZARRA ◇

Mickaël DOLOU

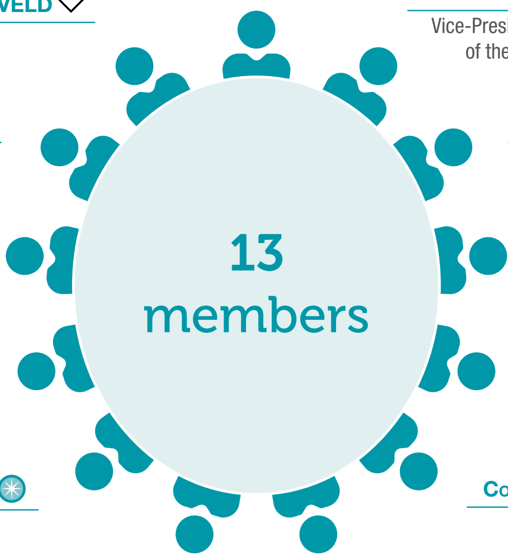
Cédric de BAILLIENCOURT ◇

Pascale CHARGRASSE

Corinne de BILBAO ◇

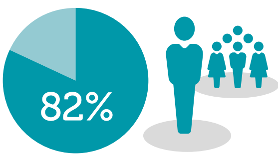
Laurence BROSETA ◇

Bpifrance Participations, represented by **Alexandre OSSOLA** ◆

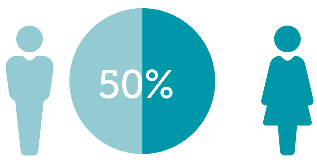


Finance and Audit Committee
Committee Chairman
Employee Representative
Appointments, Compensation and Governance Committee
Committee Chairman
Employee Shareholder Representative
Strategy Committee
Committee Chairman
◇ Independent member
CSR Committee
Committee Chairman
◆ Non-independent member

INDEPENDENCE RATE (1)



GENDER EQUALITY (2)

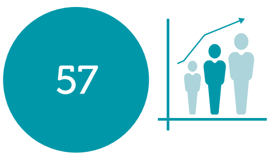


6 Board members are women

DIVERSITY

4 Board members are of foreign nationality and 5 nationalities are represented on the Board

AVERAGE AGE

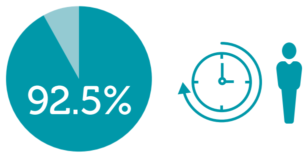


EMPLOYEE REPRESENTATION

incl. 1 member representing employee shareholders, who was elected by the Shareholders' Meeting

and 1 member representing employees who was appointed by the Group Committee

AVERAGE ATTENDANCE RATE



(1) *In accordance with the AFEP-MEDEF Code, the employee representative and the employee shareholder representative are excluded from the analysis.*
(2) *In accordance with the law, the employee representative is excluded from the calculation.*

SUMMARY PRESENTATION OF THE SUPERVISORY BOARD

	PERSONAL INFORMATION				EXPERIENCE	POSITION ON THE BOARD				PARTICIPATION ON BOARD COMMITTEES			
	Age	Gender	Nationality	Number of shares	Number of positions in listed companies*	Independence	Date of first appointment (dd-mm-yyyy)	End of term (dd-mm-yyyy)	Seniority on the Board	FAC	ACGC	SC	CSRC
NON-EXECUTIVE CORPORATE OFFICER													
Vivienne Cox	59	♀	British	20,880	3	◇	31-05-2010	2022 OSM	9			●	
BOARD MEMBERS													
Pierre Pringuet	69	♂	French	7,914	4	◇	23-02-2015	2020 OSM	4		●		
Maria-Pilar Albiac-Murillo	65	♀	Spanish	3,000	1	◇	28-05-2015	2019 OSM	4				○
Philippe Altuzarra	68	♂	French	23,000	2	◇	28-05-2015	2019 OSM	4			○	○
Cédric de Bailliencourt	49	♂	French	7,800	3	◇	25-05-2014	2022 OSM	5				
Corinne de Bilbao	52	♀	French	500	1	◇	21-03-2019	2020 OSM	0				
Bpifrance Participations, represented by **Alexandre Ossola**	44	♂	French	66,695,708	14	◆	06-04-2016	2020 OSM	3	○		○	
Laurence Broseta	50	♀	French	1,436	2	◇	06-04-2016	2022 OSM	3		○		●
Yuki Iriyama	71	♂	Japanese	500	1	◆	12-05-2017	2021 OSM	2				
Jean-Jacques Morin	58	♂	French	500	2	◇	25-05-2018	2022 OSM	1	●			
Alexandra Schaapveld	60	♀	Dutch	12,272	3	◇	31-05-2010	2022 OSM	9	○	○		
BOARD MEMBERS REPRESENTING EMPLOYEE SHAREHOLDERS													
Pascale Chargrasse	58	♀	French	8,327	1	N/A	13-12-2010	2019 OSM	8		○		
BOARD MEMBERS REPRESENTING EMPLOYEES													
Mickaël Dolou	43	♂	French	745	1	N/A	03-10-2017	2021 OSM	1		○		

* *Including Vallourec SA.*

● *Chairman*

○ *Member*

◇ *Independence under the criteria of the AFEP-MEDEF Code as assessed by the Supervisory Board*

◆ *Non-independence under the criteria of the AFEP-MEDEF Code as assessed by the Supervisory Board*

***FAC:** Finance and Audit Committee*

***ACGC:** Appointments, Compensation and Governance Committee*

***SC:** Strategy Committee*

***CSRC:** Corporate Social Responsibility Committee*

DIVERSITY AND EXPERTISE OF EACH OF THE SUPERVISORY BOARD MEMBERS

	Industry/ Oil & Gas	Managerial positions/ operational management within major groups	International experience	Financial/ audit expertise	Governance of listed companies	Social and environmental responsibility
Vivienne Cox	○	○	○		○	○
Pierre Pringuet		○	○		○	
Maria-Pilar Albiac-Murillo	○	○	○			
Philippe Altuzarra		○	○	○		
Cédric de Bailliencourt		○		○	○	
Corinne de Bilbao	○	○	○			
Bpifrance Participations, represented by **Alexandre Ossola**				○	○	
Laurence Broseta	○	○	○			○
Pascale Chargrasse	○					
Mickaël Dolou	○		○			
Yuki Iriyama	○	○	○			
Jean-Jacques Morin	○	○	○	○	○	
Alexandra Schaapveld		○	○	○	○	

CHANGES IN THE COMPOSITION OF THE SUPERVISORY BOARD AND OF THE COMMITTEES DURING THE FISCAL YEAR

As at 31 December 2018

	Departures	Appointments	Renewals
Supervisory Board	Henri Poupart-Lafarge *(25/05/2018)* José Carlos Grubisich *(30/11/2018)*	Jean-Jacques Morin *(25/05/2018)*	Vivienne Cox *(25/05/2018)* Cédric de Bailliencourt *(25/05/2018)* Laurence Broseta *(25/05/2018)* Alexandra Schaapveld *(25/05/2018)*
Finance and Audit Committee	Henri Poupart-Lafarge *(25/05/2018)*	Jean-Jacques Morin *(25/05/2018)*	Alexandra Schaapveld *(25/05/2018)*
Appointments, Compensation and Governance Committee			Laurence Broseta *(25/05/2018)* Alexandra Schaapveld *(25/05/2018)*
Strategy Committee	José Carlos Grubisich *(30/11/2018)*		Vivienne Cox *(25/05/2018)*
Corporate Social Responsibility (CSR) Committee		Laurence Broseta *(13/12/2018)* Maria-Pilar Albiac-Murillo *(13/12/2018)* Philippe Altuzarra *(13/12/2018)*	

During fiscal year 2018, Jean-Jacques Morin replaced Henri Poupart-Lafarge, whose term was expiring at the end of the annual Shareholders' Meeting. He did not wish to renew it, wishing to fully dedicate his time to his new responsibilities. Jean-Jacques Morin's extensive financial expertise and executive management experience allowed him to succeed Henri Poupart-Lafarge as Chairman of the Financial and Audit Committee. José Carlos Grubisich resigned from his position as a Supervisory Board member on 30 November 2018 for personal reasons. He has been replaced by Corinne de Bilbao, who was coopted for the remainder of this term on 21 March 2019 by the Supervisory Board. This cooptation is being proposed to the 2019 Shareholders' Meeting on 23 May 2019 for ratification.

Ms. Vivienne COX

Born on 29 May 1959 (59 years old) – British nationality

Chairman of the Supervisory Board
Chairman of the Strategy Committee

Commander of the Most Excellent Order of the British Empire (CBE)

First appointment: 31 May 2010
Renewal: 2014 OSM, 2018 OSM
End of term: 2022 OSM
Vallourec shares held: 20,880

Summary of main areas of expertise and experience

- Graduate of Oxford University and of INSEAD, holding an Honorary Doctorate from the University of Hull and the University of Hertfordshire
- Twenty-eight years' experience with the BP Group
- CEO of BP Gas, Power and Renewables (2004-2009)
- Commissioner of the Airport Commission of the Department of Transport of the British government (since 2012)
- Chairman of the Rosalind Franklin Institute

Main activities performed outside of the Company

- Director of Pearson Plc*
- Director of GlaxoSmithKline Plc*

Positions held by Ms. Vivienne COX

Positions currently held

- Chairman of the Supervisory Board of Vallourec*
- Director of Pearson Plc*, Chairman of the Appointments and Governance Committee, member of the Reputation and Responsibility Committee, member of the Audit Committee, and Senior Independent Director
- Director of GlaxoSmithKline Plc*, member of the Compensation Committee and member of the Social Responsibility Committee
- Director of Stena AB Gothenburg
- Member of the Consulting Board and Chairman of the Compensation Committee of Montrose Associates

Positions expired within the last five years

- Lead Independent Director of the Department for International Development of the British government (until 2017)
- Chairman of the Reputation and Responsibility Committee of Pearson Plc (until 2016) and member of the Appointments Committee and the Compensation Committee of Pearson Plc (until 2017)
- Manager B of Stena International SARL (Luxembourg) (until 2017)
- Director and member of the Sustainable Development Committee, the Compensation Committee and the Appointments Committee of BG Group Plc (until 2016)
- Director of The Climate Group (until 2015)
- Director and member of the Appointments Committee and the Sustainable Development Committee of Rio Tinto Plc (until 2014)

* *Listed company (for positions currently held).*

Mr. Pierre PRINGUET

Born on 31 January 1950 (69 years old) – French nationality

Vice-Chairman and Lead Member of the Supervisory Board
Chairman of the Appointments, Compensation and Governance Committee

Officer of the French Legion of Honor
Commander of the Order of Agricultural Merit

First appointment: 23 February 2015
Renewal: 2016 OSM
End of term: 2020 OSM
Vallourec shares held: 7,914

Summary of main areas of expertise and experience

- Graduate of the *École Polytechnique* and Engineer for the French Mines Inspectorate *(Corps des Mines)*
- Began career in public service, from 1976 to 1987: In charge of an industry and mining engagement with the prefect of the Lorraine region (1976-1978); Head of financial procedures and social relations with the Managing Director of Industry (1979-1982); Chief Engineer of Mines (1981); Technical Consultant to Michel Rocard, Minister of Land Management and Planning, and later the Minister of Agriculture (1981-1985); Director of Agricultural and Food Industries with the French Ministry of Agriculture (1985-1987)
- Since 1987, in the Pernod Ricard Group: Director of Development of the Pernod Ricard Group (1987-1989); Managing Director of Société pour l'Exportation de Grandes Marques (1989-1996); Chairman & CEO of Pernod Ricard Europe (1997-2000); Deputy CEO of Pernod Ricard (2000-2005); Director of Pernod Ricard (since 2004); COO of Pernod Ricard (2005-2008); Managing Director of Pernod Ricard (2008-2015); Vice-Chairman of the Board of Directors of Pernod Ricard (2012-2019)

Main activities performed outside of the Company

- Director of Pernod Ricard*
- Director of Iliad*, Cap Gemini* and Avril Gestion SAS (Avril Group)

Positions held by Mr. Pierre PRINGUET

Positions currently held

- Vice-Chairman and Lead Member of the Supervisory Board of Vallourec*, Chairman of the Appointments, Compensation and Governance Committee
- Director of Pernod Ricard*, member of the Strategy Committee and member of the Compensation Committee
- Director and member of the Compensation Committee of Iliad*
- Director of Cap Gemini*, Chairman of the Compensation Committee and member of the Ethics and Governance Committee
- Director of Avril Gestion SAS (Avril Group)
- Chairman of the Association of Mining Engineers (*Association Amicale des Ingénieurs des Mines* – AAIM)

Positions expired within the last five years

- Vice-Chairman of the Board of Directors of Pernod Ricard (until January 2019)
- Chairman of the *Association Française des Entreprises Privées* (AFEP) (until 2017)
- Chairman of the Scotch Whisky Association (until 2017)
- Chairman of AgroParisTech (until 2016)
- CEO of Pernod Ricard (until 2015)
- Chairman of *Comité Sully*, an association for the promotion of the French agrifood industry (until 2015)

* *Listed company (for positions currently held).*

Ms. Maria-Pilar ALBIAC-MURILLO

Born on 21 August 1953 (65 years old) – Spanish nationality

Member of the Supervisory Board
Member of the Corporate Social Responsibility Committee

First appointment: 28 May 2015
End of term: 2019 OSM
Vallourec shares held: 3,000

Summary of main areas of expertise and experience

- Graduate of the University of Zaragoza (Spain), and the holder of an MBA from Central Michigan University (United States)
- A twenty-six year career at General Motors, sixteen of which were spent in the United States. Fifteen years in Operations, Plant Director in Saginaw, Michigan (1991-1993), Plant Director in Logroño, Spain (1993-1996)
- Chairman and CEO of Saginaw Deutschland GmbH (1996-1999)
- Seven years at Delphi Corporation: Site Manager (Delphi Alabama Operations), Plant Manager, Site Director (Delphi Flint East Operations) and Director of Product Line (Delphi Troy Headquarters)
- Vice-President in charge of operations in Mexico for Remy (2006-2007)
- Eight years at the Airbus Group: Executive Vice-President of Operations and Head of Transformation at Airbus Defence and Space, and A400M Industrialization (2008-2016)
- Head of Product and Innovation to Market Excellence of Philips Innovations Services (2016-2017)

Main activities performed outside of the Company

- None

Positions held by Ms. Maria-Pilar ALBIAC-MURILLO

Positions currently held

- Member of the Supervisory Board of Vallourec*

Positions expired within the last five years

- Head of Product and Innovation to Market Excellence of Philips Innovations Services (until 2017)
- Executive Vice-President of Operations and Head of Transformation at Airbus Defence and Space, and A400M Industrialization (until 2016)
- Director of Banque Populaire Occitane (until 2016)

* *Listed company (for positions currently held).*

Mr. Philippe ALTUZARRA

Born on 3 April 1950 (68 years old) – French nationality

Member of the Supervisory Board
Member of the Strategy Committee
Member of the Corporate Social Responsibility Committee

First appointment: 28 May 2015
End of term: 2019 OSM
Vallourec shares held: 23,000

Summary of main areas of expertise and experience

- Graduate of Sciences Po Bordeaux and of the *École nationale d'administration*
- He began his career at the Ministry of Finance in 1973: Technical advisor at the Office of the Secretary of State for Defense (1973-1975), Economic Attaché at the French Embassy in London (1975-1978), Civil Administrator, French Trade Directorate (1981-1986), Economic Advisor at the French Embassy in Tokyo (1986-1989)
- Member of the Executive Committee, Deputy CFO of the Havas Group (1989-1993)
- Twenty-one years at Goldman Sachs (1993-2014)

Main activities performed outside of the Company

- Director of Altuzarra LLC
- Member of the Nuclear Commitment Financial Expertise Committee of Electricité de France (EDF)*

Positions held by Mr. Philippe ALTUZARRA

Positions currently held

- Member of the Supervisory Board of Vallourec*
- Director of Altuzarra LLC
- Member of the Nuclear Commitment Financial Expertise Committee of Electricité de France (EDF)*
- Member of the Consulting Board of EDF* Invest

Positions expired within the last five years

- Chairman of the Supervisory Board of La Redoute (until 2018)
- Member of the International Board of Goldman Sachs (London) (until 2014)

* *Listed company (for positions currently held).*

Mr. Cédric de BAILLIENCOURT

Born on 10 July 1969 (49 years old) – French nationality

Member of the Supervisory Board

First appointment: 25 May 2014
Renewal: 2018 OSM
End of term: 2022 OSM
Vallourec shares held: 7,800

Summary of main areas of expertise and experience

- Graduate of the *Institut d'études politiques de Bordeaux*, postgraduate degree in Political and Social Communication
- Twenty-three years with the Bolloré Group as Director of Shareholding (since 1996), CEO (since 2002) and Vice-Chairman of Financière de l'Odet, Vice-Chairman of Bolloré (since 2002), and CFO of the Bolloré Group (since 2008)

Main activities performed outside of the Company

- CFO of Bolloré*
- Member of the Management Board of Vivendi*

Positions held by Mr. Cédric de BAILLIENCOURT

Positions currently held

Offices and positions held in French companies

Offices and positions held at the Bolloré Group

- Vice-Chairman and COO of Financière de l'Odet**
- Vice-Chairman of Bolloré*
- Vice-Chairman of Compagnie du Cambodge**
- Chairman of the Boards of Directors of Compagnie des Tramways de Rouen, Financière Moncey**, Société des Chemins de Fer et Tramways du Var et du Gard, and Société Industrielle et Financière de l'Artois**
- Chairman of Compagnie des Glénans, Compagnie de Treguennec, Compagnie de Guénolé, Compagnie de Guilvinec, Compagnie de Pleuven, Financière V, Financière de Beg Meil, Financière d'Ouessant, Financière du Perguet, Financière de Pont-Aven, Imperial Mediterranean, Compagnie de Pont-l'Abbé, Financière de Quimperlé, Compagnie de Concarneau, Compagnie de l'Argol, Financière de Kerdevot, and Financière d'Iroise
- Manager of Socarfi and Compagnie de Malestroit
- Director of Bolloré*, Bolloré Participations, Compagnie des Tramways de Rouen, Financière V, Financière Moncey**, Omnium Bolloré, Société Industrielle et Financière de l'Artois**, Financière de l'Odet** and Société des Chemins de Fer et Tramways du Var et du Gard
- Permanent representative of Bolloré on the Board of Directors of Socotab
- Member of the Supervisory Board of Sofibol and Compagnie du Cambodge**

Other offices and positions

- Member of the Supervisory Board of Vallourec*
- Member of the Management Board of Vivendi*
- Permanent representative of Compagnie du Cambodge on the Supervisory Board of Banque Hottinguer (formerly Banque Jean-Philippe Hottinguer & Cie)

Offices and positions held in foreign companies

Offices and positions held at the Bolloré Group

- Chairman of Redlands Farm Holding
- Chairman of the Board of Directors of Plantations des Terres Rouges, PTR Finances, and SFA
- Director of African Investment Company, Financière du Champ de Mars, La Forestière Équatoriale**, BB Group, PTR Finances, Plantations des Terres Rouges, SFA, Sorebol, Technifin, and Paragefi Helios Iberica Luxembourg
- Permanent representative of Pargefi Helios Iberica Luxembourg SA on the Board of Participaciones y gestion financiera SA
- Permanent representative of Bolloré Participations on the Board of Nord Sumatra Investissements

Other offices and positions

- Permanent representative of Bolloré Participations on the Boards of Socfinasia**, Socfinde, Terrasia, Socfin (formerly Socfinal)**, Induservices SA

Positions expired within the last five years

- Director of Musée national de la Marine (until 2018)
- Chairman of Blueboat (formerly Compagnie de Bénodet) [(a)] and Financière de Sainte-Marine [(a)] (until 2018)
- Chairman of the Management Board of Compagnie du Cambodge [(a)] (until 2017)
- Chairman of the Compagnie de Cornouaille [(a)] (until 2017)
- Chairman of Financière de l'Argoat [(a)] (until 2017)
- CEO of Financière de l'Odet [(a)] (until 2017)
- Permanent representative of Bolloré on the Board of Directors of Havas [(a)] (until 2017)
- Chairman of Financière de Briec [(a)] (until 2016)
- Chairman of Financière de Pluguffan [(a)] (until 2016)
- Chairman of Bluestorage (until 2015)
- Chairman of Financière de Bréhat [(a)] (until 2014)
- Chairman of Bluely (formerly Financière de Kerdevot)
- Permanent representative of Bolloré Participations on the Board of Société Bordelaise Africaine (until 2016)
- Permanent representative of Bolloré Participations on the Boards of Immobilière de la Pépinière and Centrages (until 2015)
- Permanent representative of Bolloré Participations on the Board of Agro Products Investments Company (until 2015)
- Permanent representative of SAFA on the Board of SAFA Cameroun (until 2014) [(a)]
- Permanent representative of Bolloré Participations on the Board of Socfinco (until 2014)
- Permanent representative of Financière V on the Board of Société Anonyme Forestière et Agricole (SAFA) ([(a)] (until 2014)
- Permanent representative of Bolloré on the Supervisory Board of Vallourec (until 2014)

(a) Position held within the Bolloré Group.
** Listed company (for positions currently held).*
*** Listed company for positions currently held (including companies registered in the Free Market and listed abroad).*

Ms. Corinne de BILBAO

Born on 16 October 1966 (52 years old) - French nationality

Member of the Supervisory Board

First appointment: 21 March 2019
End of term: 2020 OSM
Vallourec shares held: 500

Summary of main areas of expertise and experience

- Graduate of Sciences Po Bordeaux and holder of an MBA in Sourcing and Supply Chain Management from the M.A.I Institute of Purchasing Management
- Vice-President of sales of the Subsea Division of General Electric Oil & Gas
- Vice-President of AmCham, the American Chamber of Commerce in France

Main activities performed outside the company

- Chairman and CEO of General Electric (GE) France

Positions held by Ms. Corinne de BILBAO

- Member of the Supervisory Board of Vallourec*
- Chairman of General Electric (GE) France
- Chairman of General Electric (GE) Industrial France
- Member of the Supervisory Board of Segula Technologies

* *Listed company (for positions currently held).*

Bpifrance Participations

Member of the Supervisory Board
Member of the Finance and Audit Committee
Member of the Strategy Committee

First appointment: 6 April 2016
End of term: 2020 OSM
Vallourec shares held: 66,695,708

Bpifrance offers companies continuity of financing at each key step in their development and an offer adapted to regional specificities. As part of the Bpifrance equity investment scheme, Bpifrance Participations invests in large companies as well as in middle-market companies, in order to support their development in France and internationally. Bpifrance Participations is a minority shareholder involved in governance, as well as a long-term investor capable of adapting to the company's development cycles.

Positions held by Bpifrance Participations

Positions currently held

- Member of the Supervisory Board of Vallourec*
- Director of Aelis Farma
- Director of Avril Pôle Végétal
- Director of Compagnie Daher
- Director of Corwave
- Member of the Supervisory Board of Crystal
- Director of Cybelangel International
- Member of the Supervisory Board of De Dietrich
- Director of Ekinops*
- Director of Eos Imaging*
- Director of Eutelsat Communications*
- Director of Farinia
- Director of FT1 CI
- Director of Gensight Biologics*
- Member of the Supervisory Board of Groupe Grimaud La Corbière
- Director of H4D
- Director of Horizon Parent Holdings
- Director of In Situ Training
- Director of Innate Pharma*
- Director of Isorg
- Director of Mader
- Member of the Supervisory Board of Mersen*
- Member of the Supervisory Board of NGE
- Director of NTL Holding
- Director of Orange*
- Director of Paprec
- Director of Parrot*
- Director of Pixium Vision*
- Director of Prodways Group*
- Director of PSA*
- Director of Scality
- Director of Soitec*
- Director of Technicolor*
- Director of Tinubu Square
- Director of Tokheim Luxco
- Director of Tokheim Luxco 2
- Member of the Supervisory Board of Valneva
- Member of the Supervisory Board of Voluntis
- Member of the Supervisory Board of Younited

Positions expired within the last five years

- Director of Antalis International (until 2018)
- Director of Cegedim (until 2018)
- Director of CGG (until 2018)
- Member of the Supervisory Board of Financière du Millenium (until 2018)
- Director of G2 Mobility (until 2018)
- Member of the Supervisory Board of Novasep (until 2018)
- Director of Sequana (until 2018)
- Director of Txcell (until 2018)
- Director of Altia Industry (until 2017)
- Director of Biom'up (until 2017)
- Member of the Supervisory Board of FT1 CI (until 2017)
- Director of Groupe Limagrain (until 2017)
- Director of Medipôle Partenaires (until 2017)
- Member of the Supervisory Board of Vergnet (until 2017)
- Director of Viadeo (until 2017)
- Member of the Supervisory Board of VIT (until 2017)
- Director of CHM International (until 2016)
- Member of the Supervisory Board of Inside Secure (until 2016)
- Director of Vexim (until 2015)

* *Listed company (for positions currently held).*

Mr. Alexandre OSSOLA

Born on 26 September 1974 (44 years old) – French nationality

Permanent representative of Bpifrance Participations

First appointment: 8 November 2016
End of term: 2020 OSM

Summary of main areas of expertise and experience

- Twenty-one years experience in capital investment and mergers-acquisitions
- Started his career in London at Wasserstein Perella (1998) then at Crédit Suisse First Boston
- CVC Capital Partners (2000-2011); Director at the Paris office
- Head of capital risk operations at CDC Climat (2011-2013)
- Director of nuclear and rail funds (2013-2015), manager of Fonds d'Avenir Automobile and a member of the Mid & Large Cap Management Committee of Bpifrance Participations (2015-2017), manager of MidCap activity of Fonds d'Avenir Automobile and member of the Mid & Large Cap Management Committee of Bpifrance Participations (since 2017)

Main activities performed outside of the Company

- Member of the Management Committee for Mid & Large Cap of Bpifrance
- Manager of MidCap activity of Bpifrance and Fonds d'Avenir Automobile, managed by Bpifrance

Positions held by Mr. Alexandre OSSOLA

Positions currently held

- Permanent representative of Bpifrance Participations, Member of the Supervisory Board of Vallourec*
- Member of the Mid & Large Cap Management Committee for Bpifrance Participations and Manager of Mid Cap activity of Bpifrance and Fonds Avenir Automobile, managed by Bpifrance
- Non-voting Board member (*censeur*) of the Supervisory Board of Peugeot SA*
- Permanent representative of Bpifrance Investissement, member of the Supervisory Committee of Novares Group SAS (formerly Financière Mecaplast SAS)
- Permanent representative of Bpifrance Investissement, member of the Board of Directors of Trèves SAS
- Permanent representative of Bpifrance Investissement, member of the Supervisory Board of Novarc SA

Positions expired within the last five years

- Permanent representative of Bpifrance Investissement, member of the Supervisory Board of Financière Snop Dunois SA (until 2017)
- Member of the Board of Directors of Climpact (until 2017)
- Member of the Board of Directors of Mecaplast SAM (until 2016)
- Member of the Board of Directors of HPC (until 2014)

* *Listed company (for positions currently held).*

Ms. Laurence BROSETA

Born on 22 September 1968 (50 years old) – French nationality

Member of the Supervisory Board
Member of the Appointments, Compensation and Governance Committee
Chairman of the Corporate Social Responsibility Committee

First appointment: 6 April 2016
Renewal: 2018 OSM
End of term: 2022 OSM
Vallourec shares held: 1,436

Summary of main areas of expertise and experience

- Graduate of École Polytechnique, Telecom Paris and Auditor at Institut des Hautes Études de l'Entreprise (IHEE)
- Head of Transport Operations for RATP (1994-1999)
- Lead Engineer for Control & Communication at SYSTRA (joint venture between RATP and SNCF) in London (1999-2001)
- Director of the "Point du Jour" Bus Center (2002-2005)
- Chairman of Bombela, a subsidiary of RATP Dev in Johannesburg, South Africa (2005-2007)
- Director of the International Business Unit and Vice Chairman in charge of international strategy for RATP Dev (2008-2012)
- CEO of Fives Stein (2012-2013)
- CEO France of Transdev (2013-2016), International Director of Transdev (2016- March 2019)

Main activities performed outside of the Company

- Director of companies

Positions held by Ms. Laurence BROSETA

Positions currently held

- Member of the Supervisory Board of Vallourec*
- Director of Thales*

Positions expired within the last five years

- International Director, member of the Executive Committee of Transdev (passenger transportation activity in 20 countries) and Director of RATP Dev Asia and of subsidiaries of the Transdev group (until March 2019)
- Director and Vice-President of Union des Transports Publics (until 2016)
- Director of Thello (until 2016)

Ms. Pascale CHARGRASSE

Born on 10 July 1960 (59 years old) – French nationality

Member of the Supervisory Board representing the employee shareholders
Member of the Appointments, Compensation and Governance Committee

First appointment: 13 December 2010
Renewal: 2015 OSM
End of term: 2019 OSM
Vallourec shares held: 8,327

Summary of main areas of expertise and experience

- Graduate of the Orsay Technology Institute with a DUT diploma in Computer Science
- Employee of the Vallourec Group since 1985 and currently Business Development Manager at Valinox Nucléaire, a wholly owned subsidiary of Vallourec
- Member of the Supervisory Board of Vallourec Actions Corporate Mutual Fund (FCPE)
- Union representative on the Group Committee

Main activities performed outside of the Company

None

Positions held by Ms. Pascale CHARGRASSE

Positions currently held

- Member of the Supervisory Board of Vallourec*

Positions expired within the last five years

None

* *Listed company (for positions currently held).*

Mr. Mickaël DOLOU

Born on 1 November 1975 (43 years old) – French nationality

Member of the Supervisory Board representing employees
Member of the Appointments, Compensation and Governance Committee

First appointment: 3 October 2017
End of term: 2021 OSM
Vallourec shares held: 745

Summary of main areas of expertise and experience

- Holder of an executive MBA from HEC Paris and a Master's in Law (international affairs)
- Thirteen years at the Serimax Group: Legal Director, and then Regional Director for the South American region, Director of Contractual Offers and Operations and Director in charge of marketing, commercial development and contractual offers

Main activities performed outside of the Company

None

Positions held by Mr. Mickaël DOLOU

Positions currently held	Positions expired within the last five years
• Member of the Supervisory Board of Vallourec*	None

Mr. Yuki IRIYAMA

Born on 19 November 1947 (71 years old) – Japanese nationality

Member of the Supervisory Board

First appointment: 12 May 2017
End of term: 2021 OSM
Vallourec shares held: 500

Summary of main areas of expertise and experience

- Graduate of the University of Tokyo (Faculty of Law, 1970) and of the College of Europe (Bruges) in Belgium (Advanced European Study in Law, 1977)
- Forty-five years at Nippon Steel Corporation (NSC, formerly NSSMC), assuming the following operational and managerial positions: Member of the Legal Department (1970-1990), Manager of the Electronics & Information Business Division (1990-1993), General Manager of the Semi-conductor Business Division (1993-1998), General Manager of the Overseas Business Development Division (1999-2002), Director, Member of the Board (2002-2006), Managing Executive Officer (2006-2009), and Executive Advisor (2009-2015)
- Attorney-at-law in Japan since March 2015

Main activities performed outside of the Company

- Of Counsel at the Kajitani Law Offices in Tokyo

Positions held by Mr. Yuki IRIYAMA

Positions currently held	Positions expired within the last five years
• Member of the Supervisory Board of Vallourec* • Statutory Auditor at UACJ (United Aluminum Corporation of Japan)	None

* *Listed company (for positions currently held).*

Mr. Jean-Jacques MORIN

Born on 29 December 1960 (58 years old) – French nationality

Member of the Supervisory Board
Chairman of the Finance and Audit Committee

First appointment: 25 May 2018
End of term: 2022 OSM
Vallourec shares held: 500

Summary of main areas of expertise and experience

- Engineer, graduate of the *École nationale supérieure de l'aéronautique et de l'espace*, DSCG *(Diplôme Supérieur de Comptabilité et Gestion)* – Advanced Diploma in Accounting and Management – and holder of an MBA from Thunderbird School, Arizona State University
- He began his career in Management Consulting and Auditing at the Deloitte offices in France and Canada, where he worked for 13 years in the field of semiconductors, notably at Motorola in France, Switzerland, Germany and the United States
- Sector CFO of Power Service and Transport at Alstom, and later CFO of the Alstom Group (2005-2015)
- In 2015, he joined AccorHotels*, where he was CFO, then Deputy CEO in charge of finance, communications, and strategy (since 2018)

Main activities performed outside of the Company

- Deputy CEO in charge of finance, communications, and strategy at AccorHotels*

Positions held by Mr. Jean-Jacques MORIN

Positions currently held

- Member of the Supervisory Board of Vallourec*
- Member of the Board of Directors of SHPH
- Member of the Supervisory Board and member of the Audit Committee of Orbis*
- Member of the Board of Directors and member of the Audit Committee of Accor Invest
- Chairman of IBL
- Manager of Sodetis

Positions expired within the last five years

- Member of the Board of Directors of AAPC India Hotel Management Private Ltd

Ms. Alexandra SCHAAPVELD

Born on 5 September 1958 (60 years old) – Dutch nationality

Member of the Supervisory Board
Member of the Finance and Audit Committee
Member of the Appointments, Compensation and Governance Committee

First appointment: 31 May 2010
Renewal: 2014 OSM, 2018 OSM
End of term: 2022 OSM
Vallourec shares held: 12,272

Summary of main areas of expertise and experience

- Graduate of the University of Oxford with a degree in Philosophy, Politics and Economics and of Erasmus University Rotterdam with a Master's in Economics of Development
- Twenty five years' experience with the ABN AMRO Group (Netherlands):
  - Head of Sector Expertise for the ABN AMRO Group (2001-2004)
  - Director of Investment Banking Division of the ABN AMRO Group (2004-2007)
  - Director for Europe of Royal Bank of Scotland (2007-2008)

Main activities performed outside of the Company

- Director of companies

Positions held by Ms. Alexandra SCHAAPVELD

Positions currently held

- Member of the Supervisory Board of Vallourec*
- Director of Société Générale*
- Member of the Supervisory Board of Bumi Armada Berhad* (Malaysia)
- Member of the Supervisory Board of FMO (Netherlands)

Positions expired within the last five years

- Member of the Supervisory Board of Holland Casino (until 2016)

* *Listed company (for positions currently held).*

OFFICES OF MEMBERS OF THE SUPERVISORY BOARD WHICH ENDED IN 2018

Mr. José Carlos GRUBISICH

Born on 19 February 1957 (62 years old) – Brazilian nationality

First appointment: 31 May 2012
Renewal: 2016 OSM
End of term: 30 November 2018 (resigned)

Summary of main areas of expertise and experience

- Graduate of the Advanced Management Program of the Fundação Dom Cabral and of INSEAD
- CEO of Rhodia for Brazil and Latin America (1996)
- Chairman & CEO of Rhône-Poulenc Group for Brazil (1997)
- Vice-Chairman and member of the Executive Board of Rhodia Group Worldwide and Chairman of Rhodia Fine Organics Worldwide (1999)
- Chairman & CEO of Brazilian company Braskem S.A. (petrochemicals) (2002)
- Chairman of Eldorado Brasil Celulose S.A. (2002-2017)

Main activities performed outside of the Company

- Director of companies

Positions held by Mr. José Carlos GRUBISICH

Positions expired within the last five years

- Member of the Supervisory Board of Vallourec (until November 2018)
- Chairman of Eldorado Brasil Celulose S.A. (until 2017)
- Director of Halliburton

Mr. Henri POUPART-LAFARGE

Born on 10 April 1969 (49 years old) – French nationality

First appointment: 28 May 2014
End of term: 2018 OSM

Summary of main areas of expertise and experience

- Graduate of *École Polytechnique* (1988), *École nationale des ponts et chaussées* and the Massachusetts Institute of Technology
- Deputy in the Treasury Department of the Ministry of Economy and Finance, and later a Technical Adviser in the office of the Minister of Economy and Finance (1994-1997)
- Since 1998, in the Alstom Group*: Head of Investor Relations (1998-1999), Head of Management Control (1999-2000), Senior Vice-President in charge of Finance for the Transmission and Distribution sector (2000-2004), Group CFO (2004-2010), President of the Alstom Grid sector (2010-2011), Group Executive Vice-Chairman and Chairman of the Transportation sector and Chairman and Chief Executive Officer of Alstom (since 2016)

Main activities performed outside of the Company

- Chairman & CEO of Alstom

Positions held by Mr. Henri POUPART-LAFARGE

Positions currently held

- Chairman and CEO and Director of Alstom*
- Director of Transmashholding (TMH)

Positions expired within the last five years

- Member of the Supervisory Board of Vallourec* (until May 2018)

* *Listed company (for positions currently held).*

HONORARY CHAIRMEN

Mr. Jean-Paul PARAYRE

French nationality

Honorary Chairman of Vallourec since 31 May 2013

Expertise and managerial experience

- Graduate of *École Polytechnique*
- Chairman of the Management Board of PSA Peugeot-Citroën (1977-1984)
- CEO then Chairman of the Management Board of Dumez (1984-1990)
- Vice-President and CEO of Lyonnaise des Eaux Dumez (1990-1992)
- Vice-President and CEO of Bolloré (1994-1999)
- Chairman and CEO of Saga (1996-1999)
- Chairman of the Supervisory Board of Vallourec (2000-2013)

Mr. Arnaud LEENHARDT

French nationality

Honorary Chairman of Vallourec since 15 June 2000

Expertise and managerial experience

- Graduate of *École Polytechnique*
- Forty three years with the Vallourec Group, mainly in Plant and General Management
- Chairman and CEO of Vallourec (1981-1994)
- Chairman of the Supervisory Board of Vallourec (1994-2000)
- Non-voting Board member (censeur) of the Supervisory Board of Vallourec (2006-2010)

7.1.2 Operation of the Management and Supervisory Boards

7.1.2.1. Duties, responsibilities and structure of the Management Board

The Management Board is in charge of the Company's management and of running its activities. The Management Board has, with regard to third parties, the broadest powers to act under all circumstances in the name of the Company, within the limit of the corporate purpose, and subject to the powers expressly provided by law to the Supervisory Board and Shareholders' Meetings, and those which require the prior authorization of the Supervisory Board, in application of the bylaws and, where applicable, internal regulations (see paragraph 7.1.2.2 below). It meets once a week.

In compliance with the bylaws, the Management Board is comprised of a minimum of two and a maximum of five members who are appointed for a four-year term and, as the case may be, reappointed by the Supervisory Board. As at 28 February 2019, the Management Board was comprised of two members (see paragraph 7.1.1.1 above).

The members of the Management Board may be dismissed by the Supervisory Board or the Shareholders' Meeting.

The Management Board has adopted internal regulations, available on the Company's website, which consist of an internal document intended to organize its operation and relations with the Supervisory Board. It is not enforceable against third parties.

7.1.2.2. Duties, responsibilities and structure of the Supervisory Board

The Supervisory Board is the Company's control body, management being performed by the Management Board. The Supervisory Board ensures that the strategy applied by the Management Board is suited to the guidelines it has approved.

To that end, the role of the Supervisory Board is twofold:

- to provide ongoing control of the Company's management through the Management Board, by performing the checks and controls it deems appropriate;
- to provide periodic control of the Company's management: once per quarter for the activities report which the Management Board presents to it, and within three months of the close of each fiscal year, at the time of the Management Board's presentation of the annual financial statements, consolidated financial statements and management report intended for the Shareholders' Meeting, as well as during the presentation of the interim financial statements.

In addition to the legal obligations of prior authorizations (sureties, securities and guarantees, the Supervisory Board gives its authorization prior to the Management Board carrying out the following actions:

- completing any capital increases in cash or by capitalization of reserves authorized by a Shareholders' Meeting;
- completing any other issue of transferable securities that could later give access to the capital, authorized by a Shareholders' Meeting;

- proceeding with a buyback by the Company of its own shares;
- granting to executive management and/or Group employees options to subscribe for or purchase the Company's shares, granting shares free of charge or any other benefits of a similar nature under the terms of authorizations granted by the Shareholders' Meeting; and
- establishing any projected merger or partial transfer of assets, entering into or refusing any industrial or commercial agreement with other companies that could affect the Company's future and, more generally, completing any major transaction (such as external operations for the acquisition or disposal of significant investments in organic growth or internal restructuring operations) (i) that could materially alter the business scope or financial structure of the Group or the type of risks it incurs or (ii) which falls outside of the Group's declared strategy.

Where applicable, the prior authorization of the Supervisory Board is required for both Vallourec and the companies it controls under the terms of Article L.233-16 of the French Commercial Code (*Code de commerce*) (consolidation scope).

The Supervisory Board determines the composition of the Management Board, appoints its members and may remove them from office. It may likewise propose to the Shareholders' Meeting that their duties be terminated. Once a year, the Supervisory Board evaluates the performance of the Management Board and leads a discussion as to its future, within the context of its work on the succession plan (see paragraph 7.1.2.5 below).

The Supervisory Board sets the compensation of members of the Management Board as well as the number of share subscription or share purchase options and/or performance shares they are allocated, or any other benefit of a similar nature.

It determines the terms and conditions for receiving attendance fees, and their distribution among the Board members. It likewise determines the compensation of the Chairman and, where applicable, the Vice-Chairman, and the resources allocated to them for performing their duties.

The Chairman of the Supervisory Board sets the agenda for each Supervisory Board meeting, upon consulting with the Chairman of the Management Board.

Once per quarter, the Management Board presents a report to the Supervisory Board which describes as completely as possible the progress of the Group's affairs, as well as any useful information about its financial position, cash flow, commitments and liquidity.

The Management Board consults the Supervisory Board about the dividend to be proposed to the Shareholders' Meeting. At the end of the year, it submits the budget, forecast capital expenditure program and financing plan for the following year together with the strategy plan.

At its meetings, the Supervisory Board can ask the Management Board to supplement its information on particular matters with a presentation at the next meeting.

In the performance of its duties, the Supervisory Board is regularly informed, by the Management Board, through its Chairman, of any significant event concerning the Group's performance. It ensures that the latter keeps it informed of all matters that it deems useful and necessary in the exercise of its supervisory role. In order to ensure the process operates correctly, the Chairman of the Supervisory Board, at the initiative of any member of the Board, gathers this information. The specific information required by each of the Committees of the Supervisory Board for the performance of its duties is gathered by the Chairman of each Committee in collaboration with the Management Board.

In addition to the above provisions, information is provided to the Supervisory Board on an ongoing basis through a frequent, regular dialogue between the Chairman of the Supervisory Board and the Chairman of the Management Board.

As an exception to the above, if any member of the Supervisory Board finds himself or herself in a conflict of interest situation, even a potential one, concerning a subject to be debated by the Board, the Chairman of the Supervisory Board ensures, with the support of the Appointments, Compensation and Governance Committee, that information concerning this subject is not communicated to the member in question, without prejudice to the latter's obligations, as described below.

The Vallourec Supervisory Board has adopted, and regularly updates its internal regulations, which are designed to formalize its operating and organizational rules, and work methods. These regulations are strictly internal and are not intended to and do not replace the Company bylaws or the laws and regulations governing commercial companies. They may be amended or added to at any time as a result of a decision made by the Supervisory Board. They have been regularly revised to ensure that their terms are consistent with the new statutory and regulatory provisions.

The Supervisory Board elects a Chairman and Vice-Chairman from among its members, for a maximum term corresponding to their term of office as a Supervisory Board member. The Chairman and Vice-Chairman may be reelected or removed, at any time, by the Supervisory Board. They are in particular responsible for convening the Board and directing its deliberations, it being specified that the powers of the Vice-Chairman are exercised if the Chairman is absent or at the Chairman's request, and under the same conditions. The Vice-Chairman alerts the Chairman to observations regarding compliance with the ethics obligations established by the Board's internal regulations.

The Supervisory Board may appoint from among its members (including the Vice-Chairman), a Lead Member for a term not to exceed that of his position as a member of the Supervisory Board. The person may be reappointed, and his/her duties as a Lead Member may be revoked at any time by the Supervisory Board. The Lead Member acts in a precautionary manner to raise awareness about conflicts of interest among the members of the Supervisory Board, and draws said Board's attention to any conflict of interest situation that has been identified, even a potential one. The member likewise is responsible for ensuring compliance with the internal regulations, and for making sure that the members of the Supervisory Board are able to perform their task under optimum conditions, and are provided with a high level of upstream information at the Supervisory Board meetings. The Lead Member assists the Chairman of the Supervisory Board, at the latter's request, in responding to shareholders' requests, and makes himself or herself available to meet with them and note their comments and suggestions, when requested and with the consent of the Supervisory Board Chairman. The member makes an annual report to the Supervisory Board on the performance of his/her assignment, in a formal assessment of the operation of the Supervisory Board.

Under the terms of its ethics obligations, each member of the Supervisory Board is required:

- before accepting office, to acknowledge the general and specific obligations for which he/she is responsible, and in particular the legal or regulatory texts, the recommendations of the AFEP-MEDEF Code and any supplements the Board may have added, along with the Board's internal operating rules;
- to participate, unless specifically prevented, in Board meetings and, where applicable, the meetings of the Committees to which he/she belongs, as well as in the Shareholders' Meetings;
- to request information. To that end, he/she must request, within the appropriate time frames, the information required for him/her to actively participate in the subjects on the Board's agenda and, if applicable, the agenda of the Committee(s) to which he/she belongs;
- to comply with the legal and regulatory obligations arising from his/her position and, in particular, to comply with the law and the recommendations of the AFEP-MEDEF Code relating to the plurality of offices;

- to behave as a representative of all the shareholders and act in the Company's interest at all times;
- to inform the Supervisory Board of any conflict of interest situation, even a potential one, and to refrain from voting on any issue examined by the Board that would result in a conflict of interest;
- to personally be a shareholder of the Company throughout the entire term of their office, under the conditions set by the bylaws and internal regulations of the Board, with a minimum of 500 Vallourec shares (1) ;
- with regard to the confidential information obtained in the course of his/her duties, to consider himself/herself as a person who exercises directorship responsibilities and has access to privileged information and, as such, in particular, to respect the provisions laid down by the Company concerning the periods during which persons with access to privileged information may not buy, sell or take positions in the Company's shares or in any other financial instrument linked to the Vallourec share (options, warrants, etc.), i.e. the thirty (30) calendar days preceding the releases of annual and semiannual results, and fifteen (15) calendar days preceding first quarter and third quarter results, as well as the day of publication and the following day, without prejudice to the current statutory and regulatory provisions on "insider trading;"
- to consider himself/herself bound by true professional privilege with regard to all non-public information, regardless of the material (written or verbal) that is collected within the context of his/her duties, during a meeting of the Board or of a Committee (in particular the files of the Board and Committees, discussions, debates and deliberations of the Board and Committees), or between two meetings (ongoing information), and to take all useful measures to preserve confidentiality, in particular by refraining from communicating this information to a third party when it has not been made public;
- to disclose, under the conditions established by statutory and regulatory provisions, to the French securities regulator (*Autorité des Marchés Financiers*) and the Company, the transactions carried out with the financial instruments issued by the Company;
- to comply with the "Code of best practice on securities transactions in Vallourec shares and on the insider trading operation"; and
- to comply with the ethical rules of Article 19 of the AFEP-MEDEF Corporate Governance Code.

Once a year, an item on the Supervisory Board's agenda is dedicated to the formal assessment of the operation of the Supervisory Board; the corresponding findings for fiscal year 2018 are presented in Section 7.1.2.5 of this Chapter.

When first appointed, the members of the Supervisory Board receive a guide containing all the documents concerning the Group's governance (the bylaws, the internal regulations, the AFEP-MEDEF Corporate Governance Code, the Code of Best Practices, etc.) and the Group's activities. At the request of members, visits are arranged to plants in France and abroad.

The members also have the opportunity, if they so wish, to learn about specific aspects concerning the Group, its businesses, sector of activity and organization. At the request of members, the Group may also organize internal and external training sessions specific to their role as a member of the Supervisory Board. Internal training is provided by the Group's Legal Director based on the Group's corporate and stock exchange documentation and any particular questions raised by the member before the training meeting. It is supplemented by external training provided by an independent organization specializing in training for Company Directors.

The members of the Supervisory Board are able to meet with the primary senior executives of the Group, including without members of the Management Board being present. In the latter case, said members must have been informed first. In order to ensure the process operates correctly, requests by any member for a meeting with the primary senior executives of the Group are made to the Chairman of the Supervisory Board.

7.1.2.3 Structure of the Supervisory Board Committees

Each Committee has internal regulations, available on the Company's website, which aim to specify the role, composition, and rules of operation of the Committee. These regulations are strictly internal and are not intended to and do not replace the Company bylaws or the laws and regulations governing commercial companies.

For each meeting, a preparatory set of papers is sent out several days in advance. At the meeting, each presentation is made, where applicable, in the presence of one or more members of the Management Board, by the specialist senior executive for the issue concerned and followed by discussion. A report of the meetings is prepared for the members of the Supervisory Board.

To fulfill their role, the Committees may conduct, or arrange to have conducted, any analysis, using external experts if required, which will be charged to the Supervisory Board's operating budget. They may invite any external persons of their choice to their meetings. In the event that outside consulting services are used, the Committee must ensure that the advice in question is independent, objective and competent.

Each year, the Committee evaluates its activities and reports on them to the Supervisory Board.

7.1.2.4 Independence of the members of the Supervisory Board

The annual review of the independence of the members of the Supervisory Board was conducted by the Supervisory Board on 19 February 2019, at the recommendation of the Appointments, Compensation and Governance Committee. The Supervisory Board reviewed Corinne de Bilbao's independent status when she was coopted on 21 March 2019. The Supervisory Board considered all of the criteria of the AFEP-MEDEF Code, which was revised in June 2018, to evaluate the independence of its members, namely:

- **Criterion 1: employee corporate officer during the previous five years**

  not being an employee or executive corporate officer of the Company, nor an employee, executive corporate officer or Director of a company consolidated with it, and not having been in such a position for the preceding five years;
- **Criterion 2: cross-directorships**

  not being an executive corporate officer in a company in which the Company directly or indirectly holds a directorship or in which an employee, appointed as such, or an executive corporate officer of the Company (currently or who was in such a position less than five years ago) holds a directorship;

(1) *Starting on the day of their appointment, members of the Supervisory Board must hold at least 50 Vallourec shares. The 450 additional shares must be acquired by 31 December of the year following the year they take office, in order to allow them to use their attendance fees to acquire them. These provisions do not apply to members representing employees (whether or not they are shareholders).*

- **Criterion 3: significant business relationships**

  not being a customer, supplier, investment banker, lending banker (or being directly or indirectly linked to these people):

  - of the Company or its Group, or
  - for which the Company or its Group represents a significant portion of activity;

- **Criterion 4: family connection**

  not having a close family connection with a corporate officer;

- **Criterion 5: Statutory Auditor**

  not having been Statutory Auditors of the Company during the last five years;

- **Criterion 6: term of office of more than twelve years**

  not being a member of the Company's Board for more than twelve years, noting that Independent Director status is lost after twelve years;

- **Criterion 7: Non-executive corporate officer status**

  a non-executive corporate officer cannot be considered independent if they receive variable compensation in cash, shares, or any other compensation related to the Company's or the Group's performance;

- **Criterion 8: major shareholder status**

  the members representing major shareholders of the Company or of the parent company can be considered independent from the moment these shareholders do not have control over the Company. However, beyond a threshold of 10% of capital or of voting rights, the Board, on the report of the Appointments, Compensation and Governance Committee, systematically questions qualification as an independent member, taking into account the composition of the Company's capital and the existence of potential conflicts of interest.

The Supervisory Board noted that Bpifrance Participations, which held 14.56% of the Company's capital and 15.66% of its theoretical voting rights as at 31 December 2018, is not an independent member of the Supervisory Board.

The Supervisory Board also considered that Mr. Yuki Iriyama, appointed by the Shareholders' Meeting of 12 May 2017, at the proposal of Nippon Steel Corporation (NSC, formerly NSSMC), a strategic partner and major shareholder who, as at 31 December 2018, held 14.56% of the capital and 14.60% of the theoretical voting rights of the Company, in accordance with the terms of a shareholders' agreement, is not an independent member of the Supervisory Board, despite specific measures to prevent access to competitive information and the fact that Mr. Yuki Iriyama sits on the Board in a personal capacity.

The Supervisory Board has debated whether or not to assess the relationship maintained by Board members with Vallourec or its Group, along with the potential conflicts of interest this could generate, as being significant. Within this framework it has conducted a more specific in-depth examination of the following members, upon which it issued the findings below:

- Ms. Pascale Chargrasse, who represents employee shareholders on Vallourec's Supervisory Board, has been an employee of the Group since 1985 and should thus be considered a non-independent member in application of the criteria of the AFEP-MEDEF Code. The Supervisory Board nevertheless noted that the AFEP-MEDEF Code excluded employee shareholders from the analysis of independent members, and thus did not recognize Ms. Pascale Chargrasse when determining the proportion of independent members;
- Mr. Mickaël Dolou, who represents employees on Vallourec's Supervisory Board, has been an employee of the Vallourec Group since 2006 and should thus be considered a non-independent member in application of the criteria of the AFEP-MEDEF Code. The Supervisory Board nevertheless noted that the AFEP-MEDEF Code excluded the member representing employees from the analysis of independent members, and thus did not recognize Mr. Mickaël Dolou when determining the proportion of independent members;
- Ms. Alexandra Schaapveld is Director of Société Générale, a banking institution of the Vallourec Group. The Supervisory Board noted that this business relationship predates the appointment of Alexandra Schaapveld as Director of Société Générale and as a member of Vallourec's Supervisory Board; as a non-executive and independent Director of Société Générale, Ms. Alexandra Schaapveld does not participate in any way in the organization of the business relationship between Vallourec and Société Générale, nor does she personally benefit from it, and the bank overdrafts of Société Générale for the Vallourec Group in 2018 were insignificant both in their amount (less than 0.1% of the Group's gross debt) and from the perspective of the other outside financing of the Vallourec Group. These elements, both in terms of quality and quantity, allowed the Supervisory Board to confirm Alexandra Schaapveld's independence;
- Ms. Vivienne Cox is Chairman of the Supervisory Board. The balance of dual corporate governance in which the Supervisory Board has a role, and which is essentially based on controlling the action of the Management Board, and governed by a principle of non-interference in management, in principle avoids all risk of a conflict of interest, unless one of the other criteria for evaluating independence applies. In its recommendation of 11 December 2014, the French securities regulator (*Autorité des Marchés Financiers*), nevertheless wanted to transpose to Chairmen of Supervisory Boards the requirements for Chairmen of Boards of Directors in terms of independence and, to that end, asked that the independence of a Chairman of a Supervisory Board be justified in detail. In this context, the Supervisory Board confirmed Vivienne Cox's independence for the following reasons:
  - Ms. Vivienne Cox joined Vallourec's Supervisory Board in 2010, after having spent her entire career outside of the Group,
  - Ms. Vivienne Cox was never an employee of Vallourec, nor an executive corporate officer of the Group,
  - the companies in which Ms. Vivienne Cox holds a position as a corporate officer have no business relationships with the Vallourec Group, and
  - Ms. Vivienne Cox collects fixed compensation, excluding any variable compensation in cash, shares, or any other compensation related to the Company's or the Group's performance, which could impact the objectivity of her judgment.

The business relationships maintained between (i) the companies (excluding the Group) in which the other members of the Supervisory Board hold offices, on the one hand, and (ii) the Group, on the other, were reviewed but deemed insignificant both in quantitative terms with regard to their amount, which was less than 1% of the Group's revenue, and in qualitative terms assesses with particular regard to the continuity, importance, and the organization of the relationship.

Based on these findings, it appears, at the date of this Registration Document, that all Board members, with the exception of Bpifrance Participations and Mr. Yuki Iriyama, must be considered to have no interest *vis-à-vis* the Company and that consequently, the proportion of independent members of the Supervisory Board stands at 82%, in application of the AFEP-MEDEF Code.

In compliance with the recommendations of the French securities regulator *(Autorité des Marchés Financiers)*, the table below presents the position of each of the members of the Supervisory Board, at the date of this Registration Document, with regard to the criteria of independence examined by the Supervisory Board and its Appointments, Compensation and Governance Committee:

Criteria (1)	1: Employee corporate officer during the previous five years	2: Cross-directorships	3: Significant business relationships	4: Family connection	5: Statutory Auditor	6: Term of office of more than 12 years	7: Non-executive corporate officer status	8: Major shareholder status
Vivienne Cox	◇	◇	◇	◇	◇	◇	◇	◇
Pierre Pringuet	◇	◇	◇	◇	◇	◇	◇	◇
Maria-Pilar Albiac-Murillo	◇	◇	◇	◇	◇	◇	◇	◇
Philippe Altuzarra	◇	◇	◇	◇	◇	◇	◇	◇
Cédric de Bailliencourt	◇	◇	◇	◇	◇	◇	◇	◇
Corinne de Bilbao	◇	◇	◇	◇	◇	◇	◇	◇
Bpifrance Participations represented by A. Ossola	◇	◇	◇	◇	◇	◇	◇	◆
Laurence Broseta	◇	◇	◇	◇	◇	◇	◇	◇
Pascale Chargrasse	◆	◇	◇	◇	◇	◇	◇	◇
Mickaël Dolou	◆	◇	◇	◇	◇	◇	◇	◇
Yuki Iriyama	◇	◇	◇	◇	◇	◇	◇	◆ (2)
Jean-Jacques Morin	◇	◇	◇	◇	◇	◇	◇	◇
Alexandra Schaapveld	◇	◇	◇	◇	◇	◇	◇	◇

(1) In this table, ◇ means that the independence criterion has been met and ◆ that it has not been met.

(2) Mr. Yuki Iriyama was appointed by the Shareholders' Meeting at the proposal of Nippon Steel Corporation (NSC, formerly NSSMC), a strategic partner and major shareholder, in compliance with the terms of a shareholder's agreement.

7.1.2.5 Conditions for preparation and organization of work of the Supervisory Board

13 members (1)

10 meetings

92.5% attendance rate

In order to best ensure that Board members are able to attend meetings, the schedule of meetings for the year is prepared approximately one year in advance.

The actual attendance rate of members at Supervisory Board meetings, calculated as a ratio of the number of members present to the total number of members, was 92.5% for all of the meetings held in 2018.

The members of the Management Board were present at all of the meetings. The Supervisory Board nevertheless makes sure that a portion of its meetings are held without the Management Board being present, in particular for items on the agenda that directly concern them.

Each meeting is confirmed on average one week in advance by sending a notice of meeting, which is enclosed with the agenda as well as a file containing, except in certain cases, all of the supporting documents relating to the subjects recorded in the Supervisory Board's agenda. This information is sent through a highly secure platform, which is only accessible to the members of the Board, using their individual personal identifiers. Where necessary, the Supervisory Board relies on preliminary work carried out by the Committees.

Meetings are chaired by the Supervisory Board Chairman, who ensures, in particular, that each member expresses his/her opinion on important matters. Any conflicts of interest are handled in conformity with the principles indicated in paragraph 7.1.5 of this Registration Document.

The Company's Statutory Auditors attended the Supervisory Board meetings at which the annual and interim financial statements were reviewed.

7.1.2.6 Activities of the Supervisory Board and Committees in 2018

ACTIVITIES OF THE SUPERVISORY BOARD

In 2018, the Board met ten times. The average length of its meetings was approximately four hours and thirty minutes.

As regards the conducting of business, the work of the Supervisory Board primarily concerned:

- an examination of the annual, semiannual and quarterly financial statements, and of the budget;
- an examination of quarterly business reviews of the Management Board;
- safety developments at the industrial sites;
- monitoring of strategic projects;
- developments in markets and competition;
- risk mapping;
- the system to prevent and detect corruption and influence peddling;
- the policy on financing and bond issues;

(1) The number of members on the Supervisory Board was 12 between 30 November 2018 and 21 March 2019.

- the Group's internal control and audit policy;
- Group guidelines on Corporate Social Responsibility, and the latest legal, regulatory and soft law developments, in order to better take social and environmental consequences of corporate activity into account;
- monitoring of the cultural change under way within the Group at the initiative of the Supervisory Board, which wanted that the Transformation Plan launched in 2016 had more international components, diversity, digital elements, and maneuverability to the decision-making process;
- the creation of Shared Service Centers;
- the organization and challenges of the Group Purchasing Department;
- the challenges and opportunities of Digital.
- the Ascoval takeover bid presented by Altifort.

In accordance with the areas of improvement identified in the 2016 Supervisory Board evaluation, members of the Executive Committee gained increased access to the Supervisory Board, presenting regional and subject-specific issues to it. The Supervisory Board therefore heard the Directors of the South America and North America Regions present the challenges and strategies of the regions for which they are responsible.

The Supervisory Board moreover traveled to the United States to visit the Youngstown site, to deepen its understanding of the North American market, the Group's activity and strategy in this region, and to meet the main local supervisors. A Supervisory Board meeting was held on site.

Regarding the Governance plan, the Supervisory Board worked on the following subjects in particular:

- the Management Board succession plan, particularly in case of an unforeseeable vacancy;
- the compensation policy for corporate officers;
- the compensation of members of the Management Board for 2017 and 2018, as well as the report on compensation for the purpose of implementing the Say on Pay mechanism;
- Vallourec's policy on enabling the personnel to share in the Group's net profits;
- policy on the composition of the Supervisory Board;
- the appointment of the secretary and deputy secretary of the Supervisory Board;
- the composition of the Supervisory Board and its Committees;
- Creation of a new Board Committee dedicated to CSR issues;
- the independence of the Board members;
- compliance of Group governance with the recommendations of the AFEP-MEDEF Code;
- the policy and action plans on professional equality and more balanced representation of women and men within the management bodies.

DUTIES, RESPONSIBILITIES AND ACTIVITIES OF THE CHAIRMAN OF THE SUPERVISORY BOARD

In addition to her legal duties, the Chairman is notably tasked with the following:

- speaking with members of the Management Board and Executive Committee about certain significant and strategic events for the Company, in particular when preparing for meetings of the Strategy Committee, which she chairs, and more generally when preparing for meetings of the Supervisory Board;
- participating in certain Board Committees;
- ensuring the Supervisory Board is balanced, by participating in the process of selecting new members and considering renewal of offices that are expiring;
- ensuring proper integration of new members within the Supervisory Board;
- ensuring proper completion of the annual operating evaluation of the Supervisory Board and individually relaying comments regarding each member's effective contribution to the work of the Board to the members concerned;
- ensuring implementation of the areas for improvement identified as part of the annual operating evaluation of the Supervisory Board.

In 2018, the Chairman's activity was specifically devoted to the following points:

- interviews with the Management Board on the implementation of the Transformation Plan;
- preparation, with the teams concerned, of Strategy Committee meetings dedicated to digital issues and the Group's innovation policy;
- participation, as a guest, at all meetings of the Finance and Audit Committee;
- participation in the process of selecting new members of the Supervisory Board and interviews with the new members as part of their integration process;
- interviews with Supervisory Board members whose term is expiring about their contributions;
- adjustment of the questionnaire used for the formal evaluation of the Supervisory Board's operation;
- interviews relating to the Management Board succession plan, particularly in case of an unforeseeable vacancy;
- monitoring of an action plan to implement the areas for improvement identified as part of the annual operating evaluation of the Supervisory Board;
- draft act related to business growth and transformation (Pacte);
- creation of a new Board Committee dedicated to CSR issues.

MANAGEMENT BOARD SUCCESSION PLAN

The Supervisory Board, assisted by the Appointments, Compensation and Governance Committee, helps prepare for the future by formulating and regularly reviewing the succession plan for members of the Management Board.

The process is primarily handled by the Chairman of the Supervisory Board, who works closely with the Appointments, Compensation and Governance Committee, with the help of an external specialized firm. The Chairman of the Management Board is personally involved with this process. The Supervisory Board is regularly informed of the progress of this work, without the Management Board being present, in an effort to ensure compliance with the Company's strategic issues.

The succession plan envisages several time periods: a short-term plan in case of unexpected vacancy; a medium-term plan anticipating the end of the officers' terms, and a long-term plan focused on the existing pool of potential candidates, in particular within the Executive Committee. Internal candidates who have been identified as having high potential benefit from specific training and assistance.

The people involved in this process strictly respect confidentiality.

ATTENDANCE OF THE MEMBERS OF THE SUPERVISORY BOARD IN 2018

Attendance	Supervisory Board	Finance and Audit Committee	Appointments, Compensation and Governance Committee	Strategy Committee
Vivienne Cox (Chairman of the Supervisory Board)	100% (10/10)	–	–	100% (3/3)
Pierre Pringuet (Lead Member and Vice-Chairman of the Supervisory Board)	100% (10/10)	–	100% (6/6)	–
Maria-Pilar Albiac-Murillo	100% (10/10)	–	–	–
Philippe Altuzarra	100% (10/10)	–	–	100% (3/3)
Cédric de Bailliencourt	90% (9/10)	–	–	–
Bpifrance Participations, represented by Alexandre Ossola	100% (10/10)	100% (6/6)	–	100% (3/3)
Laurence Broseta	80% (8/10)	–	83% (5/6)	–
Pascale Chargrasse	100% (10/10)	–	100% (6/6)	–
Mickaël Dolou	100% (10/10)	–	100% (6/6)	–
José Carlos Grubisich	100% (8/8)	–	–	100% (3/3)
Yuki Iriyama	100% (10/10)	–	–	–
Jean-Jacques Morin	100% (6/6)	100% (4/4)	–	–
Henri Poupart-Lafarge	25% (1/4)	100% (2/2)	–	–
Alexandra Schaapveld	100% (10/10)	100% (6/6)	83% (5/6)	–
AVERAGE ATTENDANCE RATE	**92.5%**	**100%**	**93%**	**100%**

EVALUATION OF THE SUPERVISORY BOARD

As it does each year, the Supervisory Board conducted a formal evaluation of its operations for fiscal year 2018. The evaluation was managed by the Supervisory Board's Secretary's Office, under the supervision of the Appointments, Compensation and Governance Committee, based on a questionnaire. For 2018, at the initiative of the Chairman, the content of this questionnaire changed to further target topics specific to the Group. The Chairman provided the individual results of questions relating to each member's effective contribution to the Board's work to each of the Board members concerned.

The summary of the Supervisory Board members' responses, which was communicated to the Board members and discussed during the 19 February 2019 meeting, indicates high member satisfaction with the Supervisory Board's operation, both in terms of the composition of the Board (age, nationality, diversity of skills, cultures and experiences), and with regard to the actual contribution of the members, as well as the pertinence of proposals to renew a term, quality, transparency and ease of discussions within the Board and with the Management Board. The Board members shared their satisfaction about the topics addressed and examined at the meeting, reflecting the current realities, challenges and major issues of the Company. The Board was also satisfied with the consideration of areas of improvement identified during the previous self-evaluation, notably as concerns the quality of presentations and the balanced way in which they are conducted, allowing for longer discussions. For the future, the following areas of improvement were recommended in particular:

- additional international candidates and diversification of skills on the Supervisory Board, in particular given the departure of Mr. José-Carlos Grubisich;
- establishment of a strategic review of the technologies specific to Vallourec and its various industrial tools.

FINANCE AND AUDIT COMMITTEE

3 members

6 meetings

100% attendance rate

Composition

The Finance and Audit Committee is comprised of a minimum of three members and a maximum of five members, who are chosen from among the members of the Supervisory Board and have specific expertise in finance, accounting or statutory auditing. As at 28 February 2019, it was comprised of three members: Mr. Jean-Jacques Morin (Chairman), Bpifrance Participations, represented by Mr. Alexandre Ossola and Ms. Alexandra Schaapveld, all independent with the exception of Bpifrance Participations, or a 66% proportion of independent members within the Finance and Audit Committee. The Chairman of the Board and the Lead Member are also invited to the Finance and Audit Committee meetings.

All the members have particular knowledge of finance or accounting, or statutory auditing, and have the necessary expertise, experience and qualifications to successfully perform their tasks within the Finance and Audit Committee. The Chairman, Mr. Jean-Jacques Morin, has for more than twenty years held positions within major groups (Alstom, AccorHotels) in particular in the areas of finance and management control (for a description of the expertise and experience of members of the Finance and Audit Committee: see Section 7.1.1.2 "The Supervisory Board" above). When they are first appointed, the members are sent detailed information on the Group's specific accounting, financial and operating processes.

Powers

The role of the Finance and Audit Committee is to prepare the necessary information for the Supervisory Board's deliberations, which concern monitoring issues relating to the preparation and control of accounting and financial data, in compliance with Article L.823-19 of the French Commercial Code (*Code de commerce*). To this end, it issues opinions, proposals and recommendations in its area of expertise. It acts under the authority of the Supervisory Board, for which it must not be substituted, and regularly informs it of its tasks, the results of the task of certifying the financial statements, how this task contributed to the integrity of the financial information, along with the role it played in this process. It provides immediate notice of any difficulty encountered while performing its tasks.

Within this framework, the Finance and Audit Committee oversees:

- the process of preparation of financial information.

  As needed, it makes recommendations to guarantee the integrity of the process of preparing the financial information.

  In this respect, the Committee is presented with:

  - the retrospective and forward-looking financial data each quarter,
  - risk exposure and significant contingent liabilities and commitments of the Group, and
  - at its request, accounting matters that may have a significant impact on the preparation of the financial statements.

  Draft external financial communications are presented to the Committee for its opinion;

- the effectiveness of the internal control and risk management systems, as well as of the internal audit system, as concerns the procedures relating to the preparation and processing of the accounting and financial information, without compromising its independence.

  In this respect, each year the Committee is presented with:

  - the internal audit plan,
  - the assignment reports and main findings of the audits,
  - a summary of the actions taken in the area of risk management, and
  - a summary of the Statutory Auditors' performance of their duties, in particular the statutory audit of the Company and consolidated financial statements.

  To that end, the Statutory Auditors present the results of their audit to the Committee at each half-year, emphasizing, where applicable, the audit adjustments and significant weaknesses in internal control that were identified during the work, and the accounting options used.

  The Committee gives the Supervisory Board its opinion as to the relevance and consistency of the accounting methods used to prepare the parent company and consolidated financial statements;

- compliance with the conditions for independence of the Statutory Auditors and the rules relating to the cap on their audit fees for services other than certification of the financial statements.

  In this regard, the Committee manages the procedure for selecting the Statutory Auditors, submits a recommendation to the Supervisory Board on the Statutory Auditors proposed for appointment by the Shareholders' Meeting, receives the Statutory Auditors' statement of independence and receives an annual summary of all the services provided to the Vallourec Group by the Statutory Auditors and their networks.

  The Committee is in charge of approving the Statutory Auditors' provision of services other than the certification of financial statements, which are not prohibited services, upon analyzing the risks to the Statutory Auditors' independence and the safeguards applied by the latter to mitigate these risks.

In addition to the above duties, the Supervisory Board or its Chairman may decide to refer any issue requiring the Board's prior approval to the Finance and Audit Committee. Also, the Supervisory Board or its Chairman may request it to examine a specific matter in order to determine the financial implications. More generally, the Finance and Audit Committee reviews the various elements of the Group's financial strategy.

Operation

The Finance and Audit Committee meets at least four times a year to review the interim and annual financial statements before they are presented to the Supervisory Board. Subject to this condition, it defines the frequency of its meetings by agreement with the Chairman of the Supervisory Board. Its usual representative is the member of the Management Board in charge of Finance and, where applicable, employees designated by said member. It likewise meets with the people in charge of finance and accounting, cash and cash equivalents, internal audits, risk management and internal control, as well as with the Statutory Auditors, including, if the Committee so desires, without the members of the Management Board being present. In the latter case, said members must have been informed first.

Activities of the Finance and Audit Committee in 2018

In 2018, the Finance and Audit Committee met six times, with an effective attendance rate of 100%. On 13 November 2018, it had a meeting with the Statutory Auditors, without the members of the Management Board being present. During the fiscal year, the Committee examined the following issues and formulated opinions on them:

- the Group's financial communication projects;
- the quarterly cash and cash equivalents position and the medium and long-term financing plan;
- change in working capital requirements;
- the dividend policy and the proposal to not pay a dividend for fiscal year 2017;
- review of the 2018 assumptions;
- the budget for 2019;

- changes in accounting principles and the accounting policies used for preparing the year-end 2018 financial statements, including a review of the Group's impairment testing methods;
- the internal and external audit plans and their results;
- the organization of risk management and internal control within the Group;
- risk mapping;
- the process of establishing score cards to manage operating performance;
- the ethics and compliance policy within the Group and the results of this policy;
- sensitivity to the foreign exchange risk and the policy for hedging transactions;
- the Group's tax practices;

The Statutory Auditors attended all meetings of the Finance and Audit Committee for fiscal year 2018. They presented a report on the work completed as part of their mandate, emphasizing key points from the legal audit results and the accounting options used.

APPOINTMENTS, COMPENSATION AND GOVERNANCE COMMITTEE

5 members | 6 meetings | 93% attendance rate

Composition

The Appointments, Compensation and Governance Committee is comprised of a minimum of three members and a maximum of five members. As at 28 February 2019, it consisted of five members: Mr. Pierre Pringuet (Chairman), Ms. Laurence Broseta, Ms. Pascale Chargrasse (representing employee shareholders), Ms. Alexandra Schaapveld and Mr. Mickaël Dolou (representing employees). They are all independent [(1)].

The Chairman of the Management Board is associated with the work concerning appointments and governance, except in cases that concern his personal situation.

Powers

The role of the Appointments, Compensation and Governance Committee is to prepare information for the Supervisory Board's deliberations, which concern monitoring issues relating to the appointment and compensation of corporate officers, and to the governance of the Group. To this end, it issues opinions, proposals and recommendations in its area of expertise. It acts under the authority of the Supervisory Board, to which it reports, and for which it must not be substituted, and informs it of any difficulty encountered while performing its tasks.

The duties of the Appointments, Compensation and Governance Committee are as follows:

Appointments

- Preparing the procedure used to select members of the Supervisory Board and Management Board and determining the criteria to be used.
- Drawing up proposals for appointments and re-appointment.
- Regularly reviewing the composition of the Management Board and establishing a succession plan for members of the Management Board, in order to be able to propose succession solutions to the Board, in particular in the event of an unexpected vacancy.
- Regularly reviewing the composition of the Board and its Committees and making recommendations on changes to its composition when this appears appropriate.

The Committee's proposals for the offices of members of the Board are guided by the interests of the Company and all of its shareholders. They particularly take into account the desired balance of the Board's composition, as concerns the composition and evolution of the Company's shareholders, as well as the diversity of its areas of expertise, gender, and nationalities. The Committee ensures that its proposals to the Board reflect the necessary independence and objectivity.

The Committee completes its research on potential candidates before taking any action with them.

Compensation

- Proposals concerning the amounts and allocation of attendance fees paid to Supervisory Board members, as well as the compensation of members of the Committees.
- Proposals concerning the compensation of the Chairman of the Board.
- Compensation of members of the Management Board: the Committee is responsible for recommending to the Board the structure and level of the compensation paid to each member of the Management Board (fixed portion, variable portion and benefits in kind).
- Performance shares and share subscription or share purchase options for members of the Management Board.
- Policy for allocating performance shares and share purchase or subscription options to managers and executives and/or staff of the Group.

As regards members of the Executive Committee, the Committee is informed of their appointment, the compensation policy and succession plan concerning them.

Governance

- Reviewing the operation of the management bodies, particularly as regards changes in French regulations concerning the governance of listed companies and in light of the recommendations of the AFEP-MEDEF Corporate Governance Code and, where applicable, making proposals to the Board on updating the Company's corporate governance rules.
- Preparing the annual assessment of the Supervisory Board and recommendations resulting from such assessment.
- Reviewing and following up on any situation involving a conflict of interest between a Board member and the Company, which could lead the Board to request an express commitment from the member in such a situation.
- Reviewing requests from Supervisory Board members concerning the assumption of new offices or duties outside the Company.
- Reviewing the independence of Board members with regard to specific criteria which have been made public.

(1) In conformity with the AFEP-MEDEF Code, Ms. Pascale Chargrasse, who represents employee shareholders, and Mr. Mickaël Dolou, who represents employees, are not counted.

Operation

The Appointments, Compensation and Governance Committee meets at least twice a year. Subject to this condition, it defines the frequency of its meetings by agreement with the Chairman of the Supervisory Board.

Activities of the Appointments, Compensation and Governance Committee in 2018

The Appointments, Compensation and Governance Committee met six times in 2018, with an effective attendance rate of 93%.

During the fiscal year, the Committee examined the following issues and formulated opinions on them:

- the compensation of members of the Management Board for 2017, 2018 and 2019, as well as the report on 2017 compensation in view of implementing the Say on Pay mechanism;
- the overall budgets and the number of performance shares and share subscription options allocated to employees and each member of the Management Board, and the requirement for such members to retain a portion of the shares resulting from the exercise of options and of the performance shares allocated;
- the Management Board succession plan, particularly in case of an unforeseeable vacancy (see paragraph 7.1.2.6 above);
- the policy on compensation of the main senior executives who are not corporate officers;
- the Group's Human Resources strategy and the results of this strategy, analyzed in particular through the social barometer indicated in paragraph 4.3.3.2 above;
- the policy on the composition of the Supervisory Board;
- the annual evaluation of the Supervisory Board and Committees;
- the compliance of the Group's governance with the new recommendations of the AFEP-MEDEF Code in its June 2018 version;
- the composition of the Supervisory Board and its Committees;
- the independence of the Board members;
- legal and regulatory developments in governance matters; and
- the annual report of the French securities regulator (*Autorité des Marchés Financiers*) regarding business governance and executive management compensation, and the annual report of the Higher Committee on Corporate Governance.

STRATEGY COMMITTEE

3
members

3
meetings

100%
attendance
rate

Composition

The Strategy Committee is comprised of a minimum of three members and a maximum of five members. As at 28 February 2019, it was comprised of three members: Ms. Vivienne Cox (Chairman), Mr. Philippe Altuzarra, and Bpifrance Participations, represented by Mr. Alexandre Ossola, all independent with the exception of Bpifrance Participations, i.e. a proportion of independent members within the Strategy Committee of 66%.

Powers

The Strategy Committee is responsible for preparing the Supervisory Board's deliberations with regard to the Group's strategic directions and long-term future. To this end, it issues opinions, proposals and recommendations in its areas of expertise. It acts under the authority of the Supervisory Board, to which it reports, and for which it must not be substituted, and informs it of any difficulty encountered while performing its tasks.

In the course of its duties, the Strategy Committee reviews:

- each year, the Group strategy plan presented by the Management Board and any changes as well as the assumptions on which it is based;
- any projected merger or partial transfer of assets, any industrial or commercial agreement with other companies that could affect the Company's future and, more generally, any major transaction (such as external acquisition or disposal operations, significant capital expenditure in organic growth or internal restructuring operations) that could materially alter the business scope or financial structure of the Group or the type of risks it incurs. Within this context, the Committee reviews:
  - capital expenditure transactions when they exceed €50 million,
  - acquisition or disposal transactions when they exceed €50 million, and
  - following their implementation, the conditions for implementing and achieving objectives for the transactions that have been authorized by the Supervisory Board.

The Committee may carry out any other duties, regular or occasional, assigned to it by the Supervisory Board in its area of competence. It may suggest that the Supervisory Board refer to it on any particular point which it considers to be necessary or relevant.

Operation

The Committee met three times in 2018 with an average effective attendance rate of 100%.

CORPORATE SOCIAL RESPONSIBILITY (CSR) COMMITTEE

Composition

The Corporate Social Responsibility (CSR) Committee was created by the Supervisory Board on 13 December 2018. As at 28 February 2019, it was comprised of three members: Ms. Laurence Broseta (Chairman), Ms. Maria-Pilar Albiac-Murillo, and Mr. Philippe Altuzarra. They are all independent.

The members of the Management Board are associated with the work of the Corporate Social Responsibility Committee and may participate at its meetings.

Powers

The role of the Corporate Social Responsibility Committee is to prepare the necessary information for the Supervisory Board's deliberations concerning the examination and monitoring of issues relating to corporate social responsibility and the way in which the Group strives to promote the creation of long-term value while considering the social and environmental challenges of its activities. To this end, it issues opinions, proposals and recommendations in its areas of expertise. It acts under the authority of the Supervisory Board, to which it reports, and for which it must not be substituted, and informs it of any difficulty encountered while performing its tasks.

In the course of its duties, the Corporate Social Responsibility Committee:

- examines the issues, risks and opportunities of the Group in corporate social responsibility matters;
- examines the Group's policies and commitments in corporate social responsibility matters, the implementation of these policies, and the results obtained;
- examines all non-financial information published by the Group;
- conducts a regular review of the Group's non-financial rating.

The Committee may carry out any other duties, regular or occasional, assigned to it by the Supervisory Board in its area of competence. It may suggest that the Supervisory Board refer to it on any particular point which it considers to be necessary or relevant.

Operation

The Corporate Social Responsibility Committee meets at least twice a year. Subject to this condition, it defines the frequency of its meetings by agreement with the Chairman of the Supervisory Board.

7.1.3 Declarations concerning the members of the Management and Supervisory Boards

To the Company's knowledge:

- no member of the Management Board or Supervisory Board has been convicted of fraud during the past five years;
- no member of the Management Board or Supervisory Board has been involved, during the past five years, with a bankruptcy, receivership or liquidation as a member of an administrative, management or supervisory body;
- no member of the Management Board or Supervisory Board has been charged, during the past five years, with an offense or been the subject of disciplinary action on the part of the statutory or regulatory authorities (including designated professional bodies);
- no member of the Management Board or Supervisory Board has been prevented, during the past five years, by a court from acting as a member of an administrative, management or supervisory body of an issuer, or from being involved in managing or running the business of an issuer; and
- no member of the Management Board or Supervisory Board has a current or potential conflict of interest between his duties to Vallourec and his private interests and/or other duties.

7.1.4 Regulated agreements

Loans and guarantees

No loans or guarantees have been granted by the Company or by a Group company to any member of the Management Board or Supervisory Board.

Service agreements providing for the granting of benefits

To the Company's knowledge, there is no service agreement between any member of the Management Board or Supervisory Board and the Company providing for the granting of benefits.

7.1.5 Management of conflicts of interest

To prevent any risk of a conflict of interest between a member of the Supervisory Board and the Management Board or any of the Group's companies, the Appointments, Compensation and Governance Committee constantly monitors the independence of members with regard to the AFEP-MEDEF Corporate Governance Code criteria; the Supervisory Board includes this as an item on its agenda at least once a year.

Each member is required to inform the Board of any situation involving a conflict of interest, even a potential one, and to refrain from taking part in discussions or voting on any issue at Board meetings where there may be in a conflict of interest, and to leave the Board meeting if a subject exposing the member to such a situation is discussed.

The Lead Member acts in a precautionary manner to raise awareness about conflicts of interest among the members of the Supervisory Board, and draws said Board's attention to any conflict of interest situation that has been identified, even a potential one.

When one of the members has a conflict of interest, whether actual or potential, regarding a subject matter to be debated by the Board, the Board ensures, by relying on the Appointments, Compensation and Governance Committee, that the information regarding this subject matter is not communicated to that member. Therefore, a member cannot accept another position or appointment, or make a significant investment in any company or business in competition with Vallourec or operating upstream or downstream of it, without the Board's prior approval. As an exception, this rule does not apply to legal entities that are members of the Supervisory Board, but if they take new positions or similar appointments, each case will be discussed with the Board in order to eliminate any risk of conflicts of interest. Members of the Supervisory Board, non-voting Board members (*censeurs*) and members of the Management Board must inform the Chairman of the Supervisory Board before accepting a new appointment in other companies. The Chairman of the Board will give an opinion after consulting with the Appointments, Compensation and Governance Committee.

The information presented in this section is taken from the Internal Regulations of the Supervisory Board, which are available on the Company's website (http://www.vallourec.com).

7.1.6 Declaration on Corporate Governance

The Supervisory Board has adopted the AFEP-MEDEF Corporate Governance Code, as amended for application to limited liability companies (*société anonyme*) managed by a Supervisory Board and a Management Board. Vallourec complies with all of the recommendations prescribed in the Code under the conditions set out in the summary table.

Compliance with the recommendations of the AFEP-MEDEF Code

The following table summarizes the recommendations of the AFEP-MEDEF Code that Vallourec has chosen not to apply and the circumstantial explanations for this.

Recommendations of the AFEP-MEDEF Code (June 2018)	Application by Vallourec
Paragraph 10.3 of the AFEP-MEDEF Code recommends "holding a meeting each year without the executive corporate officers in attendance".	The Supervisory Board has chosen to set aside a time for discussions without the Management Board in attendance at the end of each of its meetings, instead of having a full meeting each year.
Paragraph 22 of the AFEP-MEDEF Code recommends that the Board "shall determine a minimum number of shares that the executive corporate officers must hold in registered form until the end of their terms. *This Decision shall be reviewed at least each time their office is renewed. (...) As long as that number has not been reached, the executive corporate officers shall devote a portion of their exercised options or vested shares to that end, as determined by the Board*."	Given the significant number of Vallourec shares already held by Management Board members, and the binding obligations to hold shares received from both the exercise of options and the vesting of performance shares, Vallourec believes that it is not desirable to compel the members of the Management Board to purchase additional shares with their own funds and to build a securities portfolio almost exclusively composed of Vallourec shares.
Paragraph 24.6.2 of the AFEP-MEDEF Code recommends that the supplementary defined-benefit pension schemes of corporate officers satisfy the condition that, "the beneficiary be a corporate officer or employee of the Company at the time of claiming their retirement rights under the rules in force," as well as other rules not applicable to schemes closed to new beneficiaries which can no longer be changed.	The supplementary defined-benefit pension scheme of the members of the Management Board has been closed to new beneficiaries and future rights since the end of 2015 and cannot be changed. The beneficiaries may only benefit from "crystallized" vested rights upon liquidation of their social security pension.
Paragraph 20.1. of the AFEP-MEDEF Code recommends that the method for compensating Supervisory Board Members "[take into] account, according to the terms that [the Supervisory Board] defines, the actual participation of the [members] on the Board and in the Committees, and that it thus [contains] a preponderant variable portion".	Since 1 January 2014, the structure of the Supervisory Board Chairman's compensation no longer contains a variable portion taking any variations linked to attendance into account. All of the elements of her compensation which applied up to year-end 2013 (attendance fees and fixed annual compensation) were aggregated, resulting in one single fixed annual compensation. The Supervisory Board considers that this method of compensation is reasonable and consistent to the extent that the Supervisory Board Chairman performs duties and procedures which go well beyond merely attending the Supervisory Board and Committee meetings. It should nevertheless be emphasized, for all practical purposes, that in 2018 the Supervisory Board Chairman was present at all meetings of the Supervisory Board, the Strategy Committee, as well as at several of the Finance and Audit Committee meetings (even though, as at 28 May 2014, she was no longer a member of this Committee).
Paragraph 21.1. of the AFEP-MEDEF code requires that it "*is recommended, when an employee becomes an executive corporate officer of the company, to terminate the employment contract that links the employee to the company or a group of companies.* The employee can either terminate the contract or resign".	At the date of this Registration Document, the Chairman of the Management Board does not have an employment contract. For the future, a Group employee who is appointed Chairman of the Management Board may keep the benefit of their employment contract, the performance of which would then be suspended for the duration of the employee's duties as Chairman of the Management Board, subject to justification. Keeping this benefit must conform with the other provisions of the AFEP-MEDEF Code, in particular the parts that concern severance pay.
For non-competition agreements of executive corporate officers, paragraph 23.4 of the AFEP-MEDEF Code recommends that the "*Board also requires that the non-compete compensation payment is excluded as soon as executive managers claim their retirement rights. In any event, no compensation payment can be made after the age of 65*".	When the Chairman of the Management Board steps down, the Supervisory Board will decide if this conforms to the recommendation, according to the interest of the Group at that time.

In view of the above, Vallourec believes that it complies with the Corporate Governance Regulations currently in force in France.

7.2 Compensation and benefits

Details are provided below of the compensation and benefits of all kinds awarded to Vallourec's corporate officers by the Company and companies controlled by the Company within the meaning of Article L.233-16 of the French Commercial Code *(Code de commerce),* in accordance with the presentation defined by the AFEP-MEDEF Corporate Governance Code, and the most recent recommendations of the French securities regulator *(Autorité des Marchés Financiers).* They should be read in light of the compensation policy for corporate officers (see below, paragraph 7.2.1 of this chapter).

7.2.1 Compensation policy for corporate officers

This report was drafted in application of Article L.225-82-2 of the French Commercial Code, in view of the vote of shareholders at the Shareholders' Meeting on 23 May 2019, on the principles and criteria for the determination, distribution and allocation of the fixed, variable, and special components of the total compensation and the benefits attributable to the Chairman and to members of the Management Board, and to the Chairman and members of the Supervisory Board for fiscal year 2019 for their service.

The compensation and benefits policy for the Chairman and members of the Management Board and the Chairman and members of the Supervisory Board is determined by the Supervisory Board, at the proposal of its Appointments, Compensation and Governance Committee (the "ACGC"), to have such compensation seen as fair and balanced by both shareholders and employees.

Vallourec operates worldwide on the seamless tube production market, a sector that requires specific expertise developed by only a limited number of talented people. Having people who have high potential and the capacity to face ambitious challenges is essential for ensuring the Group's profitability and for generating value. The compensation and benefits policy aims to attain this objective by allowing the Group to attract and retain the most talented people, whose contributions help create more value for shareholders.

7.2.1.1 Governance regarding the compensation and benefits policy for the Chairman and members of the Management Board and the Chairman and members of the Supervisory Board

The compensation and benefits policy for the Chairman and members of the Management Board and Chairman and members of the Supervisory Board is reviewed each year. It is determined by the Supervisory Board, at the proposal of the ACGC. The definition of this policy takes into account the work accomplished, the net profits obtained and the responsibility assumed, and relies on analyses of the market context, which are in particular based on compensation and benefits surveys conducted by outside consultants.

7.2.1.1.1 THE COMPOSITION AND ROLE OF THE APPOINTMENTS, COMPENSATION AND GOVERNANCE COMMITTEE IN TERMS OF THE COMPENSATION AND BENEFITS FOR THE CHAIRMAN AND MEMBERS OF THE MANAGEMENT BOARD AND CHAIRMAN AND MEMBERS OF THE SUPERVISORY BOARD

As at 31 December 2018, the ACGC consisted of 5 members, three of whom are independent, one who represents employees, and one who represents employee shareholders. The Committee has no executive corporate officers from the Vallourec Group, and is chaired by an independent member. Its members are:

- Mr. Pierre Pringuet, Chairman, independent member, Vice-Chairman of the Supervisory Board and Lead Member;
- Ms. Laurence Broseta, independent member;
- Ms. Pascale Chargrasse, representative of employee shareholders;
- Mr. Mickaël Dolou, employee representative; and
- Ms. Alexandra Schaapveld, independent member.

In terms of compensation and benefits for the Chairman and the members of the Management Board, the ACGC:

- prepares the annual evaluation of the Chairman and the members of the Management Board;
- proposes to the Supervisory Board the principles of the compensation and benefits policy for the Chairman and members of Management Board, and in particular the criteria for determining its structure and the level of this compensation (fixed and variable annual portion, and medium and long-term instruments), including benefits in kind, and insurance or retirement benefits;
- proposes to the Board the number of performance shares and share subscription or purchase options allocated to the Chairman and to each member of the Management Board;
- drafts proposals for the Board regarding the mechanisms that are linked to the termination of Management Board's Chairman and members duties.

In terms of the compensation and benefits for members of the Supervisory Board, the ACGC:

- proposes to the Supervisory Board the principles and criteria of the compensation and benefits policy for members of the Supervisory Board, including the breakdown between the fixed portion and the portion based on attendance fees, and the structure of the compensation of the Chairman and Vice-Chairman of the Supervisory Board.

In order to ensure consistency between the compensation and benefits paid to the Chairman and members of the Management Board and those prevailing within the Group, the ACGC examines the policy for allocating performance shares and share purchase or subscription options to managers and executives and/or employees of the Group, and is informed of the compensation policy for members of the Executive Committee and, more generally, of the compensation policy for the Group.

The 2018 Registration Document contains a description of the ACGC's activity over the course of the last fiscal year.

In order to prepare its work on compensation, the ACGC may request outside studies, and in particular compensation surveys, so that it can assess market conditions. It selects and manages the consultants concerned, in order to ensure they are competent, and monitors their independence and objectivity. The fees for these consultants are paid out of the Supervisory Board's budget, which is reviewed annually by the Board. The ACGC itself determines the composition of the reference panels.

The ACGC likewise meets with the heads of the functional departments, in particular the Human Resources Department and the Legal Department, with which it organizes inter-departmental meetings to ensure that its work is consistent with the Group's social and governance policies.

In preparing its work, the ACGC invites experts in governance and engineering in the area of managerial compensation and benefits to share their know-how and experience at dedicated work meetings, which are also attended by the functional department heads.

Ahead of the actual meetings of the ACGC, the Chairman of the ACGC has discussions with the requested consultants and other members of the ACGC, and holds several work meetings with internal staff supervisors in order to ensure that all of the issues examined by the ACGC are documented in an exhaustive and pertinent manner.

The ACGC also enlists the expertise of the Finance and Audit Committee to determine and assess the pertinence of the quantitative financial criteria for variable monetary compensation and medium- and long-term incentive instruments allocated to the Chairman and to members of the Management Board.

The ACGC reports verbally on its work during the Supervisory Board's meetings. A written report of each meeting of the Committee is established by the secretary of the Committee, under the authority of the Chairman of the Committee, and is sent to Committee members. It is included in the Board meeting files after the meeting during which the report is drafted.

7.2.1.1.2 THE ROLE OF THE SUPERVISORY BOARD IN TERMS OF THE COMPENSATION AND BENEFITS FOR THE CHAIRMAN AND MEMBERS OF THE MANAGEMENT BOARD AND THE CHAIRMAN AND MEMBERS OF THE SUPERVISORY BOARD

Compensation and benefits for the Chairman and members of the Management Board

The Supervisory Board, upon the ACGC's recommendations, establishes all components of the short and long-term compensation and benefits for the Chairman and members of the Management Board (fixed portion, variable portion, equity instruments – performance shares and stock options), as well as benefits in kind, and insurance or pension benefits, along with specific departure schemes.

When a report of the ACGC's work on the Management Board Chairman and members compensation and benefits is presented, the Supervisory Board deliberates on the compensation of the Chairman and members of the Management Board when said members are not present.

All potential or acquired elements of compensation and benefits for the Chairman and members of the Management Board are made public after the Board meeting at which they were decided, by adding them to Vallourec's website.

Compensation and benefits for the Chairman and members of the Supervisory Board

The Supervisory Board, upon the ACGC's recommendations, establishes all components of the compensation and benefits for members of the Supervisory Board. It distributes the attendance fees between its members based on the annual budget authorized by the Ordinary Shareholders' Meeting, and determines the compensation awarded to the Chairman and Vice-Chairman of the Supervisory Board.

When a report of the ACGC's work on the compensation awarded to the Chairman and Vice-Chairman of the Supervisory Board is presented, the Supervisory Board deliberates when said officers are not present.

7.2.1.2 Supervisory Board policy on the compensation and benefits for the Chairman and members of the Management Board

7.2.1.2.1 GENERAL PRINCIPLES OF THE BOARD POLICY ON THE COMPENSATION AND BENEFITS FOR THE CHAIRMAN AND MEMBERS OF THE MANAGEMENT BOARD

The Supervisory Board conducts an overall assessment of the elements of compensation and benefits for the Chairman and members of the Management Board and its decisions are governed by the following principles:

- **recognition of short, medium and long-term performance:** the compensation and benefits structure for the Chairman and members of the Management Board contains a variable monetary portion which is based on performance for the fiscal year ended (short-term performance) and equity instruments which reflect performance over a three-year term regarding performance shares, and a four-year term, regarding stock options (long-term performance); the performance criteria used correspond to the Company's financial and operational objectives;
- **a balance between fixed, short-term variable and medium and long-term variable compensation and benefits:** the ACGC ensures a balance between the three components of the compensation and benefits (fixed portion, annual variable portion and medium- and long-term incentive equity instruments);
- **competitiveness:** the Supervisory Board ensures that compensation is tailored to the market in which Vallourec operates. To that end, the ACGC analyzes the data of a panel of listed companies which are comparable with regard to revenue, staff, international establishment and market capitalization. Within this context, the desired target compensation and benefits for the Chairman and members of the Management Board would be close to the top quartile of the sample;
- **consistent compensation and benefits among all members of the Management Board:** the compensation and benefits of the Chairman and members of the Management Board are set according to their responsibilities within the Group, complying with a ratio of reasonable proportion, in order to encourage the collegial commitment of the Management Board as a whole towards the Group;
- **consistency with the prevailing structure of employee compensation and benefits within the Group:** a significant portion of the Group's managers benefit from a compensation and benefits structure which, like that of the Chairman and members of the Management Board, contains a fixed portion and a variable portion, along with long-term incentive equity instruments.

7.2.1.2.2 STATUS OF THE CHAIRMAN AND MEMBERS OF THE MANAGEMENT BOARD

The Chairman of the Management Board does not have an employment contract. As an exception, a Group employee appointed Chairman of the Management Board could continue to benefit from their work contract, which would be suspended during their term as Chairman of the Management Board, subject to justification, and provided that this does not cause any non-compliance with the other provisions of the AFEP-MEDEF Code, in particular as concerns termination payments.

Members of the Management Board may hold employment contracts for which performance has been suspended during their term of office on the Management Board.

7.2.1.2.3 COMPONENTS OF THE COMPENSATION AND BENEFITS OF THE CHAIRMAN AND MEMBERS OF THE MANAGEMENT BOARD

7.2.1.2.3.1 Weight of the components of the compensation and benefits of the Chairman and members of the Management Board

The primary components of the compensation and benefits of the Chairman and members of the Management Board, along with their purposes, are defined as follows:

Component		Purposes
Fixed portion		Role and responsibility
Variable portion		Linked to short-term performance by the achievement of annual objectives
Medium- and long-term incentive equity instruments	Performance shares	Linked to medium-term performance and alignment with shareholders' interests
	Stock options	Linked to long-term performance and alignment with shareholders' interests

The Supervisory Board ensures balance of the compensation and benefits between the three components (fixed portion, annual variable portion and medium- and long-term incentive equity instruments). The weighting for each of these components is one-third, provided that the amount of the variable portion is integrated in the target and the medium- and long-term incentive equity instruments are valued at their carrying amount for a target achievement.

7.2.1.2.3.2 Fixed portion of the Chairman and members of the Management Board

The fixed portion is reviewed every year based on the responsibility assumed by the Chairman and each member of the Management Board and on Vallourec's business sector, which is cyclical by nature.

To that end, the ACGC relies on compensation surveys conducted by outside consultants. It sets up the panel and makes adjustments as necessary according to revenues, market capitalization and sector of business of the companies on the panel, in order to ensure complete comparability and thus a high correlation between the fixed portion and the Group's size.

In addition, since the variable portion is based on the fixed portion, the Supervisory Board devotes particular attention to ensuring that the fixed portion is reasonable in application of the principles described in point 7.2.1.2.1 above.

The Supervisory Board also ensures that changes in the fixed portion for the Chairman and members of the Management Board appear moderate as compared to the overall wage increases of French employees over the same period.

For example, the 2019 fixed portion for Mr. Philippe Crouzet, Chairman of the Management Board, amounting to €798,000 and the fixed portion for Mr. Olivier Mallet, amounting to €420,000, have remained unchanged since 2014.

7.2.1.2.3.3 Variable portion of the Chairman and members of the Management Board

The variable portion aims to associate the Chairman and the members of the Management Board with the short-term performance of the Group. Its structure is reviewed and determined every year by the Supervisory Board, upon recommendations from the ACGC.

Determined on an annual basis, it corresponds to a percentage of the fixed portion and contains minimum thresholds, below which no payment is made; target levels when the objectives set by the Supervisory Board are met, and maximum levels when target objectives have been exceeded.

With regard to the 2019 fiscal year, the variable portion of the Chairman of the Management Board may vary from 0 to 100% of his target fixed portion and reach 135% of this same fixed portion in the event that maximum objectives were attained. For the members of the Management Board, the variable portions may vary from 0 to 75% of their target fixed portions and attain 100% in the event that maximum objectives were achieved.

The variable portions are subordinate to achievement of several precise and previously established objectives of a quantifiable or qualitative nature, for which the minimum, target and maximum thresholds are set by the Supervisory Board, upon recommendation from the ACGC. The quantifiable criteria are predominant.

The objectives taken into account to determine the variable portion are set each year based on the key operating and financial indicators of the Group, which are in line with the nature of its activities, strategy, values, and the challenges it faces.

For 2019, the Supervisory Board decided to determine the variable portions of the Chairman and members of the Management Board using the same fundamental components that were used for the Group in 2017 and 2018:

	Chairman of the Management Board (target variable portion: 100% of fixed portion)	Members of the Management Board (excluding the Chairman) (target variable portion: 75% of fixed portion)
1. Financial performance Net cash flow generated by activity, EBITDA, net debt	Weighting: 60%	Weighting: 45%
2. Operational performance Following the deployment of the Transformation and Quality Plan	Weighting: 25%	Weighting: 18.75%
3. CSR Safety, Environment	Weighting: 15%	Weighting: 11.25%

The attainment of the financial performance objectives will be measured at the exchange rates applied to these objectives in the budgeting process.

Pursuant to Article L.225-82-2 of the French Commercial Code, the payment of the elements of variable compensation to the Chairman and to the members of the Management Board is subject to approval by the Ordinary Shareholders' Meeting of the elements of compensation of the individual concerned under the terms provided for in Article L.225-100 of the French Commercial Code.

7.2.1.2.3.4 Long-term incentive equity instruments of the Chairman and members of the Management Board

7.2.1.2.3.4.1 Performance shares and options

In an industrial group for which capital expenditure projects might have a distant time frame for achieving profitability, medium- and long-term incentive equity instruments seem particularly appropriate. Consequently, the Group has used a dynamic policy for many years for employees to share the Company's results, by establishing performance share and stock subscription or purchase options allocation plans. The Supervisory Board believes that the combination of these two tools, which align the interests of beneficiaries with those of the shareholders, is important insofar as the performance shares are connected to medium-term performance, while options are linked to long-term performance.

In accordance with the twenty-sixth and twenty-seventh resolutions that were adopted by the Ordinary and Extraordinary Shareholders' Meeting held on 12 May 2017, the Supervisory Board authorized the renewal in 2018:

- for the twelfth consecutive year, a performance share allocation plan, subject to continued service and performance conditions, for the benefit of the Chairman and members of the Management Board, members of the Executive Committee and managers;
- for the twelfth consecutive year, a stock subscription or purchase options allocation plan, subject to continuous service and performance conditions, for the benefit of members of the Management Board and the Executive Committee.

For the Chairman and the members of the Management Board, as well as for members of the Executive Committee, the distribution between the two instruments is approximately three fourths performance shares and one quarter share purchase or subscription options. For managers, the Board, at the recommendation of the ACGC and in conformity with market practices, decided not to allot options starting in 2017, but to instead increase the number of performance shares. Overall, the portion to be allotted to members of the Management Board may not exceed 15% of the total performance shares and 50% of the total share purchase or subscription options.

To determine the number of performance shares and stock options allocated to the Chairman and members of the Management Board, the ACGC measures the fair value of these instruments and then sets an allocation volume that ensures a balance of the compensation and benefits between the three elements (fixed, variable and long-term incentive instruments). In recent years, adverse changes in the fair value of these instruments, however, has not made it possible to ensure this balance. On the recommendation of the ACGC, the Board decided that for the allocation of performance shares and stock options to the Management Board it would gradually return to a value that represents approximately one third of the total of the three target components of compensation and benefits (fixed portion, variable portion and long-term incentive instruments).

As such, the Board, based on the ACGC's proposal, decided that for 2017 the volume of performance shares and stock options allocated to the Management Board would represent a target of 22% of the total of those three components of compensation and benefits for target performance. For 2018, in accordance with the gradual application of this policy, the Board, at the ACGC's proposal, set the volume for allocating performance shares and options to the Management Board at 25% of all three components of compensation and benefits for target performance.

For 2019, given the drop in stock price, and to avoid any deadweight effect, the Supervisory Board, at the proposal of the ACGC, has decided to temporarily stop implementing this objective of gradually increasing the allocation value of the performance shares and options for the Management Board. The Supervisory Board has decided to allocate the same number of performance shares and options to the Management Board as in 2018.

The number of performance shares and options definitively allocated to beneficiaries following the performance assessment period will be calculated by applying a factor which measures the performance for each of the criteria to the number of performance shares and options initially allocated for target performance. The Board, wishing to simultaneously maintain very demanding criteria (notably demonstrated by the very low effective allocation rates of the past few years – see paragraph 7.4.2.3.4.4 of the Supervisory Board Report on the 2018 compensation of corporate officers) and encourage outperformance, which is likely to increase value to the benefit of shareholders, set the outperformance factor at 2. This allocation factor will vary from 0 to 2 under the following conditions. It is noted that even in the case of maximum outperformance, the share of long-term incentive equity instruments in the overall compensation of members of the Management Board shall remain below the first quartile of the reference panel used by the Company.

Performance shares

In accordance with the twenty-seventh resolution adopted by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017, performance shares allocated to the Chairman and members of the Management Board in 2019 will be subject to performance conditions assessed over three years and measured on the basis of the following two quantitative criteria in line with the objectives of the Transformation Plan aimed at improving the Group's competitiveness:

- an internal absolute criterion: reduction of costs in 2019, 2020, and 2021 compared to the planned performance in the Group's medium-term plan for the same period (weighting 50%);
- an external relative criterion: growth of the EBITDA margin between 2019 and 2021 compared to a panel of comparable companies comprised as follows: Hunting Plc, United States Steel Corp, Nippon Steel & Sumitomo Metal Corp., Tubacex SA, Tenaris SA, Voestalpine AG, Seah Steel Corp, Tubos Reunidos SA, TimkenSteel Corp, Salzgitter AG, ArcelorMittal SA, TMK and NOV (weighting 50%).

The number of performance shares definitively allocated to the Chairman and members of the Management Board following the performance assessment period shall be calculated by applying a factor which measures the performance for each of the criteria to the number of performance shares initially allocated. This allocation factor will vary from 0 to 2 under the following conditions:

- absolute internal criterion based on cost reduction (F1): factor 1 would correspond to achieving the medium-term plan objectives during the performance vesting period (the "F1 Planned Performance"). It would be 0 if the performance achieved was 2 or more points less than the F1 Planned Performance, and 2 if the performance achieved was 2 or more points greater than the F1 Planned Performance. A linear progression will be applied between limits;

- external relative criterion based on the growth of the EBITDA margin (F2): factor 1 would correspond to growth of the EBITDA margin that is equal to the median growth of the gross margin of the panel (the Panel Performance"). It would be 0 if the performance achieved was 2 or more points less than the Panel Performance, and 2 if the performance achieved was 2 or more points greater than the Panel Performance. A linear progression will be applied between limits.

Stock subscription or purchase options plans

In accordance with the twenty-sixth resolution adopted by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017, stock subscription or purchase options allocated to the Chairman and members of the Management Board in 2019 will be subject to performance conditions assessed over four years and measured on the basis of two quantitative criteria as follows:

- an internal absolute criterion: aggregate net cash flow for the Group in 2019, 2020, 2021, and 2022 compared to the planned performance in the Group's medium-term plan for the same period (weighting 50%);
- an external relative criterion: Total Shareholder Return (TSR) for 2019, 2020, 2021, and 2022 compared to a panel of comparable companies comprised as follows: Hunting Plc, United States Steel Corp, Nippon Steel & Sumitomo Metal Corp., Tubacex SA, Tenaris SA, Voestalpine AG, Seah Steel Corp, Tubos Reunidos SA, TimkenSteel Corp, Salzgitter AG, ArcelorMittal SA, TMK and NOV (weighting 50%).

The number of options that were definitively granted to the Chairman and members of the Management Board following the vesting period shall be calculated by applying a factor which measures the performance for each of the criteria to the number of options initially granted. This factor will vary from 0 to 2 under the following conditions:

- absolute internal criterion based on the aggregate free cash flow of the Group (F1): factor 1 would correspond to achieving the medium-term plan objectives during the performance vesting period (the "F1 Planned Performance"). It would be zero if the performance achieved was less than 70% of the F1 Planned Performance, and 2 if the performance achieved was greater or equal to 120% of the F1 Planned Performance. A linear progression will be applied between limits;
- external relative criterion based on the Total Shareholder Return (TSR) (F2): factor 1 would correspond to performance between the 5th and 6th deciles of the panel of comparable companies. It would be zero if the performance achieved was less than the 4th decile of the panel; it would be 0.8 if the performance achieved was ranked in the 5th decile of the panel and 2 if the performance achieved was greater than the 8th decile of the panel. A linear progression will be applied between limits.

The confidential nature of the first absolute criteria on performance shares and stock subscription or purchase options does not allow their target content to be disclosed. However, at the end of the performance assessment period, Vallourec will communicate the minimum, target and maximum thresholds to be achieved and the linear progression applied between them.

Within the set of performance objectives for performance shares and stock options, the relative criteria represent 50%.

The Supervisory Board considers that the performance criteria that apply to stock subscription or purchase options and performance shares allocated to the Chairman and members of the Management Board are correlated to the medium and long-term evolution of the Group's overall performance and results.

The Chairman and members of the Management Board are required to retain until the end of their terms of office (i) one quarter of the performance shares allocated to them under the terms of a plan and (ii) the equivalent in Vallourec shares of one quarter of the gross capital gain realized on the date of sale of the shares resulting from the options exercised. They moreover agree not to use hedging instruments in connection with the exercise of options, selling shares resulting from the exercise of options, or selling performance shares.

As recommended by the AFEP-MEDEF Code, the Supervisory Board may, when allocating stock subscription or purchase options and performance shares, provide for a stipulation authorizing it to determine whether or not to maintain all or part of the long-term compensation plans that are not yet vested, options not yet exercised, or performance shares not yet vested at the time of the beneficiary's departure. Performance conditions would in any event be applied for the entire performance assessment period prescribed by each plan.

7.2.1.2.3.5 Benefits in kind of the Chairman and members of the Management Board

In terms of benefits in kind, the Chairman and members of the Management Board benefit, as do the majority of the Group's senior executives, from a Company car.

7.2.1.2.3.6 Attendance fees of the Chairman and members of the Management Board

Management Board members do not collect any compensation or attendance fees for the corporate offices they hold in direct or indirect subsidiaries of the Vallourec Group.

7.2.1.2.3.7 Supplementary pension scheme of the Chairman and members of the Management Board

In accordance with market practices and to retain the Group's senior executives, the Chairman and members of the Management Board are offered a comprehensive supplementary retirement plan to enable them to save for retirement, while preserving the economic interests of the Company via defined performance conditions.

This new system was set up in 2016 to replace the defined-benefit supplementary pension scheme previously in effect. This new scheme will ensure each of its beneficiaries, individually, a net annuity level equal to that of the previous plan, while allowing Vallourec to achieve savings of around 22%.

This plan, subject to the regulated agreements procedure of Articles L.225-86 *et seq.* and Article L.225-90-1 of the French Commercial Code, was approved by the Shareholders' Meeting of 6 April 2016 (sixth, eighth and ninth resolutions).

The new supplementary pension scheme introduced in 2016 includes the following three components:

Closing of the defined benefit scheme (Article 39 of the French General Tax Code)

The Chairman and members of the Management Board benefit, along with 22 other senior executives meeting the eligibility requirements, from the defined benefit scheme under the terms and conditions set by the closing regulation, under which no new potential rights will be created with respect to the closed scheme and beneficiaries may only benefit from "crystallized" vested rights upon liquidation of their social security pension.

Mandatory group defined-contribution scheme (Article 83 of the French General Tax Code)

The Chairman and members of the Management Board benefit from a new, collective and mandatory defined-contribution retirement scheme open to all employees who meet the eligibility requirements (1). The contribution to this scheme would be set at 12% of the compensation exceeding between four and eight times the Social Security cap. The scheme can only be liquidated upon liquidation of the social security pension.

The Company's financial obligation is strictly limited in terms of amount and time since it can close the scheme at any time.

Individual scheme subject to performance criteria (Article 82 of the French General Tax Code)

The Chairman and members of the Management Board, along with other senior executives meeting the eligibility requirements (2), benefit from a new, individual defined-contribution pension scheme to which the Company contributes and for which, in the spirit of the Macron Law, the Supervisory Board decided to establish performance criteria.

With respect to these performance conditions, the Board has decided to determine the effective contribution rate based on the annual bonus rate: the maximum contribution will be payable for the year in the case of an annual bonus calculated at 50% of the target; no contribution will be paid if the calculated annual bonus equals zero; the contribution will vary on a straight-line basis between limits ranging from 0 to 50%.

In order to finance the contribution, the Company's share is equal to a percentage of the gross compensation less employee contributions and the income tax generated by this contribution. The scheme can only be liquidated upon liquidation of the social security pension.

The Company may terminate this scheme at any time in such a way that it does not represent a deferred obligation.

These schemes exist to improve the replacement revenue of beneficiaries and grant no specific advantage to the Chairman and members of the Management Board compared with eligible executive officers employed by the Group.

The determination of the overall compensation of the Chairman and members of the Management Board took into account the benefits under this supplementary pension scheme.

The Group's supplementary pension scheme has a replacement rate which remains clearly below market practice, regardless of the reference panel used.

7.2.1.2.3.8 Mechanisms linked to termination of the duties of the Chairman and members of the Management Board

The principles of mechanisms linked to the termination of duties of the Chairman and members of the Management Board have remained the same since 2013. These mechanisms were approved by the Shareholders' Meeting of 6 April 2016 (fourth and seventh resolutions).

7.2.1.2.3.8.1 Mechanism linked to the termination of the duties of Chairman of the Management Board

Monetary termination benefit for the Chairman of the Management Board

In accordance with AMF recommendations and the AFEP-MEDEF Code before it was revised in November 2016, the monetary termination benefit for the Chairman of the Management Board will only be due in the event of dismissal. No compensation will be due if it is possible for the Chairman of the Management Board to invoke his retirement rights within a short period of time.

The monetary termination benefit amount is limited to twice the average gross fixed and variable annual compensation payable in respect of the two fiscal years preceding the date of departure (hereinafter the "Maximum Benefit"). The aggregate compensation due under the no competition clause and the termination benefit – if one is due – may not under any circumstances exceed the Maximum Benefit.

The benefit shall be calculated using the fixed monetary compensation payable in respect of the financial period preceding the departure date, plus the target variable monetary remuneration determined for the same period (the "Reference Compensation") and may not under any circumstances exceed the Maximum Benefit.

Its amount will depend on the achievement of performance conditions set out in paragraph 7.2.1.2.3.8.3 below.

Non-compete obligation applicable to the Chairman of the Management Board

Considering his steel industry expertise, the Supervisory Board has sought to enable the Group to safeguard its know-how and activities by imposing a conditional non-compete obligation on the Chairman of the Management Board should he leave the Group.

At its entire discretion, the Supervisory Board may decide to prohibit the Chairman of the Management Board, at the time of his departure, and for a period of 18 months following the termination of his duties as Chairman of the Vallourec Management Board, for whatever reason, from working in whatever manner with a company or a group of companies in the steel industry, with no territoriality restrictions.

The Supervisory Board has taken note of the new recommendation of the AFEP-MEDEF Code, as revised in June 2018. Under its terms, non-compete compensation cannot be paid when the executive manager chooses to retire, and no compensation can be paid beyond age 65. When the Chairman of the Management Board leaves, it will be decided this recommendation is applicable to him, according to the Group's interest at that date.

Should this obligation be implemented by the Board, it would result in a payment to the Chairman of the Management Board of non-compete compensation equal to 12 months of gross fixed and variable monetary compensation, which is calculated based on the average of the gross fixed and variable annual monetary compensation that has been paid during the two fiscal years preceding the date of departure.

This sum would be paid in equal monthly advances during the entire period in which the non-compete clause is applicable.

The accumulation of the compensation paid under the non-compete clause and a termination benefit, should such benefit be paid, may not under any circumstances exceed twice the average gross fixed and variable annual monetary compensation payable in respect of the two financial periods preceding the Chairman of the Management Board's departure date.

The mechanism was approved by the Shareholders' Meeting of 30 May 2013, in its twenty-fourth resolution.

(1) Eligible employees are Vallourec employees and, subject to the completion of legal procedures, Vallourec Tubes employees. Eligible employees have annual compensation exceeding four times the Social Security cap (in 2017: 4 × €39,228), i.e., potentially 50 senior executives of the Group, including the Management Board members.

(2) Eligible employees are Vallourec and Vallourec Tubes employees who have at least three years' seniority in the Group and whose compensation exceeds eight times the Social Security cap, i.e. potentially eight senior executives, including the Management Board members.

7.2.1.2.3.8.2 Mechanisms linked to termination of the duties of members of the Management Board

The Supervisory Board takes into account all the benefits which may be claimed by each Management Board member in the event of dismissal, in order to decide whether or not to grant a monetary termination benefit in the event of dismissal. To this end the Board examines:

(i) the contractual severance pay, where applicable, provided for in the employment contract and likely to be due in the event of termination of said contract;

(ii) seniority in the Vallourec Group and the amount of severance pay to which the Management Board member concerned would be entitled under the applicable collective bargaining agreement in the event of termination of the employment contract for any reason other than serious misconduct.

In the case of an absence of contractual severance pay and limited seniority resulting in low severance pay, the Management Board member concerned may be eligible for a monetary termination benefit in the event of dismissal.

The termination benefit amount is limited to twice the average gross fixed and variable annual compensation payable in respect of the two fiscal years preceding the date of departure (hereinafter the "Maximum Benefit") and will not be payable should the Management Board member have the opportunity to claim his or her retirement rights in the near future.

The benefit shall be calculated using the fixed monetary compensation payable in respect of the financial period preceding the departure date, plus the target variable monetary remuneration determined for the same period (the "Reference Compensation") and may not under any circumstances exceed the Maximum Benefit.

The aggregate compensation due under the Collective Bargaining Agreement and the termination benefit – if one is due – may not under any circumstances exceed the Maximum Benefit.

Its amount will depend on the achievement of performance conditions set out in paragraph 7.2.1.2.3.8.3 below.

7.2.1.2.3.8.3 Performance criteria for the monetary termination benefit for the Chairman and the members of the Management Board

The amount of the termination benefit will depend on the achievement of three performance criteria assessed in the last three financial periods preceding the departure date (the "Reference Period").

The achievement of each performance criterion shall be combined with a rating range from a floor of 0 point to a ceiling of 30 points.

- The first "F1" performance criterion shall be assessed on the EBITDA rate, expressed as a percentage of revenues for each financial period within the Reference Period. F1 shall vary on a straight-line basis between 30 points for a maximum determined by the Supervisory Board, upon the approval of the Appointments, Compensation and Governance Committee, with reference to the EBITDA rates achieved in the last three fiscal years closed, and at least equal to the average of these rates; and 0 point for a minimum at most equal to the maximum less 6 EBITDA points.
- The second performance criterion "F2" shall be assessed by comparing the EBITDA for each of the fiscal years in the Reference Period with the EBITDA forecast in the budget for those fiscal years, as established by the Management Board and approved by the Supervisory Board. F2 shall vary on a straight-line basis between 0 for an EBITDA that is 25% lower than the budgeted EBITDA, and 30 points for an EBITDA that is 12.5% higher than the budgeted EBITDA. The budgetary objective is set each year by the Supervisory Board, further to the opinion of the Appointments, Compensation and Governance Committee, upon review of the budget presented by the Management Board, and examined in advance by the Finance and Audit Committee.
- The third "F3" performance condition shall be based on the percentage of the variable portion of the monetary compensation payable in respect of each financial period of the Reference Period compared to the target variable portion of the period in question. F3 shall vary on a straight-line basis between 0 and 30 points (and limited to 30 points) according to the percentage of the variable portion paid compared to the target variable portion. The maximum of 30 points is reached for a computed variable portion equal to 100% of the target and the minimum of 0 point for a computed variable portion equal to 0% of the target.

In the event that the total of F1, F2 and F3 (hereinafter the "PF") is on average less than 40 during the Reference Period, no payment shall be due. For an average PF that is equal to 40 or 50, the payment shall be equal to 15 or 18 months' salary respectively (1/12 of the Reference Compensation), up to the Maximum Payment. The payment shall reach its maximum, i.e. 24 months, up to the Maximum Payment, for an average PF that is equal or greater than 80 on average. It shall vary on a straight-line basis between each of the 40, 50 and 80 thresholds.

If the PF for the last financial period of the Reference Period is equal to 0, no payment shall be due.

Vallourec communicates annually on the PF achievement rate for the previous year.

7.2.1.2.3.9 Special compensation of the Chairman and members of the Management Board

As recommended in the AFEP-MEDEF Code, the Supervisory Board may, on the recommendation of the ACGC, award special compensation to the Chairman and/or the members of the Management Board if very specific circumstances so justify (for example, due to their importance to the Group, the involvement they require and the difficulties they present). Its decision must be substantiated. The amount of this special compensation may not under any circumstance exceed the amount of the fixed annual monetary portion of the interested party.

Pursuant to Article L.225-82-2 of the French Commercial Code, the payment of the elements of special compensation to the Chairman and to the members of the Management Board is subject to approval by the Ordinary Shareholders' Meeting of the elements of compensation of the individual concerned under the terms provided for in Article L.225-100 of the French Commercial Code.

7.2.1.2.3.10 Signing bonus of the Chairman and members of the Management Board

As recommended in the AFEP-MEDEF Code, the Supervisory Board may, on the recommendation of the ACGC, award a new Chairman or a new member of the Management Board coming from an outside company a signing bonus in order to offset the loss of benefits previously enjoyed by the executive. Such compensation must be explained and made public at the time it is decided.

7.2.1.3 The policy of the Supervisory Board in terms of the compensation and benefits for the Chairman and members of the Supervisory Board

7.2.1.3.1 GENERAL PRINCIPLES OF THE BOARD POLICY ON THE COMPENSATION AND BENEFITS FOR THE CHAIRMAN AND MEMBERS OF THE SUPERVISORY BOARD

Members of the Supervisory Board

Members of the Supervisory Board only receive attendance fees for the performance of their duties.

These fees are distributed by the Supervisory Board among its members, on the proposal of the ACGC, from the annual budget for attendance fees authorized by the Ordinary Shareholders' Meeting. The amount of this budget must be adapted to the level of responsibilities undertaken by the members of the Board and the amount of time they must spend on their duties.

Members of the Supervisory Board receive a portion of their attendance fees as a fixed amount and another portion based on their attendance at Board meetings and meetings of Committees of which they are members.

Chairman, Vice-Chairman, and Lead Member of the Supervisory Board

Only the Chairman of the Supervisory Board receives a fixed annual compensation. This is justified by the degree of involvement in the Group's affairs of the Board Chairman as he performs duties and procedures which far surpass merely attending Board and Committee meetings.

The Lead Member, who is also the Vice-Chairman, receives an additional fixed annual amount of attendance fees for his or her duties as lead member and participation in Group Committees in this capacity.

The Chairman of the Supervisory Board, along with the other members, is not allocated any options, performance shares or termination payments of any kind.

Members of the Supervisory Board are required to personally be a shareholder of the Company throughout the entire term of their office, under the conditions set by the bylaws and internal regulations of the Board, for a minimum of 500 Vallourec shares [(1)].

7.2.1.3.2 COMPONENTS OF COMPENSATION AND BENEFITS OF THE CHAIRMAN AND MEMBERS OF THE SUPERVISORY BOARD

Participation at the meetings of the Supervisory Board

The total amount for attendance fees that the Supervisory Board is authorized to divide among its members in 2019 is recorded under the annual budget for attendance fees of €650,000 authorized by the Ordinary Shareholders' Meeting of 28 May 2014 (thirteenth resolution).

As recommended by the AFEP-MEDEF Code, which requires that the fraction of attendance fees based on actual attendance be predominant in relation to the fixed portion, the fixed portion amounts to one-third of attendance fees and the variable portion based on actual attendance represents two-thirds.

The Lead Member, who is also the Vice-Chairman, receives, from the overall annual budget of €650,000, an additional fixed annual amount of attendance fees for his or her duties as Lead Member and participation in Group Committees in this capacity.

Participation in Committee meetings

The members and Chairman of each of the Committees receive, as part of the aforementioned €650,000 annual budget, additional attendance fees based on their actual attendance at meetings of these Committees.

Compensation of the Chairman

The Chairman of the Board receives a fixed annual compensation that has not changed since it was set in 2014.

(1) Starting on the day of their appointment, members of the Supervisory Board must hold at least 50 Vallourec shares. The 450 additional shares must be acquired by 31 December of the year following the year they take office, in order to allow them to use their attendance fees to acquire them. These provisions do not apply to the member representing employee shareholders and to the member representing the employees.

7.2.2 Compensation and benefits awarded to corporate officers

7.2.2.1 Compensation of members of the Management Board

The following tables show the compensation paid to members of the Management Board as it was comprised as at 31 December 2018.

A) SUMMARY OF COMPENSATION AND OPTIONS AND PERFORMANCE SHARES ALLOCATED TO EACH MEMBER OF THE MANAGEMENT BOARD (ACCORDING TO THE FORMAT OF TABLE 1 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR (*AUTORITÉ DES MARCHÉS FINANCIERS*))

The following table summarizes the compensation due and the valuation of the share subscription options and performance shares allocated for fiscal years 2017 and 2018.

In €	Fiscal year 2017	Fiscal year 2018
Philippe Crouzet, Chairman of the Management Board		
Compensation due for the fiscal year (see Part B) of paragraph 7.2.2.1 herein)	1,715,957	1,536,033
Valuation of multi-year variable compensation allocated	-	-
Valuation of options allocated during the year (see Part C) of paragraph 7.2.2.1 herein) [a]	107,350	124,460
Valuation of performance shares allocated during the year (see Part E) of paragraph 7.2.2.1 herein) [b]	321,860	389,638
TOTAL	**2,145,167**	**2,050,131**
Olivier Mallet, Chief Financial Officer		
Compensation due for the fiscal year (see Part B) of paragraph 7.2.2.1 herein)	806,870	737,754
Valuation of multi-year variable compensation allocated	-	-
Valuation of options allocated during the year (see Part C) of paragraph 7.2.2.1 herein) [a]	50,285	57,324
Valuation of performance shares allocated during the year (see Part E) of paragraph 7.2.2.1 herein) [b]	152,460	179,464
TOTAL	**1,009,615**	**974,542**

(a) *All share subscription options allocated to members of the Management Board in 2017 and 2018 are contingent upon performance conditions. Their valuation, which is shown in the table, is theoretical and results from the application of the binomial model used for the consolidated financial statements. The actual valuation is zero if the share price is equal to or less than the exercise price (€5.50 for 2018 options plans).*

(b) *All the performance shares allocated to members of the Management Board in 2017 and 2018 were subject to performance conditions. The valuation of the performance shares shown in the table is theoretical and results from the application of the binomial model used for the consolidated financial statements.*

B) SUMMARY OF COMPENSATION FOR EACH MEMBER OF THE MANAGEMENT BOARD (ACCORDING TO THE FORMAT OF TABLE 2 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

	Fiscal year 2017		Fiscal year 2018	
In €	Amounts due for the fiscal year	Amounts paid for the fiscal year	Amounts due for the fiscal year	Amounts paid for the fiscal year
Philippe Crouzet, Chairman of the Management Board				
Fixed compensation	798,000	798,000	798,000	798,000
Annual variable compensation	786,084	679,257	606,160	786,084
Multi-annual variable compensation	-	-	-	-
Article 82 payment in cash [(a)]	127,500	127,500	127,500	127,500
Extraordinary compensation	-	-	-	-
Attendance fees	-	-	-	-
Benefits in kind [(b)]	4,373	4,373	4,373	4,373
TOTAL	**1,715,957**	**1,609,130**	**1,536,033**	**1,715,957**
Olivier Mallet, Chief Financial Officer				
Fixed compensation	420,000	420,000	420,000	420,000
Annual variable compensation	307,970	266,574	238,854	307,970
Multi-annual variable compensation	-	-	-	-
Article 82 payment in cash [(a)]	73,500	73,500	73,500	73,500
Extraordinary compensation	-	-	-	-
Attendance fees	-	-	-	-
Benefits in kind [(b)]	5,400	5,400	5,400	5,400
TOTAL	**806,870**	**765,474**	**737,754**	**806,870**

(a) Amount paid in cash under the supplementary individual defined-contribution retirement plan (Article 82). 50% of the amounts are paid in the form of a contribution and 50% in cash, as explained in Section 7.2.3.2 and Section 7.4.2.3.7.

(b) The benefit in kind measured corresponds to the use of a Company car.

The principles and criteria for determining the variable monetary compensation of members of the Management Board as well as a breakdown of the benefits in kind are presented for fiscal year 2018, in the Supervisory Board report on the compensation policy for corporate officers (see Section 2.1 to Chapter 7 of the 2018 Registration Document) and for fiscal year 2017 in the Supervisory Board report on the compensation policy for corporate officers (see Section 2.1 to Chapter 7 of the 2017 Registration Document).

C) SHARE PURCHASE OR SUBSCRIPTION OPTIONS ALLOCATED DURING FISCAL YEAR 2018 TO EACH MEMBER OF THE MANAGEMENT BOARD BY VALLOUREC AND EACH GROUP COMPANY (ACCORDING TO THE FORMAT OF TABLE 4 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

Name of executive corporate officer	Plan number and date	Type of options	Valuation of options according to the method used for the consolidated financial statements	Number of options allocated during the fiscal year [(a)]	Exercise price	Exercise period
Philippe Crouzet	2018 Plan 15/06/2018	Share subscription options	€124,460	122,020 *i.e. 0.027% of the share capital* [(b)]	€5.50	From 15/06/2022 to 15/06/2026 (inclusive)
Olivier Mallet	2018 Plan 15/06/2018	Share subscription options	€57,324	56,200 *i.e. 0.012% of the share capital* [(b)]	€5.50	From 15/06/2022 to 15/06/2026 (inclusive)
TOTAL			**€181,784**	**178,220** ***i.e. 0.039% of the share capital*** **[(b)]**		

(a) The number corresponds to the factor 1, which is equivalent to the performance target. It may be increased by applying a performance factor of 2 if the performance target is exceeded.

(b) Based on share capital as at 31 December 2018, comprised of 457,987,760 shares.

The share subscription options allocated to members of the Management Board in 2018 are subject to performance conditions assessed over four years and measured based on the following two quantitative criteria:

- an internal criterion: aggregate net cash flow for the Group in 2018, 2019, 2020 and 2021 compared to the planned performance in the Group's medium-term plan for the same period (weighting 50%);
- an external criterion: Total Shareholder Return (TSR) for 2018, 2019, 2020, and 2021 compared to a panel of comparable companies (weighting 50%).

The panel of comparable companies shall be comprised of the following companies from the "Oil & Gas," "Energy" and "Steel" sectors: ArcelorMittal SA, Hunting Plc, Nippon Steel & Sumitomo Metal Corp., NOV, Salzgitter AG, Seah Steel Corp, Tenaris SA, TimkenSteel Corp, TMK, Tubacex SA, Tubos Reunidos SA, United States Steel Corp and Voestalpine AG.

The number of options definitively allocated to members of the Management Board after the performance assessment period is calculated by applying a factor which measures performance for each of the criteria to the number of options initially allocated. This factor will vary from 0 to 2. The number of options allocated will be nil below a level of performance, which corresponds to the minimum threshold; it will be 1 if the performance target was attained. If all objectives are achieved at their maximum, a factor of 2 shall be applied to the target allocation.

At the end of the performance assessment period, Vallourec will communicate the minimum and maximum thresholds to be achieved and the linear progression applied between them.

D) SHARE SUBSCRIPTION OR SHARE PURCHASE OPTIONS EXERCISED DURING 2018 BY EACH MEMBER OF THE MANAGEMENT BOARD

No members of the Management Board exercised share subscription or purchase options in 2018 under the share subscription option or purchase plans created in previous years.

E) PERFORMANCE SHARES ALLOCATED DURING FISCAL YEAR 2018 TO EACH MEMBER OF THE MANAGEMENT BOARD BY VALLOUREC AND EACH GROUP COMPANY (ACCORDING TO THE FORMAT OF TABLE 6 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

Name of executive corporate officer	Plan number and date	Number of target shares allocated during the fiscal year [(a)]	Valuation of shares according to the method used for the consolidated financial statements	Vesting date	Availability date	Performance conditions
Philippe Crouzet	2018 Plan 15/06/2018	85,260 *i.e. 0.019% of the share capital* [(b)]	€389,638	15/06/2021	15/06/2023	Yes
Olivier Mallet	2018 Plan 15/06/2018	39,270 *i.e. 0.009% of the share capital* [(b)]	€179,464	15/06/2021	15/06/2023	Yes
TOTAL		**124,530** ***i.e. 0.027% of the share capital*** **[(b)]**	**€569,102**			

(a) The number corresponds to the factor 1, which is equivalent to the performance target. It may be increased by applying a performance factor of 2 if the performance target is exceeded.

(b) Based on share capital as at 31 December 2018, comprised of 457,987,760 shares.

The performance shares allocated to members of the Management Board in 2018 are subject to performance conditions assessed over three years and measured based on the following two quantitative criteria:

- an internal criterion: reduction of costs in 2018, 2019 and 2020 compared to the planned performance in the Group's medium-term plan for the same period (weighting 50%);
- an external criterion: growth of the EBITDA margin between 2018 and 2020 compared to a panel of comparable companies (weighting 50%).

The panel of comparable companies shall be comprised of the following companies from the "Oil & Gas," "Energy" and "Steel" sectors: ArcelorMittal SA, Hunting Plc, Nippon Steel & Sumitomo Metal Corp, NOV, Salzgitter AG, Seah Steel Corp, Tenaris SA, TimkenSteel Corp, TMK, Tubacex SA, Tubos Reunidos SA, United States Steel Corp and Voestalpine AG.

The number of performance shares definitively allocated to members of the Management Board after the performance assessment period is calculated by applying a factor which measures performance for each of the criteria to the number of options initially allocated. This factor will vary from 0 to 2. The number of options allocated will be nil below a level of performance, which corresponds to the minimum threshold; it will be 1 if the performance target was attained. If all objectives are achieved at their maximum, a factor of 2 shall be applied to the target allocation.

At the end of the performance assessment period, Vallourec will communicate the minimum and maximum thresholds to be achieved and the linear progression applied between them.

F) PERFORMANCE SHARES THAT BECAME AVAILABLE DURING FISCAL YEAR 2018 FOR EACH MEMBER OF THE MANAGEMENT BOARD (ACCORDING TO THE FORMAT OF TABLE 7 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

Starting in 2013, the performance share plans shifted over to a 3+2 mechanism (previously 2+2). Consequently, the next performance shares shall become available in 2019.

Performance shares vested during fiscal year 2018 for each member of the Management Board

Name of executive corporate officer	Plan number and date	Number of shares allocated on 15/04/2015 [(a)] [(b)]	Number of shares vested on 15/04/2018	Percentage of shares vested on 15/04/2018
Philippe Crouzet	2015 Plan 15/04/2015	22,036 [(c)]	0	0%
Olivier Mallet	2015 Plan 15/04/2015	10,370	0	0%
TOTAL	**-**	**32,406**	**0**	**0%**

(a) The number corresponds to the factor 1, which is equivalent to the performance target. It may be increased by applying a performance factor of 1.33 if the performance target is exceeded.

(b) 2015 allocation adjusted following the April 2016 capital increase: eight new shares for five existing shares, i.e. a factor of 1.6.

(c) As a reminder, Philippe Crouzet gave up his allotted performance shares in 2015.

G) HISTORY OF SHARE SUBSCRIPTION OR SHARE PURCHASE OPTIONS ALLOCATED (ACCORDING TO THE FORMAT OF TABLE 8 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

The history of the share subscription or share purchase options allocated appears in Section 7.3.1.1 of this Chapter.

H) HISTORY OF PERFORMANCE SHARE ALLOCATIONS (ACCORDING TO THE FORMAT OF TABLE 9 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

The history of the performance shares allocated appears in Section 7.3.1.2 of this Chapter.

I) SHARE SUBSCRIPTION OR PURCHASE OPTIONS ALLOCATED TO THE TOP TEN EMPLOYEES WHO ARE NOT CORPORATE OFFICERS AND OPTIONS EXERCISED BY THEM (ACCORDING TO THE FORMAT OF TABLE 9 RECOMMENDED BY THE AFEP-MEDEF CODE AND THE FRENCH SECURITIES REGULATOR)

	Total number of options granted/shares subscribed or purchased	Weighted average exercise price *(in €)*	Share subscription or share purchase option plans
Options allocated during the year to the 10 Group employees to whom the largest number of options was allocated	176,000	5.50	Plan of 15 June 2018
Options exercised during the year by the 10 Group employees who purchased or subscribed for the largest number of options	-	-	-

The definitive allocation of subscription options issued under the plan put in place on 15 June 2018 is subject to conditions of performance and continuous service.

J) SUMMARY OF DEPARTURE MECHANISMS AND STATUS OF MEMBERS OF THE MANAGEMENT BOARD (ACCORDING TO THE FORMAT OF TABLE 10 RECOMMENDED BY THE AFEP-MEDEF CODE AND TABLE 11 RECOMMENDED BY THE FRENCH SECURITIES REGULATOR)

	Employment contract		Supplementary retirement plan [d]		Payments or benefits due or likely to become due in respect of termination of office or change of position [e]		Compensation for a non-compete clause [f]	
	Yes	No	Yes	No	Yes	No	Yes	No
PHILIPPE CROUZET Chairman of the Management Board *Date of first appointment: 1 April 2009* [a] *Date of appointment as Chairman of the Management Board: 1 April 2009* [a] *Date renewed: 15 March 2016* [a] *Date on which appointment ceases: 15 March 2020* [a]		○	○		○		○	
OLIVIER MALLET Member of the Management Board *Date of first appointment: 30 September 2008* [b] *Date renewed: 15 March 2016* [b] *Date on which appointment ceases: 15 March 2020* [b]	○ [c]		○		○			○

(a) At its meeting on 25 February 2009, the Supervisory Board appointed Mr. Philippe Crouzet as Chairman of the Management Board as from 1 April 2009, thereby succeeding Mr. Pierre Verluca for the remainder of Mr. Verluca's term of office, i.e. until 15 March 2012. On 22 February 2012, the Supervisory Board renewed his appointment as Chairman of the Management Board, effective from 15 March 2012 until 15 March 2016. On 29 January 2016, the Supervisory Board renewed Mr. Philippe Crouzet's appointment as Chairman of the Management Board, effective from 15 March 2016 until 15 March 2020.

(b) On 29 September 2008, the Supervisory Board appointed Mr. Olivier Mallet as member of the Management Board, with effect from 30 September 2008 until 15 March 2012. On 22 February 2012, the Supervisory Board renewed his appointment as member of the Management Board, effective from 15 March 2012 until 15 March 2016. On 29 January 2016, the Supervisory Board renewed his appointment as member of the Management Board, effective from 15 March 2016 until 15 March 2020.

(c) The employment contract is suspended throughout the Management Board member's term on the Management Board.

(d) For a description of the supplementary retirement plan, see 7.2.3.2. below.

(e) For a description of the payments or benefits that are due or that may be due as a result of a termination or change of office, see 7.2.1.2.3.8 above.

(f) For a description of the compensation for a non-compete clause, see 7.2.1.2.3.8.1 above.

7.2.2.2 Attendance fees and other compensation received by the members of the Supervisory Board and Committees in 2018

PARTICIPATION IN MEETINGS OF THE SUPERVISORY BOARD

The total amount for attendance fees that the Supervisory Board divided among its members in 2018 is recorded under the annual budget for attendance fees of €650,000 authorized by the Ordinary Shareholders' Meeting of 28 May 2014 (thirteenth resolution).

The amount of attendance fees of €33,000 per year and per member, in effect since 2010, will remain unchanged. However, in order to take into account the recommendation of the AFEP-MEDEF Code, in its November 2015 revision, which requires that the portion of the attendance fees based on actual attendance exceed the fixed portion, the Supervisory Board, at its meeting on 7 November 2013, following the recommendation of the Appointments, Compensation and Governance Committee, decided as from 1 January 2014, to set the fixed portion at €12,000 (i.e. one-third of the attendance fees) and the variable portion based on actual attendance at €21,000 (i.e. two-thirds of the attendance fees).

The structure of the Board Chairman's compensation was simplified: all components of her annual compensation that applied through the end of 2013 (attendance fees and fixed annual compensation) were aggregated, resulting in an annual fixed compensation of €320,000. This approach, which had the effect that potential variations linked to attendance were no longer taken into account, is justified by the degree of involvement in the Group's affairs of the Board Chairman as she performs duties and procedures which far surpass merely attending Board and Committee meetings.

Within the context of a review of its internal operation, the Supervisory Board of 7 November 2013 also decided to extend the role of its Vice-Chairman. This person is thus now in charge of convening the Supervisory Board and directing its discussions if the Chairman is absent, as well as upon the Chairman's request. He is also responsible for informing the Chairman of observations regarding compliance with the ethical obligations of the Board members. Following the proposal of the Appointments, Compensation and Governance Committee, the Supervisory Board Meeting of 15 December 2015 decided to allocate to the Lead Member, who also performs the duties of Vice-Chairman, an additional fixed annual amount of attendance fees of €40,000 for his duties as Lead Member, and his participation in this role at the Committee meetings.

The Chairman of the Supervisory Board, along with the other members, is not allocated any options, non-recurring compensation, performance shares or termination payments of any kind.

PARTICIPATION IN COMMITTEE MEETINGS

In 2018, the members of the Committees received, as part of the aforementioned €650,000 annual budget, additional attendance fees based on their actual attendance at meetings of these Committees, at the rate of €2,500 per meeting. The Chairman additionally collected an annual fixed portion of €12,500 pertaining to the Finance and Audit Committee, and €6,250 pertaining to the Appointments, Compensation and Governance Committee.

Attendance fees and other compensation received by the members and Non-voting Board member of the Supervisory Board (according to the format of Table 3 recommended by the AFEP-MEDEF Code and the French securities regulator)

Members of the Supervisory Board *In €*		**Amounts due and paid in 2017**	**Amounts due and paid in 2018**
Ms.	Vivienne Cox	320,000	320,000
Mr.	Pierre Pringuet	99,650	94,250
Mr.	Maria-Pilar Albiac-Murillo	30,900	33,000
Mr.	Philippe Altuzarra	40,500	40,500
Mr.	Cédric de Bailliencourt	28,800	28,800
Mr.	Olivier Bazil	17,800	N/A
	Bpifrance Participations, represented by Mr. Alexandre Ossola	50,900	55,500
Ms.	Laurence Broseta	46,700	41,300
Ms.	Pascale Chargrasse [a]	53,400	48,000
Mr.	Mickaël Dolou [b]	9,700	48,000
Mr.	José Carlos Grubisich	40,500	35,300
Mr.	Yuki Iriyama	18,500	33,000
Mr.	Jean-Jacques Morin (member since 25 May 2018)	N/A	36,892
Mr.	Henri Poupart-Lafarge	55,900	17,308
Ms.	Alexandra Schaapveld	61,300	60,500
TOTAL		**874,550**	**892,350**

(a) These amounts are in addition to the fixed and variable compensation received by Ms. Pascale Chargrasse under her employment contract with the Group.

(b) This amount is in addition to the fixed and variable compensation received in 2018 by Mr. Mickaël Dolou under his employment contract with the Group.

7.2.3 Compensation and retirement commitments of the Group's main executives

7.2.3.1 Compensation of the Group's main senior executives

The total amount of all direct and indirect compensation paid in 2018 by the Group's French and foreign companies to all of the Group's main senior executives (i.e. the members of the Executive Committee as composed in 2018, excluding the members of the Management Board) amounted to €3,946 thousand. Variable compensation represented 28% of this total.

The share subscription options and performance shares allocated during the fiscal year to the members of the Executive Committee are valued according to the method used for the consolidated financial statements, at €670 thousand.

7.2.3.2 Retirement commitments

At the recommendation of the Appointments, Compensation and Governance Committee, the Supervisory Board Meeting of 17 February 2016 authorized the establishment of a new supplementary retirement plan, to replace the supplementary mandatory Group retirement plan with defined benefits, which it authorized closing to new benefits. In accordance with Articles L.225-86 *et seq.* and Article L.225-90-1 of the French Commercial Code *(Code de commerce),* this new plan was approved by the Shareholders' Meeting of 6 April 2016.

As a result, the retirement commitments and other life annuities for corporate officers comprise, in addition to the ARRCO and AGIRC mandatory supplementary plans, a defined benefit scheme (closed), a mandatory group defined contribution scheme, and an individual defined contribution scheme for which the main characteristics are provided below.

- Main characteristics of the defined benefit retirement scheme:
  - This scheme related to Article L.137-11 of the French Social Security Code and was approved by the Shareholders' Meetings of 1 June 2006 and 4 June 2009.
  - The scheme was closed to new beneficiaries and all new rights on 31 December 2015.
  - The scheme included 20 executive managers or corporate officers, it being stated that the rights to the defined benefits retirement are random. The seniority condition was three years at the closing of the scheme on 31 December 2015.
  - The annuity did not exceed 20% of the average basic compensation for the last three years and was limited to four times the annual social security ceiling. The reference compensation is the average compensation for the last three years (excluding the variable portion) as at 31 December 2015.

- The regime is financed by contributions paid to an insurance body and is subject to a company contribution as stated in Article L.137-11 of the French Social Security Code at the rate of 24%. Financing of the scheme by Vallourec cannot be made on an individual basis.
- The estimated amount of the annual annuity that will be paid to Management Board members for this scheme during settlement of French Social Security retirement rights, calculated as at 31 December 2018, is indicated below for each member of the Management Board:

Members of the Management Board	Estimated amount of the annual annuity as at 31 December 2018
Philippe Crouzet	€106,019
Olivier Mallet	€52,950

- Main characteristics of the defined contribution mandatory group retirement scheme:
  - This scheme related to Article L.242-1 of the French Social Security Code and relating to Article 83 of the French General Tax Code and was approved by the Shareholders' Meeting of 6 April 2016.
  - This scheme is mandatory for all Vallourec Tubes and Vallourec employees and corporate officers who meet the eligibility requirements, i.e. whose gross annual compensation exceeds four times the annual social security ceiling. There is no seniority requirement. The scheme includes around fifty managers or corporate officers.
  - Vallourec's commitment is limited to payment to the insurance body of a contribution of 12% of the fixed and variable compensation that falls between five and eight times the Social Security ceiling (Tranche C). In 2018, the contribution paid each Management Board member was: €19,071.36. The contribution is partially subject to social security costs.
  - Vallourec's financial commitment is strictly limited in terms of amount and time since it can close the scheme at any time.
  - The estimated amount of the annuity that will be paid to Management Board members for this scheme during settlement of French Social Security retirement rights, calculated as at 31 December 2018, is indicated below for each member of the Management Board:

Members of the Management Board	Estimated amount of the annual annuity as at 31 December 2018 [(a)]
Philippe Crouzet	€2,513
Olivier Mallet	€2,513

(a) On the basis of retirement at 62 years of age and with a post-retirement life expectancy of 20 years.

- Main characteristics of the individual retirement scheme:
  - This mechanism, related to Article 82 of the French General Tax Code, was approved by the Shareholders' Meeting of 6 April 2016.
  - The scheme is individual and discretionary. In addition, the beneficiaries must have a three-year seniority within the Group and a gross annual compensation that exceeds eight times the annual Social Security ceiling. The scheme includes around ten senior executives or corporate officers.
  - Vallourec's commitment is limited to payment of an annual amount for retirement comprising 50% contributions made to an insurance body and 50% cash, taking into account the tax characteristics of the scheme, imposing taxation at entry.
  - In the spirit of the Macron law, the payment made under this scheme for Management Board members is subject to a performance condition: the maximum contribution is due for a year in the case of an annual bonus being awarded, calculated at 50% of the target of the bonus and no contribution is paid for an annual bonus calculated at zero. The contribution varies linearly between 0%-50%.
  - Vallourec's financial commitment is strictly limited in terms of amount and time since it can close the scheme at any time.
  - According to the applicable performance criteria and after deducting contributions, employee contributions and the relative income tax, the estimated amount of the annuity that will be paid to Management Board members for this scheme during settlement of French Social Security retirement rights, calculated as at 31 December 2018, is indicated below for each member of the Management Board:

Members of the Management Board	Estimated amount of the annual annuity as at 31 December 2018 [(a)]
Philippe Crouzet	€19,125
Olivier Mallet	€11,025

(a) On the basis of retirement at 62 years of age and with a post-retirement life expectancy of 20 years.

7.3 Executive management interests and employee profit sharing

At its meeting of 13 May 2009, the Supervisory Board approved a policy for strengthening employees' involvement in the Group's results as presented by the Management Board.

In 2018, this policy was determined during the Supervisory Board meetings of 20 February, along with the performance share and share subscription option allocation plans for managers. The Supervisory Board also determined, at its meeting on 20 February 2018, the principles of compensation for Management Board members, in the form of performance shares and share subscription options.

This information was made public in accordance with the AFEP-MEDEF Corporate Governance Code through the information provided on the Company's website on 21 February 2018 (www.vallourec.com).

Vallourec aims to supplement the compensation paid to its employees with various plans designed to involve them in sharing in the Group's performance over the long term and build a significant level of employee share ownership, in line with Vallourec's development goals. The policy will gradually be extended to all categories of Group staff worldwide, subject to and in accordance with local legislation and regulations and budgetary constraints (for example, those relating to the relationship between the number of staff in a country and the cost of implementing the policy).

Vallourec's second aim is to achieve closer convergence between the interests of Vallourec's management and those of its shareholders over the long term through the annual allocation of options and/or performance shares subject to the achievement of performance targets over several fiscal years.

These allocations have been gradually extended to a growing number of Group managers, according to a scope and volume that has been defined based on a Hay chart established at the global level. They are contingent upon:

- continuing employment within the Company; and
- the fulfillment of objective and predefined performance requirements.

Beneficiaries are encouraged, through these allocations, to make greater efforts to improve net profit and help the Group achieve the targets it has set for itself.

7.3.1 Options and performance shares

The Supervisory Board sets the maximum number of share subscription or share purchase options and performance shares, and their allocation conditions to the members of the Management Board.

The Supervisory Board also approves the maximum number of beneficiaries and the maximum number of share subscription or share purchase options and performance shares that the Management Board proposes to allocate to Group employees under the terms of a plan.

The Management Board is responsible for determining the conditions for implementing any allocations of share subscription or share purchase options and performance shares, including the identification of beneficiaries of such plans and, in the case of share subscription or share purchase options, the reference price. It is also responsible for ensuring the proper implementation of each plan and reports to the Supervisory Board, in the context of its control function.

The number of performance shares and options mentioned in Sections 7.3.1.1 and 7.3.1.2 below correspond to a factor of 1, equivalent to the performance target. Some figures have been adjusted, where necessary, to take account of the capital increase with maintenance of the Shareholders' preferential subscription rights on 3 May 2016.

Members of the Management Board are required to retain until the end of their terms of office (i) one quarter of the performance shares allocated to them under the terms of a plan and (ii) the equivalent in Vallourec shares of one quarter of the gross capital gain realized on the date of sale of the shares resulting from the options exercised. They formally agree not to hedge their risks on either options or shares resulting from the exercise of options, or on performance shares.

Furthermore, with regard to the confidential information obtained in the course of their duties, the members of the Management Board are required to comply with the provisions established by the Supervisory Board concerning the periods during which members in possession of insider knowledge may not buy, sell or take positions in the Company's shares or in any other financial instrument linked to Vallourec shares (options, warrants, etc.), i.e. the thirty (30) calendar days preceding the publications of the annual and semi-annual results and fifteen (15) calendar days preceding the publications of the first quarter and third quarter results as well as the day of publication and the following day, without prejudice to the current statutory and regulatory provisions on "insider trading".

7.3.1.1 Share subscription and/or purchase options

	2009 Plan	2010 Plan	2011 Plan	2012 Plan
Date of Shareholders' Meeting	4 June 2009	4 June 2009	4 June 2009	31 May 2012
Date of allocation by the Management Board	1 September 2009	1 September 2010	1 September 2011	31 August 2012
Number of beneficiaries when plan implemented	303	349	743	387
Total number of shares that can be subscribed, including those that can be subscribed by:	582,605	517,865	684,521	883,602
• Philippe Crouzet	49,349 i.e. 0.01% of the share capital (b)	27,149 i.e. 0.006% of the share capital (b)	21,992 i.e. 0.005% of the share capital (b)	0
• Jean-Pierre Michel	22,431 i.e. 0.005% of the share capital (b)	12,340 i.e. 0.003% of the share capital (b)	9,997 i.e. 0.002% of the share capital (b)	0
• Olivier Mallet	17,945 i.e. 0.004% of the share capital (b)	9,873 i.e. 0.002% of the share capital (b)	7,997 i.e. 0.002% of the share capital (b)	0
Percentage of the share capital that may potentially be allocated to members of the Management Board (a) (b)	0.02%	0.01%	0.009%	0%
Total number of options allocated to the 10 Group employees who are not corporate officers and to whom the largest number of options was allocated	53,848	42,706	29,072	89,631
Total potential dilution of the plan at the allocation date (b)	0.13%	0.08%	0.08%	0.20%
Date from which options may be exercised	1 September 2013	1 September 2014	1 September 2015	1 April 2017
Expiration date of exercise period	1 September 2019	1 September 2020	1 September 2021	31 August 2020
Exercise price (c)	€31.01	€42.72	€36.44	€22.21
Performance conditions	Yes (d)	Yes (e)	Yes (f)	Yes (g)
Number of shares subscribed	-	-	-	-
Total number of options canceled or expired since the allocation date	86,190	205,460	368,684	865,502
Options remaining as at 31 December 2018	496,415	312,405	315,837	18,100
Total potential dilution of the plan as at 31 December 2018 (b)	0.11%	0.07%	0.07%	0.00%

(a) Based on the composition of the Management Board as at 31 December 2018.

(b) Based on the 457,987,760 shares comprising the share capital as at 31 December 2018.

(c) Average price of the Vallourec share over the 20 trading days preceding the allocation date, without discount. Changes were made to the exercise prices to take account of the adjustments linked to the capital increase in May 2016.

(d) Performance condition: target ratio of the Group's consolidated EBITDA to consolidated revenue for the 2009, 2010 and 2011 fiscal years.

(e) Performance condition: target ratio of the Group's consolidated EBITDA to consolidated revenue for the 2010, 2011, 2012 and 2013 fiscal years.

(f) Performance condition: target ratio of the Group's consolidated EBITDA to consolidated revenue for the 2011, 2012, 2013 and 2014 fiscal years.

(g) The definitive allocation of the subscription options issued under the plan put in place on 31 August 2012 is entirely subject to conditions of performance and continuous service. For allocations to employees (other than members of the Operational Committee), performance is assessed over fiscal years 2013, 2014, 2015 and 2016 and is dependent on achieving a target ratio of the Group's EBITDA to consolidated revenue. As concerns allocations to members of the Operational Committee, performance is assessed over fiscal years 2013, 2014, 2015 and 2016, and measured based on the following four quantitative criteria: the estimated rate of return on capital employed on a consolidated basis, the growth of consolidated sales and revenue on a like-for-like basis, as well as the relative stock market performance of Vallourec shares, and the relative performance of consolidated EBITDA measured against a group of comparable companies, comprising Tenaris and TMK.

(h) The definitive allocation of subscription options issued under the plan put in place on 2 September 2013 is subject to conditions of performance and continuous service. For allocations to employees (other than members of the Operational Committee), performance is assessed over fiscal years 2014, 2015, 2016 and 2017 and is dependent on achieving a target ratio of the Group's EBITDA to consolidated revenue. As concerns allocations to members of the Operational Committee, performance is assessed over fiscal years 2014, 2015, 2016 and 2017, and measured based on the following four quantitative criteria: the estimated rate of return on capital employed on a consolidated basis, the growth of consolidated sales and revenue on a like-for-like basis, as well as the relative stock market performance of Vallourec shares, and the relative performance of consolidated EBITDA measured against a group of comparable companies, comprising Tenaris and TMK.

(i) The definitive allocation of all subscription options issued under the plan put in place on 15 April 2014 is subject to conditions of performance and continuous service. For allocations to employees (other than members of the Executive Committee), performance is assessed over fiscal years 2014, 2015, 2016 and 2017 and is dependent on achieving a target ratio of the Group's EBITDA to consolidated revenue. As concerns allocations to members of the Executive Committee, performance is assessed over fiscal years 2014, 2015, 2016 and 2017, and is measured based on the following four quantitative criteria: the estimated rate of return on capital employed on a consolidated basis, the growth of consolidated sales and revenue on a like-for-like basis, as well as the relative stock market performance of Vallourec shares, and the relative performance of consolidated EBITDA measured against a group of comparable companies, comprising Tenaris and TMK.

2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan
31 May 2012	31 May 2012	28 May 2014	28 May 2014	12 May 2017	12 May 2017
2 September 2013	15 April 2014	15 April 2015	18 May 2016	18 May 2017	15 June 2018
406	399	486	445	11	10
1,003,746	622,261	683,413	537,895	292,500	354,220
54,981 i.e. 0.012% of the share capital (b)	30,152 i.e. 0.007% of the share capital (b)	- (j)	30,145 i.e. 0.007% of the share capital (b)	95,000 i.e. 0.021% of the share capital (b)	122,020 i.e. 0.027% of the share capital (b)
24,991 i.e. 0.006% of the share capital (b)	14,159 i.e. 0.003% of the share capital (b)	14,159 (k) i.e. 0.003% of the share capital (b)	14,159 i.e. 0.003% of the share capital (b)	-	-
19,993 i.e. 0.004% of the share capital (b)	14,159 i.e. 0.003% of the share capital (b)	14,159 (k) i.e. 0.003% of the share capital (b)	14,159 i.e. 0.003% of the share capital (b)	44,500 i.e. 0.015% of the share capital (b)	56,200 i.e. 0.012% of the share capital
0.02%	0.01%	0.01%	0.013%	0.031%	0.039%
77,577	74,470	53,812	49,134	153,000	176,000
0.22%	0.14%	0.15%	0.12%	0.06%	0.08%
3 March 2018	15 April 2018	15 April 2019	18 May 2020	18 May 2021	15 June 2022
1 September 2021	15 April 2022	15 April 2023	18 May 2024	18 May 2025	15 June 2026
€27.70	€23.13	€13.57	€3.90	€6.02	€5.50
Yes (h)	Yes (i)	Yes (l)	Yes (m)	Yes (n)	Yes (o)
-	-	-	-	-	-
412,996	245,589	202,389	83,832	17,000	0
590,750	376,672	481,024	454,063	275,500	354,220
0.13%	0.08%	0.11%	0.10%	0.06%	0.08%

(j) At its meeting on 17 February 2016, the Supervisory Board formally recorded Mr. Philippe Crouzet's waiver of the share subscription options allocated during the 2015 fiscal year after the approval of the financial statements for that year. Consequently, the valuation of the share subscription options allocated in 2015 (i.e. €97,740) is nil in this table.

(k) As from the 2015 plans, the maximum factor has been 1.33, i.e. a maximum of 18,831 options.

(l) For allocations to employees (other than members of the Executive Committee), performance is assessed over fiscal years 2015, 2016, 2017, and 2018 and is dependent on achieving a target ratio of the Group's EBITDA to consolidated revenue. As concerns allocations to members of the Executive Committee, performance is assessed over four years and measured based on the following two quantitative criteria: the consolidated EBITDA for 2015, 2016, 2017 and 2018, and the growth in the EBITDA margin between 2015 and 2018 (based on a comparison between the growth of Vallourec's gross margin and the average growth in gross margin of a group of comparable companies. This group comprises the following: NSSMC, Halliburton, NOV, Schlumberger, Technip, Baker Hughes, TMK, Tenaris, Alstom, Areva, U.S. Steel, ThyssenKrupp, ArcelorMittal and Salzgitter AG).

(m) As concerns allocations to employees (excluding members of the Executive Committee), performance is assessed for the 2016, 2017, 2018 and 2019 fiscal years, and is dependent on achieving a target ratio of the Group's EBITDA to the budget. As concerns allocations to members of the Executive Committee, performance is assessed over four years and measured based on the following two quantitative criteria: the consolidated EBITDA for 2016, 2017, 2018 and 2019, and the growth in the EBITDA margin between 2016 and 2019 (based on a comparison between the growth of Vallourec's gross margin and the average growth in gross margin of a group of comparable companies. This group comprises the following: NSSMC, Halliburton, NOV, Schlumberger, Technip, Baker Hughes, TMK, Tenaris, Alstom, Areva, U.S. Steel, ThyssenKrupp, ArcelorMittal and Salzgitter AG).

(n) As concerns allocations to members of the Executive Committee, performance is assessed over four years and measured based on the following two quantitative criteria: the Free Cash Flow (FCF) for 2017, 2018, 2019 and 2020, and the change in Vallourec's TSR between 2017 and 2020 (comparison of Vallourec's TSR with that of the panel of competitors. This group comprises the following: Hunting Plc, United States Steel Corp, Nippon Steel & Sumitomo Metal Corp., Tubacex SA, Tenaris SA, Voestalpine AG, Seah Steel Corp, Tubos Reunidos SA, TimkenSteel Corp, Salzgitter AG, ArcelorMittal SA, TMK, and NOV).

(o) As concerns allocations to members of the Executive Committee, performance is assessed over four years and measured based on the following two quantitative criteria: the Free Cash Flow (FCF) for 2018, 2019, 2020 and 2021, and the change in Vallourec's TSR between 2018 and 2021 (comparison of Vallourec's TSR with that of the panel of competitors. This group comprises the following: Hunting Plc, United States Steel Corp, Nippon Steel & Sumitomo Metal Corp., Tubacex SA, Tenaris SA, Voestalpine AG, Seah Steel Corp, Tubos Reunidos SA, TimkenSteel Corp, Salzgitter AG, ArcelorMittal SA, TMK, and NOV).

After applying the adjustment terms provided for in Articles L.228-99 and R.228-91 of the French Commercial Code and in conformity with the regulations of the share subscription options and performance share plans, Vallourec's Supervisory Board, at its meeting on 2 May 2016, wished to preserve the rights of holders of performance shares and share subscription options, by ensuring that the capital increase determined on 7 April 2016 would be neutral for them. The figures below have been updated.

The value of the option plans is included in Notes 19 and 21 to the consolidated financial statements, which are found in Section 6.1 of this Registration Document.

7.3.1.2 Performance share and free share allocation plans

PERFORMANCE SHARE ALLOCATION PLANS

Date of Shareholders' Meeting
Date of allocation by the Management Board
Number of beneficiaries when plan implemented
Total number of shares that can be acquired, including those able to be acquired by [(a)]:
• Philippe Crouzet
• Jean-Pierre Michel
• Olivier Mallet
Percentage of the share capital that may potentially be allocated to members of the Management Board [(b)] [(c)]
Total number of performance shares allocated to the ten employees who are not corporate officers and to whom the largest number of shares was allocated
Total potential dilution of the plan at the date [(b)]
Performance conditions
Vesting period end-date
Total number of performance shares canceled or expired since the allocation date
Performance shares remaining as at 31 December 2018
Total potential dilution of the plan as at 31 December 2018 [(b)]

(a) Based on a factor of 1.

(b) Based on the composition of the Management Board as at 31 December 2018.

(c) Based on the capital at the end of each year.

(d) For all beneficiaries (excluding Management Board and Executive Committee members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria, assessed for 2015, 2016 and 2017: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the budget, and the Total Shareholder Return (TSR) for 2015, 2016 and 2017. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33.

e) The Supervisory Board meeting on 17 February 2016 duly noted the waiver by Mr. Philippe Crouzet of the performance shares allocated during the 2015 fiscal year after the financial statements for that year were approved. Consequently, the valuation of the performance shares allocated in 2015 (which would have otherwise been €292,199) is nil in this table.

(f) For all beneficiaries (excluding Management Board and Executive Committee members), it will be based on the ratio of consolidated EBITDA to consolidated revenue achieved by the Group in 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.25. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria, assessed for 2016, 2017 and 2018: the rate of return on capital employed on a consolidated basis (ROCE), compared to the ROCE in the budget, and the Total Shareholder Return (TSR) for 2016, 2017 and 2018. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.33.

2015 Plan	2016 Plan	2017 Plan	2018 Plan
28 May 2014	28 May 2014	12 May 2017	12 May 2017
15 April 2015	18 May 2016	18 May 2017	15 June 2018
497	537	553	531
388,593	610,001	820,275	842,630
- (e)	22,036 (g) i.e. 0.005% of the share capital	66,500 i.e. 0.015% of the share capital	85,260 i.e. 0.019% of the share capital
10,370 (i) i.e. 0.002% of the share capital	10,370 (g) i.e. 0.002% of the share capital	-	-
10,370 (i) i.e. 0.002% of the share capital	10,370 (g) i.e. 0.002% of the share capital	31,500 i.e. 0.007% of the share capital	39,270 i.e. 0.09% of the share capital
0.004%	0.009%	0.021%	0.027%
33,888	43,599	124,400	122,100
None	None	None	None
Yes (d)	Yes (f)	Yes (h)	Yes (i)
15 April 2018 or 2019	18 May 2019 or 2020	18 May 2020 or 2021	15 June 2021 or 2022
255,639	90,265	56,510	7,400
132,954	519,736	763,765	835,230
None	None	None	None

(g) Number of shares adjusted following the 2016 capital increase (ratio of 1.6 new shares for each existing share).

(h) For all beneficiaries (excluding members of the Management Board and Executive Committee), this will depend on cost reduction in 2017, 2018 and 2019, in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free cash flow (FCF) for 2017, 2018 and 2019. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 1.4. For members of the Management Board and Executive Committee, the definitive allocation will depend on the following two criteria: reducing costs in 2017, 2018 and 2019, in comparison to the Group's planned performance in the medium-term plan over the same period and the growth of the EBITDA margin between 2017 and 2019 in comparison to a panel of comparable companies. The actual number is determined by applying a performance factor, calculated for the two years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.

(i) For all beneficiaries, this will depend on cost reduction in 2018, 2019, and 2020 in comparison to the planned performance in the Group's medium-term plan for the same period, and on the Group's cumulative Free cash flow (FCF) for 2017, 2018 and 2019. The actual number is determined by applying a performance factor, calculated for the three years concerned, to the theoretical number of shares allocated. This factor may range from 0 to 2.

After applying the adjustment terms provided for in Articles L.228-99 and R.228-91 of the French Commercial Code and in conformity with the regulations of the share subscription options and performance share plans, Vallourec's Supervisory Board, at its meeting on 2 May 2016, wished to preserve the rights of holders of performance shares and share subscription options, by ensuring that the capital increase determined on 7 April 2016 would be neutral for them. The figures below have been updated.

INTERNATIONAL PERFORMANCE SHARE ALLOCATION PLANS FOR EMPLOYEES

	2-4-6 Plan (2014)
Date of Shareholders' Meeting	31 May 2012
Date of allocation by the Management Board	15 April 2014
Number of beneficiaries when plan implemented	21,677
Maximum total number of performance shares	208,100
of which maximum total number of performance shares allocated to members of the Management Board (as composed when plan implemented)	0
Number of executive corporate officers concerned	0
Maximum total number of performance shares allocated to the 10 employees who are not corporate officers and to whom the largest number of shares was allocated	100
Potential dilution	None
Performance condition	*Ratio of consolidated EBITDA to consolidated revenue (2014, 2015 and 2016)*
Vesting period	3 to 4 years
Holding period	0 to 2 year(s)
Total number of performance shares canceled or expired since the allocation date	N/A
Performance shares as at 31 December 2018	None (plan expired 16 April 2018)

FREE SHARE ALLOCATION PLANS

Free share allocation plans (without performance conditions) have been implemented only under the terms of the Value employee share ownership offers (see Section 7.3.3 "Employee share ownership" below), offered every year since 2008, and for the sole benefit of employees and those with similar rights who are non-French residents for tax purposes of certain Group companies, instead of the employer matching contribution granted to other employees and those with similar rights of the Vallourec Group's French companies. No Value operation was implemented in 2018.

	"Value 14" Plan	"Value 15" Plan	"Value 16" Plan	"Value 17" Plan
Date of Shareholders' Meeting	28/05/2014	28/05/2015	06/04/2016	12/05/2017
Date of allocation by the Management Board	16/12/2014	15/12/2015	14/12/2016	14/12/2017
Number of beneficiaries when plan implemented	768	348	255	265
Total number of free shares	6,336	2,744	3,344	3,409
of which total number of shares allocated free of charge to members of the Management Board (when plan implemented)	0	0	0	0
Number of executive management members concerned	0	0	0	0
Total number of shares allocated free of charge to the 10 employees who are not corporate officers and to whom the largest number of shares was allocated	100	100	100	150
Potential dilution	None	None	None	None
Performance conditions	None	None	None	None
Vesting period	4.6 years	4.6 years	4.6 years	4.6 years
Holding period	0	0	0	0
Number of shares allocated free of charge, canceled since their allocation	1,386	256	201	76
Free shares as at 31 December 2018	4,950	2,488	3,143	3,333

The valuation of performance share and free share allocation plans appears in Notes 19 and 21 to the consolidated financial statements in Section 6.1 of this Registration Document.

7.3.2 Profit sharing, incentive and savings plans

Profit sharing and incentive plans

Most Group companies have put in place profit sharing and incentive plans that involve the employees in the Company's performance, based on the current income/revenue ratio.

The amounts paid under these plans during the last five fiscal years are as follows:

In € million	2014	2015	2016	2017	2018
	18.9	21.43	18.72	21.67	15.57

Company savings plan

The Group formed a Company savings plan (*plan d'épargne d'entreprise* – PEE) in France in 1989, to help employees build up capital over the medium and long term. Since 2005, these arrangements have been supplemented by the implementation, by agreement, of a collective retirement savings plan (*plan d'épargne retraite collectif* – PERCO).

Employees' voluntary payments are topped up by the Company in accordance with a scale updated each year in relation to the Group's net profit.

The amounts paid by way of employer matching contribution over the last five fiscal years were as follows:

	2014		2015		2016		2017		2018	
In € million	PEE	PERCO	PEE	PERCO	PEE	PERCO	PEE	PERCO	PEE	PERCO
	4.5 (a)	0.8 (a)	3.7 (b)	0.9 (b)	3.6 (c)	0.6 (c)	1.2 (d)	0.2 (d)	2.1	0.4

(a) *Including €1,560,675.87 for the Value 14 operation.*

(b) *Including €728,133.70 for the Value 15 operation.*

(c) *Including €244,632.55 for the Value 16 operation.*

(d) *Including €234,043.88 for the Value 17 operation.*

7.3.3 Employee share ownership

Each year between 2008 and 2017, the Group offered an international employee share ownership plan in its main countries of operation, called Value, followed by the last two figures of the year of its roll-out (for a description of the plans from 2008 to 2013, see Section 6.3.3 "Employee share ownership" in the 2011 Registration Document and Section 7.3.3 "Employee share ownership" in the 2012, 2013, 2014, 2015, 2016, and 2017 Registration Documents).

The 10 international employee share ownership plans offered between 2008 and 2017 have proved highly successful given their average subscription rate of 63.2% and raised employee share ownership from 0.16% as at 31 December 2007, to 3.70% as at 31 December 2018. Through their significant subscription, Vallourec believes its employees have demonstrated their loyalty to the Group, as well as their confidence in Vallourec's strategy and future. Against this backdrop, the Supervisory Board welcomed Ms. Pascale Chargrasse as a member of the Supervisory Board representing employee shareholders on 13 December 2010. Ms. Pascale Chargrasse's office was renewed for a four-year term by the Shareholders' Meeting on 28 May 2015.

These plans have enabled the Group to achieve the three objectives it had set for each of these operations:

- to involve as many employees as possible in the Group's performance;
- to strengthen "Group spirit", the cornerstone of its culture; and
- to develop a long-term relationship with employees that will help Vallourec to maintain a stable shareholder base.

Details of the terms and conditions of the Value 12, Value 13, Value 14, Value 15, Value 16 and Value 17 plans are provided in Note 19 to the consolidated financial statements in Section 6.1 of the corresponding Registration Documents.

7.4 Supervisory Board Report on 2018 compensation for corporate officers

This report was established in application of Articles L.225-82-2 and L.225-100 of the French Commercial Code with a view toward the vote of shareholders, gathered at the Shareholders' Meeting of 23 May 2019, on the fixed, variable and special components comprising the total compensation and benefits paid or allocated for the fiscal year ended 31 December 2018 to Mr. Philippe Crouzet, Chairman of the Management Board, and Mr. Olivier Mallet, member of the Management Board, and to Ms. Vivienne Cox, Chairman of the Supervisory Board.

The compensation and benefits of members of the Management Board and the Chairman of the Supervisory Board are determined by the Supervisory Board, at the proposal of its Appointments, Compensation and Governance Committee (the "ACGC"), with the aim of having such compensation seen as fair and balanced by both shareholders and employees.

7.4.1 Governance regarding the compensation and benefits policy for corporate officers

The compensation of members of the Management Board and the Chairman of the Supervisory Board is reviewed each year in accordance with the policy on compensation and benefits applicable to corporate officers. This policy, and the corresponding governance, are presented in the corporate governance report established in application of Article L.225-68 of the French Commercial Code, in conformity with Article L.225-82-2 of said Code.

7.4.2 Compensation of members of the Management Board

7.4.2.1 General principles

The compensation of the Management Board members presented below corresponds to all of the fixed, variable and special elements comprising the total compensation and benefits paid or allocated for 2018.

7.4.2.2 Status of members of the Management Board

The Management Board is comprised of two members as at 1 January 2019:

- Mr. Philippe Crouzet, Chairman of the Management Board, who does not have an employment contract;
- Mr. Olivier Mallet, who holds an employment contract for which performance was suspended during his term as a member of the Management Board.

Moreover, Mr. Philippe Crouzet and Mr. Olivier Mallet respectively hold 71,874 and 30,061 Vallourec shares.

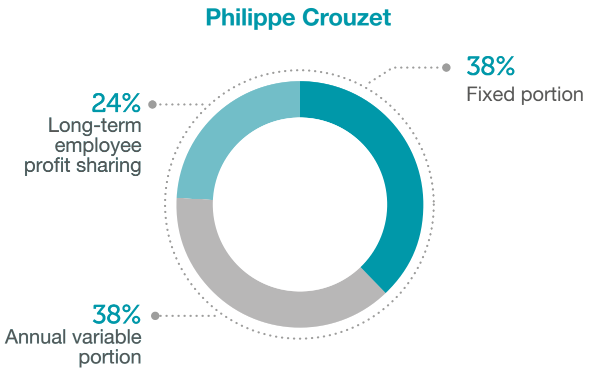
7.4.2.3 Components of Management Board members' compensation and benefits

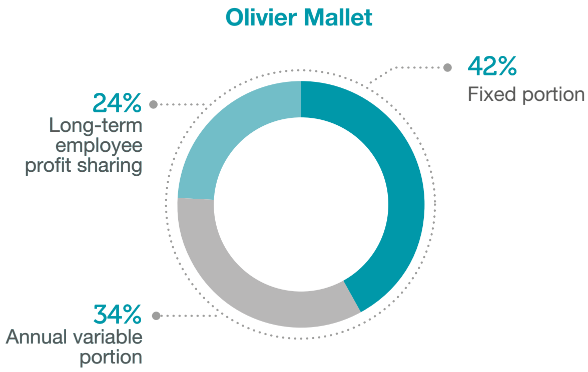
7.4.2.3.1 RESPECTIVE WEIGHT OF THE COMPONENTS OF MANAGEMENT BOARD MEMBERS' COMPENSATION

In accordance with the compensation policy, the weighting for each of these three components of compensation and benefits of any kind (fixed portion, annual variable portion and long-term instruments) is one third, provided that the amount of the variable portion is integrated in the target and the medium- and long-term incentive equity instruments are valued at their carrying amount for target achievement. In recent years, adverse changes in the fair value of these instruments, however, has not made it possible to ensure this balance.

In 2017, the ACGC decided to gradually return to a value for the allocation of performance shares and stock options to the Management Board representing one third of the total of the three components of compensation and benefits (fixed, variable and long-term incentive instruments for a performance on-target).

As such, the Board, based on the ACGC's proposal, decided that for 2018 the volume of performance shares and stock options allocated to the Management Board would represent a target of approximately 25% of the total of those three components based on the estimated IFRS value at the allocation date. At the target, the respective weight of each of these elements was as follows:





7.4.2.3.2 FIXED PORTION

In accordance with the compensation policy, the Supervisory Board, having noted at the beginning of 2018 that:

- the responsibilities of the Management Board members had not changed, and
- that an examination of the compensation surveys did not uncover any significant imbalance compared to the first quartile of the comparison sample,

decided not to change the fixed portion of the two Management Board members in 2018.

Therefore:

- **the fixed portion for Mr. Philippe Crouzet,** which was brought to €798,000 in 2014, remains unchanged; and
- **the fixed portion for Mr. Olivier Mallet,** which was brought to €420,000 in 2014, remains unchanged.

With regard to the general salary increases of French employees between 2011 and 2018, the changes in the fixed portions for members of the Management Board over the same period seem moderate, as the table below attests.

Change in the fixed compensation of French employees of the Group and members of the Management Board for the period 2011-2018 for the full year

Members of the Management Board	2011	2012	2013	2014	2015	2016	2017	2018	Total change
Philippe Crouzet	€760,000	€760,000	€760,000	€798,000	€798,000	€798,000	€798,000	€798,000 i.e. 0%	+5% over the period
Olivier Mallet	€375,000	€400,000	€400,000	€420,000	€420,000	€420,000	€420,000	€420,000 i.e. 0%	+12% over the period
Total salary increase budget for the Group's employees (2011 to 2018 budgets)									+16.3% over the period

7.4.2.3.3 VARIABLE PORTION

The variable portion corresponds to a percentage of the fixed portion. It provides for minimum thresholds, below which no payment is made, target levels when the objectives set by the Supervisory Board are met, and maximum levels when target objectives have been exceeded.

For fiscal year 2018, the variable portions of the Management Board members changed in terms of their structure, as stated hereafter, while the target and maximum levels remained unchanged. Accordingly, in 2018 Mr. Philippe Crouzet's variable portion could vary from 0 to 100% of his target fixed portion and reach 135% of this same fixed portion in the event that maximum objectives were attained. For Mr. Olivier Mallet, the 2018 variable portion could vary from 0 to 75% of their target fixed portions and attain 100% in the event that maximum objectives were achieved. In summary, the elements of monetary compensation of the members of the Management Board were as follows:

In €	**Philippe Crouzet** **Chairman of the Management Board**	**Olivier Mallet** **Member of the Management Board**
Fixed portion	798,000	420,000
Target variable portion *As a % of fixed portion*	100%	75%
Maximum variable portion *As a % of fixed portion*	135%	100%

The 2018 variable portions were contingent on the achievement of several precise and previously established objectives of a quantifiable or qualitative nature, for which the minimum, target and maximum thresholds were set by the Supervisory Board, after an in-depth examination by the ACGC.

For 2018, the Supervisory Board decided to determine the Management Board's objectives using the same three fundamental components that were used for the Group in 2017, adding the criterion of Quality into operating performance, which is of major interest to the Group, in an effort to restore economic balance to the Company in the short term:

- three objectives linked to the Group's financial performance:
  - EBITDA,
  - Cost reduction as part of the competitiveness plan,
  - PRI ("Payables Receivables Inventories") as part of the control of working capital requirements;
- two objectives linked to operating performance:
  - Continued roll-out of the new structure,
  - Quality through a reduction of customer claims;
- three objectives linked to CSR issues:
  - TRIR: injury rate without lost time per million hours worked,
  - LTIR: injury rate with lost time per million hours worked,
  - the Group share of industrial waste subject to a physical or heat rehabilitation, excluding any landfill waste, including Vallourec Tianda (in %).

In 2018, quantifiable objectives (financial and safety) represented 75% of the target variable portion of Mr. Philippe Crouzet and Mr. Olivier Mallet:

- the share of financial performance objectives was 60% of the variable target share (identical to 2017);
- the portion of social performance objectives represented 15% of the target variable portion (identical to 2017).

In view of the results achieved, the variable portions of each Management Board member for the 2018 fiscal year were set as follows:

2018 variable portion	Philippe Crouzet	Olivier Mallet
Structure and level of the variable portion *(expressed as a percentage of the fixed portion)*	Variable portion: 100% if the objectives set by the Board are achieved (target), and 135% maximum for exceptional performance	Variable portion: 75% if the objectives set by the Board are achieved (target), and 100% maximum for exceptional performance
FINANCIAL PERFORMANCE OBJECTIVES	Weight in target variable portion: 60%	Weight in target variable portion: 45%
EBITDA	This criterion varied from 0 to 20% if the target was attained and could be established at a maximum of 27%	This criterion varied from 0 to 15% if the target was attained and could be established at a maximum of 20%
The rate of achievement for this indicator is	20.69%	15.52%
Competitiveness/ Cost reduction plan	This criterion varied from 0 to 20% if the target was attained and could be established at a maximum of 27%	This criterion varied from 0 to 15% if the target was attained and could be established at a maximum of 20%
The rate of achievement for this indicator is	15.59%	11.69%
"PRI" performance plan	This criterion varied from 0 to 20% if the target was attained and could be established at a maximum of 27%	This criterion varied from 0 to 15% if the target was attained and could be established at a maximum of 20%
The rate of achievement for this indicator is	8.55%	6.42%
Total calculated in € of financial performance objectives	**€357,743**	**€141,246**
OPERATIONAL PERFORMANCE OBJECTIVES	Weight in target variable portion: 25%	Weight in target variable portion: 18.75%
Continued roll-out of the new structure	This criterion varied from 0 to 20% if the target was attained and could be established at a maximum of 27%	This criterion varied from 0 to 15% if the target was attained and could be established at a maximum of 20%
The rate of achievement for this indicator is	15.00%	11.25%
Quality	This criterion varied from 0 to 5% if the target was attained and could be established at a maximum of 6.75%	These criteria varied from 0 to 3.75% from the target, and could be established at a maximum of 5%
The rate of achievement for this indicator is	1.85%	1.39%
Total calculated in € of operational performance objectives	**€134,463**	**€53,088**
CSR OBJECTIVES	Weight in target variable portion: 15%	Weight in target variable portion: 11.25%
Safety (TRIR)/(LTIR) [(a)]	These criteria varied from 0 to 10% from the target, and could be established at a maximum of 13.5%	These criteria varied from 0 to 7.5% from the target, and could be established at a maximum of 10%
The rate of achievement for these indicators is	7.53%	5.60%
Group share of industrial waste reclaimed	These criteria varied from 0 to 5% from the target, and could be established at a maximum of 6.75%	These criteria varied from 0 to 3.75% from the target, and could be established at a maximum of 5%
The rate of achievement for these indicators is	6.75%	5.00%
Total calculated in € of CSR performance objectives	**€113,954**	**€44,520**
Percentage of the variable portion in relation to the target variable portion	**75.96%**	**75.83%**
Variable portion as a percentage of the fixed portion of compensation	**75.96%**	**56.87%**
VARIABLE PORTION CALCULATED IN €	**€606,160**	**€238,854**

(a) The safety objective is measured based on the results of the Lost Time Injury Rate (LTIR) and Total Recordable Injury Rate (TRIR), which measure, respectively, the number of accidents, with work stoppage, per million hours worked, and the injury rate per million hours worked.

The monetary variable portion of Management Board members reflects the performance of the Management Board in relation to the objectives that were set in terms of financial, operational and CSR performance. The Supervisory Board, at the recommendation of the ACGC, also took the Group's overall position into account in its assessment of operational performance, and in particular the drop in the stock price in late 2018. To that end, the Supervisory Board considers the rate of achievement (approximately 76%) in relation to the target variable portion, clearly down from last year's rate of achievement (which was 98.5%), to be balanced.

- The Supervisory Board wishes to stress that Vallourec's financial performance has clearly improved:
  - profitability continued to improve in 2018, with strong growth in revenue and EBITDA, as well as a positive cash flow in the fourth quarter of 2018, for the first time since 2015;
  - under the Transformation Plan, in 2016 the Group had announced a gross savings objective of €400 million over a four-year period (2016-2020). This objective was exceeded two years early, with cumulative gross savings of €445 million generated by the end of 2018, €130 million of which was in 2018;
  - net PRI represented 94 days of sale as at the end of 2018, compared with an exceptionally low number of 84 days at the end of 2017.
- In terms of operational performance:
  - Vallourec has continued to roll out its most competitive production routes, in particular VSB (Brazil) and Tianda (China), which now represent approximately 50% of the total rolling capacity, compared to approximately 30% in 2014, while Europe represents 25% of the total rolling capacity, compared to 45% in 2014. The Group has recorded continued growth in the use of new routes, which offers a major change in competitiveness in the context of the recovery of the international Oil & Gas markets;
  - the quality objective in particular has been achieved.
- As concerns safety and environmental footprint objectives, safety targets were not fully achieved, while environmental goals were. Despite the success of the plan to prevent the most serious safety risks (there were no fatal accidents in 2018), the threshold TRIR target (accidents without lost time) was not achieved. The LTIR (accidents with lost time) threshold target was achieved. The waste reprocessing objective was also achieved. The Group continues to consider safety and respect for the environment to be fundamental issues for its stakeholders and for Vallourec's image.

Pursuant to Article L.225-82-2 of the French Commercial Code, payment of the variable compensation to the Chairman and members of the Management Board is subject to approval by the Ordinary Shareholders' Meeting of 23 May 2019 of the compensation components of the individual concerned under the terms provided for in Article L.225-100 of the French Commercial Code.

7.4.2.3.4 LONG-TERM INCENTIVE EQUITY INSTRUMENTS

7.4.2.3.4.1 Performance shares and options allocated in 2018

In 2018, the Supervisory Board thus authorized the renewal of:

- for the twelfth consecutive year, a plan to allocate, subject to continuous service and performance conditions, a target number of 842,630 performance shares, to benefit 529 managers and executives and the two members of the Management Board, under the twenty-seventh resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017;
- for the twelfth consecutive year, a plan to allocate, subject to continuous service and performance conditions, a target number of 354,220 share subscription options, to benefit eight managers and two members of the Management Board, under the twenty-sixth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017.

The Supervisory Board, in conformity with its compensation policy and market practices, decided that for the allocation of performance shares and stock options to the Management Board it would gradually return to a target performance value that represents approximately one third of the total of the three components of compensation and benefits (fixed portion, variable portion and long-term incentive instruments). For 2018, the Supervisory Board set this allocation value at 25% of the total of the three components of compensation and benefits, which led it to increase the number of performance shares and options allocated.

The number of performance shares allocated by the Supervisory Board in 2018 was 85,260 for Mr. Philippe Crouzet and 39,270 for Mr. Olivier Mallet for target performance (corresponding to a factor of 1, as described below).

The number of options allocated by the Supervisory Board in 2018 was 122,020 for Mr. Philippe Crouzet and 56,200 for Mr. Olivier Mallet for target performance (corresponding to a factor of 1, as described below).

Overall, representing 0.26% of share capital as at 31 December 2018, the portion allocated to members of the Management Board was set at 25.3% of the total allocations, and 0.066% of share capital.

The **performance shares** allocated to members of the Management Board in 2018 are subject to performance conditions assessed over three years and measured based on the following two quantifiable criteria:

- an internal criterion: reduction of costs in 2018, 2019 and 2020 compared to the planned performance in the Group's medium-term plan for the same period (50% weighting);
- an external criterion: growth of the EBITDA margin between 2018 and 2020 compared to a panel of comparable companies (50% weighting).

The panel of comparable companies shall be comprised of the following companies from the "Oil & Gas," "Energy" and "Steel" sectors: ArcelorMittal SA, Hunting Plc, Nippon Steel & Sumitomo Metal Corp, NOV, Salzgitter AG, Seah Steel Corp, Tenaris SA, TimkenSteel Corp, TMK, Tubacex SA, Tubos Reunidos SA, United States Steel Corp, and Voestalpine AG.

The number of performance shares definitively allocated to the Chairman and member of the Management Board following the performance assessment period will be calculated by applying a factor that measures the performance for each of the criteria to the number of performance shares initially allocated. This allocation factor will vary from 0 to 2 under the following conditions:

- absolute internal criterion based on cost reduction (F1): factor 1 would correspond to achieving the medium-term plan objectives during the performance vesting period (the "F1 Planned Performance"). It would be 0 if the performance achieved was 2 or more points less than the F1 Planned Performance, and 2 if the performance achieved was 2 or more points greater than the F1 Planned Performance. A linear progression will be applied between limits;
- external relative criterion based on the growth of the EBITDA margin (F2): factor 1 would correspond to growth of the EBITDA margin that is equal to the median growth of the gross margin of the panel (the "Panel Performance"). It would be 0 if the performance achieved was 2 or more points less than the Panel Performance, and 2 if the performance achieved was 2 or more points greater than the Panel Performance. A linear progression will be applied between limits.

The **stock subscription options** allocated to members of the Management Board in 2018 are subject to performance conditions assessed over four years and measured based on the following two quantifiable criteria:

- an internal criterion: aggregate net cash flow for the Group in 2018, 2019, 2020 and 2021 compared to the planned performance in the Group's medium-term plan for the same period (weighting 50%);
- an external criterion: Total Shareholder Return (TSR) for 2018, 2019, 2020 and 2021 compared to a panel of comparable companies (weighting 50%).

The panel of comparable companies shall be comprised of the following companies from the "Oil & Gas," "Energy" and "Steel" sectors: ArcelorMittal SA, Hunting Plc, Nippon Steel & Sumitomo Metal Corp, NOV, Salzgitter AG, Seah Steel Corp, Tenaris SA, TimkenSteel Corp, TMK, Tubacex SA, Tubos Reunidos SA, United States Steel Corp, and Voestalpine AG.

The number of options that were definitively allocated to the Chairman and members of the Management Board following the vesting period will be calculated by applying a factor that measures the performance for each of the criteria to the number of options initially allocated. This factor will vary from 0 to 2 under the following conditions:

- absolute internal criterion based on the aggregate free cash flow of the Group (F1): factor 1 would correspond to achieving the medium-term plan objectives during the performance vesting period (the "F1 Planned Performance"). It would be zero if the performance achieved was less than 70% of the F1 Planned Performance, and 2 if the performance achieved was greater or equal to 120% of the F1 Planned Performance. A linear progression will be applied between limits;
- external relative criterion based on the Total Shareholder Return (TSR) (F2): factor 1 would correspond to performance between the 5th and 6th deciles of the panel of comparable companies. It would be zero if the performance achieved was less than the 4th decile of the panel; it would be 0.8 if the performance achieved was ranked in the 5th decile of the panel and 2 if the performance achieved was greater than the 8th decile of the panel. A linear progression will be applied between limits.

The confidentiality of information relating to both internal criteria prevents the disclosure of the targets and the minimum and maximum thresholds. But these values, between which a linear progression will have been applied, will be communicated following the performance assessment period.

Within the set of performance objectives for performance shares and options, the external criteria represent 50%.

At the end of the performance assessment period, Vallourec will communicate the minimum and maximum thresholds to be achieved and the linear progression applied between them.

7.4.2.3.4.2 Performance shares vested in 2018

The performance assessment period for the performance share allocation plan, which began on 15 April 2015, ended on 15 April 2018. The shares allocated under this plan, under the twentieth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 28 May 2014, were subject to the following performance conditions:

- the estimated rate of return on capital employed on a consolidated basis (ROCE) for 2015, 2016, and 2017 compared with the planned performance envisaged in the medium-term plan for 2015, 2016, and 2017 (50% weighting): the result for this criterion was 0;
- the Total Shareholder Return (TSR) for 2015, 2016, and 2017 (50% weighting); using the following panel: NSSMC; Halliburton, NOV, Schlumberger, Technip, Baker Hughes, TMK, Tenaris, Alstom, Areva, U.S. Steel, ThyssenKrupp, ArcelorMittal, Salzgitter AG: the result for this criterion was 0.

After applying these strict conditions, the members of the Management Board did not acquire any performance shares:

2015 performance share plan Members of the Management Board	**Philippe Crouzet**	**Olivier Mallet**	**Total**
Number of shares allocated on 15 April 2015 (a)	22,036 (b)	10,370	32,406
Number of shares vested on 15 April 2018 after performance conditions applied	0	0	0
Percentage of shares vested on 15 April 2018 compared to the number of shares allocated on 15 April 2015	0%	0%	0%

(a) Number updated following the capital adjustment made in 2016 of eight new shares per five existing shares, i.e. 1.6.

(b) Note, Mr. Philippe Crouzet waived his 2015 performance shares.

The Supervisory Board considers that the performance criteria that apply to performance shares allocated to the members of the Management Board are correlated to the medium and long-term evolution of the Group's overall performance and results.

Members of the Management Board are required to retain until the end of their terms of office (i) one quarter of the performance shares allocated to them under the terms of a plan and (ii) the equivalent in Vallourec shares of one quarter of the gross capital gain realized on the date of sale of the shares resulting from the options exercised. Moreover, they agree not to use hedging instruments in connection with the exercise of options, selling shares resulting from the exercise of options, or selling performance shares.

7.4.2.3.4.3 Subscription options vested in 2018

The performance assessment period for the subscription option plan, which began on 2 September 2013, ended on 2 March 2018. The subscription options allocated under this plan, under the fourteenth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 31 May 2012, were subject to the following performance conditions for 2014, 2015, 2016, and 2017:

- for 40% of the options allocated, the estimated rate of return on capital employed on a consolidated basis: the result for this criterion is 0;
- for 30% of the options allocated, the growth of consolidated sales and revenue on a like-for-like basis; the result for this criterion was 25.9%;
- for 15% of the options allocated, the performance relating to the Vallourec share: the result for this criterion is 0;
- for 15% of the options allocated, the Group's consolidated EBITDA: the result for this criterion is 0.

The performance of the last two indicators was measured in comparison to those of a panel of comparable companies that included at least Tenaris and TMK.

After applying these strict conditions, the number of options that were vested by each of the members of the Management Board was established as follows:

2013 subscription option plans Members of the Management Board	Philippe Crouzet	Olivier Mallet	Total
Number of options allocated on 2 September 2013 [(a)]	54,981	19,993	74,974
Number of options vested on 2 March 2018 after performance conditions applied	14,240	5,178	19,418
Percentage of options vested on 2 March 2018 compared to the number of shares allocated on 2 September 2013	25.9%	25.9%	25.9%

(a) Adjustment following the capital increase. Initially allocated amount multiplied by 1.67.

The performance assessment period for the subscription option plan, which began on 15 April 2014, ended on 15 April 2018. The subscription options allocated under this plan, under the fourteenth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 31 May 2012, were subject to the following performance conditions:

- for 40% of the options allocated, the estimated rate of return on capital employed on a consolidated basis: the result for this criterion is 0;
- for 30% of the options allocated, the growth of consolidated sales and revenue on a like-for-like basis; the result for this criterion was 23.8%;
- for 15% of the options allocated, the relative performance of the Vallourec share: the result for this criterion is 0;
- for 15% of the options allocated, the Group's consolidated EBITDA: the result for this criterion is 0.

Performance of the last two indicators is measured in comparison to those of a panel of comparable companies including at least Tenaris and TMK.

After applying these strict conditions, the number of options that were vested by each of the members of the Management Board was established as follows:

2014 subscription option plans Members of the Management Board	Philippe Crouzet	Olivier Mallet	Total
Number of options allocated on 15 April 2014 [(a)]	30,152	14,159	44,311
Number of options vested on 15 April 2018 after performance conditions applied	7,176	3,370	10,546
Percentage of options vested on 15 April 2018 compared to the number of shares allocated on 15 April 2014	23.8%	23.8%	23.8%

(a) Adjustment following the capital increase. Initially allocated amount multiplied by 1.67.

7.4.2.3.4.4 History of past acquisitions of the Management Board

Performance shares

Allocation year	2011	2012	2013 [a]	2014	2015	2016	2017	2018
Vesting date	2013	2014	2016	2017	2018	2019	2020	2021
Number of shares allocated to the Management Board [d]	17,068	17,068	17,068	47,528 [b]	20,736 [b] [c]	42,776	98,000	124,530
Number and % of shares definitively acquired, compared to the number of shares allocated	**3,208 (i.e. 18.8%)**	**2,787 (i.e. 16.2%)**	**3,432 (i.e. 20.1%)**	**6,038 (i.e. 12.7%)**	**0 (i.e. 0%)**	**Not available**	**Not available**	**Not available**

(a) As of 2013, performance share plans have been 3+2 (three years of vesting + two years of holding) instead of 2+2.

(b) Number of shares allocated multiplied by 1.6 following the capital increase in April 2016 of eight new shares per five existing shares.

(c) The Supervisory Board meeting on 17 February 2016 duly noted Mr. Philippe Crouzet's waiver of the performance shares allocated during the 2015 fiscal year after the approval of the financial statements for that year. Consequently, the valuation of the performance shares allocated in 2015 (which would have otherwise been €292,199) is nil in this table.

(d) Including, until 2016, the allocation made to Mr. Jean-Pierre Michel as a member of the Management Board.

Share subscription options

Allocation years	2011	2012	2013	2014	2015	2016	2017	2018
Number of options allocated to the Management Board	99,962 [a] [b]	0	99,962 [a] [b]	58,469 [a] [b]	28,312 [a] [b]	58,457 [a] [b]	139,500	178,220
Number and % of options compared to the maximum number of options allocated	**39,986 [b] (i.e. 40%)**	**0**	**25,890 [b] (i.e. 25.9%)**	**13,916 [b] (i.e. 23.8%)**	**Not available**	**Not available**	**Not available**	**Not available**
Exercise price	€36.44	€22.20	€27.71	€23.13	€13.57	€3.90	€6.02	€5.50

(a) Adjustment following the capital increase. Initially allocated amount multiplied by 1.67.

(b) Including the allocation to Mr. Jean-Pierre Michel as a member of the Management Board.

7.4.2.3.5 BENEFITS IN KIND

In 2018, the Management Board members had use of a Company car. The value of this benefit in kind was unchanged compared to 2017.

7.4.2.3.6 ATTENDANCE FEES

Management Board members did not collect any compensation or attendance fees in 2018 for the corporate offices they held in direct or indirect subsidiaries of the Vallourec Group.

7.4.2.3.7 SUPPLEMENTARY RETIREMENT PLAN

The retirement scheme for corporate officers comprises a defined benefit plan (closed), a collective and mandatory defined contribution plan, and an individual defined contribution plan.

Closed defined benefit scheme (Article 39 of the French General Tax Code)

Given that the scheme was closed to all new rights as of 31 December 2015 and the compensation used as a basis for calculating the rights was set to the reference compensation at 31 December 2015, the potential rights opened individually for each of the two members of the Management Board as at 31 December 2018 are identical to the rights as at 31 December 2017 and are as follows:

Members of the Management Board	Reference compensation as at 31 December 2018	Annual potential rights for 2018 [a]	Total annual potential rights as at 31 December 2018 [b]	Limit on potential rights	Length of service conditions
Philippe Crouzet	€798,000	0%	13.50%	20%	36 months
Olivier Mallet	€420,000	0%	12.81%	20%	36 months

(a) As a percentage of the reference compensation (basic pay excluding variable portion).

(b) Limited to 20% of the average basic compensation for the last three years, excluding the variable portion and limited to four annual Social Security caps.

The Group's supplementary pension scheme has a replacement rate that remains clearly below market practice, regardless of the reference panel used.

Mandatory group defined contribution scheme (Article 83 of the French General Tax Code)

In 2018, the contribution paid for this purpose to each of the Management Board members was: €19,071.36.

This amount was in addition to the €12,357.12 for 2016 and €18,829.44 for 2017.

Individual, defined contribution scheme subject to performance criteria (Article 82 of the French General Tax Code)

The Supervisory Board has confirmed that the performance condition applicable to payment of the Management Board's contribution to the individual retirement plan for 2018 was fulfilled. The maximum contribution is due, in light of the achievement of at least 50% of the annual bonus calculated for 2018. Note: Vallourec's commitment is limited to payment of an annual amount for retirement comprising 50% contributions made to an insurance body and 50% cash, taking into account the tax characteristics of the scheme, imposing taxation at entry.

Members of the Management Board	Total amount paid for 2018	Amount of contributions paid	Amount paid in cash
Philippe Crouzet	€255,000	€127,500	€127,500
Olivier Mallet	€147,000	€73,500	€73,500

7.4.2.3.8 MECHANISMS LINKED TO TERMINATION OF THE DUTIES OF MEMBERS OF THE MANAGEMENT BOARD

In 2018, the mechanisms linked to the termination of duties of the two members of the Management Board remained the same as in 2017.

7.4.2.3.8.1 Mechanism linked to the termination of the duties of Mr. Philippe Crouzet, Chairman of the Management Board

Under the mechanism approved by the Shareholders' Meeting of 6 April 2016, Mr. Philippe Crouzet's termination package for 2018 included a termination benefit and non-compete compensation.

- No termination benefit was paid in 2018.
- No non-compete compensation was paid in 2018.

7.4.2.3.8.2 Mechanisms linked to the termination of duties of Mr. Olivier Mallet, member of the Management Board

In 2018, Mr. Olivier Mallet was eligible for severance pay under the terms of his employment contract of €95,000.

Under the mechanism approved by the Shareholders' Meeting of 6 April 2016, Mr. Olivier Mallet was eligible in 2018 for a termination benefit. No termination benefit was paid in 2018.

7.4.2.3.8.3 Performance criteria for the termination benefit of Mr. Philippe Crouzet, Chairman of the Management Board, and of Mr. Olivier Mallet, member of the Management Board

Termination package of Mr. Philippe Crouzet

Under the mechanism approved by the Shareholders' Meeting of 6 April 2016, after application of the performance conditions assessed for the three preceding fiscal years, the performance factor (PF) calculated for fiscal years 2016, 2017 and 2018 would be 26, 90 and 66, respectively.

Termination package of Mr. Olivier Mallet

Under the mechanism approved by the Shareholders' Meeting of 6 April 2016, after application of the performance conditions assessed for the three preceding fiscal years, the performance factor (PF) calculated for fiscal years 2016, 2017 and 2018 would be 26, 90 and 66, respectively.

7.4.2.3.9 SPECIAL COMPENSATION

No special compensation was paid to Mr. Philippe Crouzet, Chairman of the Management Board, or to Mr. Olivier Mallet, member of the Management Board.

7.4.2.3.10 SIGNING BONUS

No signing bonus was paid to Mr. Philippe Crouzet, Chairman of the Management Board, or to Mr. Olivier Mallet, member of the Management Board.

7.4.2.3.11 DEFERRED VARIABLE COMPENSATION

No deferred variable compensation was paid to Mr. Philippe Crouzet, Chairman of the Management Board, or to Mr. Olivier Mallet, member of the Management Board.

7.4.3 Compensation of the Chairman of the Supervisory Board

The Chairman of the Supervisory Board receives a fixed annual compensation exclusively. This is justified by the degree of involvement in the Group's affairs of the Board Chairman as she performs duties and procedures that far surpass merely attending Board and Committee meetings. The tasks and activities of the Chairman of the Supervisory Board are described in paragraph 7.1.2.5 of this chapter.

The amount of this fixed annual compensation has not changed since it was set in 2014 and in 2018 amounted to €320,000.

7.4.4 Summary of the compensation due or awarded for the fiscal year ended 31 December 2018 to each of the two Management Board members and to the Chairman of the Supervisory Board

7.4.4.1 Compensation paid or awarded for the fiscal year ended 31 December 2018 to Mr. Philippe Crouzet

Components of the compensation paid or awarded for the fiscal year ended 31 December 2018	Amount or value submitted for vote	Presentation
Fixed compensation	€798,000	Unchanged since 2014.
Annual variable compensation	€606,160	See paragraph 7.4.2.3.3 of this report for a description of the annual variable compensation.
Deferred or multi-annual variable compensation	N/A	There is no deferred or multi-annual variable compensation.
Extraordinary compensation	N/A	There is no extraordinary compensation.
Long-term incentive equity instruments	Options = €124,460	122,020 options allocated for target performance, or 0.027% of the share capital as at 31 December 2018. This allocation was authorized by the Supervisory Board meeting of 23 February 2018, and is included within the twenty-sixth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017. See paragraph 7.4.2.3.4 of this report for a description of the conditions for these options.
	Shares = €389,638	85,260 performance shares allocated for target performance, or 0.019% of the share capital as at 31 December 2018. This allocation was authorized by the Supervisory Board meeting of 23 February 2018, and is included within the twenty-seventh resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017. See Section 7.4.2.3.4 of this report for a description of the terms of these performance shares.
Attendance fees	N/A	Mr. Philippe Crouzet does not receive attendance fees for corporate offices held within the Vallourec Group.
Valuation of all benefits	€4,373	Car

Components of compensation paid or awarded during the fiscal year ended that are or were voted on by the Shareholders' Meeting under the related party agreements and commitments procedure	Amount or value submitted for vote	Presentation
Termination payment	€0	See paragraph 7.4.2.3.8.1 of this report for a description of the termination payment scheme.
Right to exercise options or receive performance shares allocated prior to departure maintained	€0	See paragraph 7.4.2.3.8.1 of this report for a description of the conditions under which this authority could be exercised.
Non-compete compensation	€0	See paragraph 7.4.2.3.8.1 of this report for a description of the non-compete compensation scheme.
Supplementary retirement plan	€146,571	See paragraph 7.4.2.3.7 of this report for a description of the supplementary retirement plan.

7.4.4.2 Compensation paid or allocated for the fiscal year ended 31 December 2018 to Mr. Olivier Mallet

Components of the compensation paid or awarded for the fiscal year ended 31 December 2018	Amount or value submitted for an advisory vote	Presentation
Fixed compensation	€420,000	Unchanged since 2014.
Annual variable compensation	€238,854	See paragraph 7.4.2.3.3 of this report for a description of the annual variable compensation.
Deferred or multi-annual variable compensation	N/A	There is no deferred variable compensation.
Extraordinary compensation	N/A	There is no extraordinary compensation.
Long-term incentive equity instruments	Options = €57,324	56,200 options allocated for target performance, or 0.012% of the share capital as at 31 December 2018. This allocation was authorized by the Supervisory Board meeting of 23 February 2018, and is included within the twenty-sixth resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017. See paragraph 7.4.2.3.4 of this report for a description of the conditions for these options.
	Shares = €179,464	39,270 performance shares allocated for target performance, or 0.009% of the share capital as at 31 December 2018. This allocation was authorized by the Supervisory Board meeting of 23 February 2018, and is included within the twenty-seventh resolution approved by the Ordinary and Extraordinary Shareholders' Meeting of 12 May 2017. See paragraph 7.4.2.3.4 of this report for a description of the terms of these performance shares.
Attendance fees	N/A	Mr. Olivier Mallet does not receive attendance fees for corporate offices held within the Vallourec Group.
Valuation of all benefits	€5,400	Car

Components of compensation paid or awarded during the fiscal year ended that are or were voted on by the Shareholders' Meeting under the related party agreements and commitments procedure	Amount or value submitted for vote	Presentation
Termination payment	€0	See paragraph 7.4.2.3.8.2 of this report for a description of the termination payment scheme.
Non-compete compensation	N/A	There is no non-compete compensation.
Supplementary retirement plan	€92,571	See paragraph 7.4.2.3.7 of this report for a description of the supplementary retirement plan.

7.4.4.3 Compensation paid or awarded for the fiscal year ended 31 December 2018 to Ms. Vivienne Cox

Components of the compensation paid or awarded for the fiscal year ended 31 December 2018	Amount or value submitted for vote	Presentation
Fixed compensation	€320,000	Amount unchanged since 2014
Annual variable compensation	N/A	There is no annual variable compensation
Deferred or multi-annual variable compensation	N/A	There is no deferred or multi-annual variable compensation
Extraordinary compensation	N/A	There is no extraordinary compensation
Long-term incentive equity instruments	N/A	There are no long-term incentive equity instruments
Attendance fees	N/A	
Valuation of all benefits	N/A	There are no benefits of any kind

Components of compensation paid or awarded during the fiscal year ended that are or were voted on by the Shareholders' Meeting under the related party agreements and commitments procedure	Amount or value submitted for vote	Presentation
Termination payment	N/A	There is no termination payment
Non-compete compensation	N/A	There is no non-compete compensation
Supplementary retirement plan	N/A	There is no supplementary retirement plan

7.5 Individual statements of executive managers

Summary of individual statements relating to the operations involving Vallourec instruments carried out by the people mentioned in Article L.621-18-2 of the French Monetary and Financial Code, during the 2018 fiscal year

Reporting party	Financial instruments	Nature of transaction	Transaction date	Unit price *(in €)*	Transaction amount *(in €)*
Bpifrance Participations	Shares	Loan	25 April 2018	5.1440	15,382,777.06
Philippe Altuzarra	Shares	Acquisition	30 November 2018	2.1298	21,298

7.6 Valid delegations

Authorizations to issue shares and marketable securities providing access to the Company's capital valid as at 31 December 2018 are described in paragraph 2.2.3.1 of this Registration Document.

7.7 Shareholders' participation in the Company's Shareholders' Meetings

Every shareholder is entitled to participate in the Company's Shareholders' Meetings in accordance with applicable statutory and regulatory provisions and regardless of the number of shares held. Article 12 of the bylaws concerning Shareholders' Meetings does not provide any specific conditions for attending and participating, although a double voting right is allocated to all registered shares held by the same owner for at least four years.

Since Vallourec places great importance on listening to its shareholders, it endeavors, whenever it can, to improve shareholder participation at its Shareholders' Meetings by making shareholders aware of the meetings in advance, by publishing information over and above that required by law in specialist publications and by sending a letter to all shareholders.

The attendance register at the Ordinary and Extraordinary Shareholders' Meeting on 25 May 2018 shows that 4,262 shareholders were present, represented or voted by post, owning a combined total of 233,985,785 shares with voting rights out of 457,889,167 shares, i.e. 51.1% of shares with voting rights, and 245,380,036 voting rights out of 469,962,172 voting rights, i.e. 51.1% of voting rights.

7.8 Information on factors likely to have an impact in the event of a public takeover bid or a public exchange offer

The factors that are likely to have an impact in the event of a takeover bid are set forth below.

7.8.1 Structure of share capital and direct or indirect shareholdings declared in accordance with Articles L.233-7 and L.233-12 of the French Commercial Code

A table showing the structure of Vallourec's share capital and direct or indirect shareholdings in the capital declared in accordance with Articles L.233-7 and L.233-12 of the French Commercial Code *(Code de commerce)* is presented in Section 2.3 of this Registration Document.

7.8.2 Statutory restrictions on the exercise of voting rights

Article 8 paragraph 5 of the Company bylaws lays down an obligation of disclosure on any person who comes to hold or to cease to hold a number of bearer shares of the Company equal to or greater than three (3), four (4), six (6), seven (7), eight (8), nine (9) or twelve and a half (12.5) percent of the total number of shares comprising share capital (see Section 2.1.9 of this Registration Document).

In the event of failure to comply with this obligation of disclosure, and at the request of one or more shareholders holding at least 5% of the Company's shares, the voting rights attached to the shares exceeding the fraction that should have been declared cannot be exercised or delegated by the shareholder who failed to meet the obligation, for all Shareholders' Meetings held for a period of two years following the date of the proper disclosure notification.

7.8.3 Holders of any security containing special rights of control

Article 12, paragraph 4 of the bylaws provides for fully paid-up shares that have been duly registered in the name of the same shareholder for four (4) years to have double the voting rights conferred on other shares. Apart from this condition, there are no other securities that have special rights of control.

7.8.4 Control mechanisms within an employee share ownership system

In accordance with Article L.214-40 of the French Monetary and Financial Code *(Code monétaire et financier),* the Supervisory Boards of the Vallourec Actions, Value France Germany UK and Value Brazil Mexico UAE company mutual funds (FCPEs) decide whether to contribute Company securities to a public offering to purchase or exchange these shares.

7.8.5 Agreements between shareholders of which the Company is aware that could lead to restrictions on the transfer of shares and the exercise of voting rights

Subject to the agreement not constituting a concerted action entered into with NSSMC on 1 February 2016 and the shareholders' agreement not constituting a concerted action entered into with Bpifrance Participations on 1 February 2016 (see Section 2.3.3 of this Registration Document), there is to the Company's knowledge no agreement between shareholders that could lead to restrictions on the transfer of shares and exercising of voting rights of the Company.

7.8.6 Rules applicable to the appointment and replacement of the members of the Company's Management Board

No provision in the bylaws, or agreement concluded between the Company and a third party, contains an obligation or particular rule regarding the appointment and/or the replacement of members of the Management Board of the Company that is likely to have an impact in the event of a takeover bid.

7.8.7 Powers of the Management Board in the event of a takeover bid

Since 2009, the Shareholders' Meetings called to decide on conferring authority on the Management Board to purchase shares of the Company have expressly ruled out the possibility of share buybacks during takeover bids for the Company. The Shareholders' Meeting of 23 May 2019 will be asked to renew this prohibition on buying back shares during a takeover bid on the Company.

The Shareholders' Meeting of 12 May 2017 suspended the Management Board's ability to use the resolutions to increase the Company's share capital (with the exception of capital increases reserved for employees or allocations of medium/long-term incentive instruments (performance shares and options)) during takeover bids for the Company, except with the prior authorization of the Shareholders' Meeting.

The Management Board is not authorized by the Shareholders' Meeting to issue share subscription warrants during a takeover period on shares of the Company, as stipulated in Article L.233-32-II of the French Commercial Code *(Code de commerce).* No draft resolution in this regard is due to be put to the Shareholders' Meeting on 23 May 2019.

7.8.8 Agreements made by the Company that would be amended or terminated in the event of a change in control of the Company

Some agreements made by the Company contain a change of control clause. The most significant ones, which could have an impact in the event of a takeover bid include: certain industrial agreements with Nippon Steel Corporation (formerly NSSMC) and Sumitomo Corporation (see Section 5.3.1 of this Registration Document); the shareholders' agreement not constituting a concerted action entered into with Nippon Steel Corporation (formerly NSSMC) on 1 February 2016, and the shareholders' agreement not constituting a concerted action entered into with Bpifrance Participations on 1 February 2016 (see Section 2.3.3 of this Registration Document); the confirmed credit line of €1.1 billion expiring in February 2019 (initially extended for €1.078 billion to February 2020 and then a second time for €1.034 billion to February 2021), entered into on 12 February 2014; the confirmed credit line of €400 million expiring in July 2020 (extended for €300 million to February 2021), entered into on 21 September 2015; the confirmed credit line of €450 million expiring in February 2020 (extended for €300 million to February 2021), entered into on 2 May 2016; a bilateral line of €90 million expiring in February 2021; and the bond issues of August 2012, September 2014, September 2017, October 2017, and April 2018 (see Section 2.2.6 "Non-equity instruments" of this Registration Document).

7.8.9 Agreements providing for payments to members of the Management Board or employees, if they resign or are dismissed for no real or serious cause, or if their employment is terminated due to a takeover bid

The mechanisms linked to the termination of corporate offices and/or, where applicable, the employment contracts of Mr. Philippe Crouzet, Chairman of the Management Board, and Mr. Olivier Mallet, member of the Management Board, are described in the compensation policy for corporate officers appearing in Section 7.2.1 of this Registration Document and in the Supervisory Board's Report on the 2018 compensation of corporate officers, which appears in Section 7.4 to Chapter 7 of this Registration Document.

7.9 Supervisory Board observations on the management report of the Management Board and the financial statements

The Supervisory Board reviewed the Management Board's management report and the parent company and consolidated financial statements for fiscal year 2018, along with the various documents attached thereto. It has no particular observations to make on these documents.

The Supervisory Board supports the Management Board's proposal to not pay a dividend for fiscal year 2018.

Additional information

Chapter 8

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8.1 Statutory Auditors' report on 2018 activity

8.1.1. Statutory Auditors' report on regulated agreements and commitments

Annual General Meeting held to approve the financial statements for the year ended 31 December 2018

This is a free translation into English of the Statutory Auditors' special report on regulated agreements and commitments with third parties that is issued in the French language and is provided solely for the convenience of English speaking readers. This report on regulated agreements and commitments should be read in conjunction, and construed in accordance with, French law and professional auditing standards applicable in France. It should be understood that the agreements reported on are only those provided by the French Commercial Code and that the report does not apply to those related party transactions described in IAS 24 or other equivalent accounting standards.

To the Annual General Shareholders' Meeting of Vallourec,

In our capacity as Statutory Auditors of your Company, we hereby present to you our report on the regulated agreements and commitments.

The terms of our engagement require us to communicate to you, based on information provided to us, the principal terms and conditions of those agreements and commitments brought to our attention or which we may have discovered during the course of our audit, and the reasons justifying that these commitments and agreements are in the company's interest, without expressing an opinion on their usefulness and appropriateness or identifying such other agreements and commitments, if any. It is your responsibility, pursuant to article R.225-58 of the French Commercial Code *(Code de commerce)*, to assess the interest involved in respect of the conclusion of these agreements and commitments for the purpose of approving them.

Our role is also to provide you with the information stipulated in article R.225-58 of the French Commercial Code relating to the implementation during the past year of agreements and commitments previously approved by the Shareholders' Meeting, if any.

We conducted the procedures we deemed necessary in accordance with the professional guidelines of the French National Institute of Statutory Auditors *(Compagnie nationale des commissaires aux comptes)* relating to this engagement. These procedures consisted in agreeing the information provided to us with the relevant source documents.

AGREEMENTS AND COMMITMENTS SUBMITTED TO THE APPROVAL OF THE SHAREHOLDERS' MEETING

Agreements and commitments authorised during the past year

We hereby inform you that we have not been advised of any agreement or commitment authorised and concluded during the year to be submitted for the approval of the Shareholders' Meeting pursuant to article L.225-86 of the French Commercial Code.

AGREEMENTS AND COMMITMENTS PREVIOUSLY APPROVED BY THE SHAREHOLDERS' MEETING

Agreements and commitments approved during previous years

a) with continuing effect during the year

Pursuant to article R.225-57 of the French Commercial Code, we have been advised of the performance, during the year, of the following agreements and commitments, already approved by the Shareholders' Meeting.

Additional pension scheme for Messrs. Philippe Crouzet (Chairman of the Management Board) and Olivier Mallet (member of the Management Board)

On 17 February 2016, the Supervisory Board examined the terms and conditions governing the termination of duties of Messrs. Philippe Crouzet and Olivier Mallet, members of the Vallourec Management Board, following the renewal of their mandates.

Upon recommendation of the Appointments, Remuneration and Governance Committee, the Supervisory Board authorised the closing of the additional defined benefit pension scheme in force and the set-up of a new scheme that would introduce retirement savings while preserving your Company's economic interests via the definition of performance conditions.

The Supervisory Board has thus authorised the Management Board to institute a general additional pension scheme comprising the following two components and, for Messrs. Philippe Crouzet and Olivier Mallet:

Mandatory group defined contribution scheme

The Supervisory Board authorised the members of the Management Board to benefit from a new mandatory group defined contribution scheme which would benefit all employees satisfying the eligibility conditions.

The contribution to this scheme would be set at 12% of the remuneration exceeding between 4 and 8 times the social security ceiling. The scheme can only be liquidated upon liquidation of the social security pension.

The amounts of contributions paid by the Company in respect of 2018 amounted to €19,071.36 for Mr. Philippe Crouzet and 19,071.36 for Mr. Olivier Mallet.

Your Company's financial obligation is strictly limited in terms of amount and time since it can close the scheme at any time.

Individual scheme subject to performance criteria

The Supervisory Board authorised the members of the Management Board, satisfying the eligibility conditions, to benefit from, a new individual defined contribution pension scheme to which the Company would make a contribution and for which, in keeping with the spirit of the Macron law, the Supervisory Board decided to set performance conditions.

With respect to these performance conditions, the Board has decided to determine the effective contribution rate based on the annual bonus rate:

- the maximum contribution would be payable for the year in the case of an annual bonus calculated at 50% of the target;
- no contribution would be paid if the calculated annual bonus equalled zero;
- the contribution would vary on a straight-line basis between limits ranging from 0 to 50%.

In order to finance the contribution, your Company's share would be equal to a percentage of the gross remuneration less employee contributions and the income tax generated by this contribution. The scheme can only be liquidated upon liquidation of the social security pension.

Your Company may terminate this scheme at any time in such a way that it does not represent a deferred obligation.

The amounts of contributions paid by the Company in respect of 2018, i.e. 50% of contributions paid to an insurance company and 50% paid in cash, considering the mandatory tax consequences, amounted to €255,000 for Mr. Philippe Crouzet and €147,000 for Mr. Olivier Mallet.

These commitments have been approved by the Shareholders' Meeting of 6 April 2016.

b) which were not performed during the year

Furthermore, we have been advised of the continuation of the following agreements, already approved by the Shareholders' Meeting, and which were not performed during the year.

Crystallisation of the defined contribution pension scheme benefiting Messrs. Philippe Crouzet and Olivier Mallet

The Supervisory Board of 14 September 2005 authorised the implementation of a supplementary pension for senior executives, noting that members of the Management Board were likely to benefit from these pension benefits; this scheme was included in an amendment authorized by the Supervisory Board on 7 May 2008.

The Supervisory Board of 17 February 2016 authorised the members of the Management Board to benefit from, as is the case for 35 other senior executives satisfying the eligibility conditions, the defined contribution pension scheme under the conditions set forth in a lock-in regulation, pursuant to which no potential new benefits may be created under the closed scheme and the beneficiaries may only benefit from past "crystallised" benefits if they obtain the liquidation of the Social Security pension.

This decision has been approved by the Shareholders' Meeting of 6 April 2016.

Commitments made in favour of Messrs. Philippe Crouzet and Olivier Mallet

After examining the measures related to the termination of duties of Messrs. Philippe Crouzet and Olivier Mallet, the Supervisory Board at its meeting of 17 February 2016, decided to extend the principles of (i) monetary termination benefit for the end of a term of office and the non-compete obligation applicable to Mr. Philippe Crouzet, and (ii) the monetary termination benefit for the end of the term of office to Mr. Olivier Mallet.

This extension has been approved by the Shareholders' Meeting of 6 April 2016.

Monetary termination benefit for the end of term of office of Mr. Philippe Crouzet

The monetary termination benefit shall only be payable in the event of a departure following a change in control or strategy. In addition, no benefit shall be payable should Mr. Philippe Crouzet have the opportunity to claim his retirement rights in the near future.

The termination benefit amount shall be limited to twice the average gross fixed and variable annual monetary remuneration payable in respect of the two financial periods preceding the date of departure (hereinafter the "Maximum Benefit").

The benefit shall be calculated using the fixed monetary remuneration payable in respect of the financial period preceding the departure date, plus the target variable monetary remuneration determined for the same period (the "Reference Remuneration") and may not under any circumstances exceed the Maximum Benefit.

Its amount shall depend on the achievement of three performance criteria assessed in the last three financial periods preceding the departure date (the "Reference Period"). The achievement of each performance criterion shall be combined with a rating range from a floor of 0 points to a ceiling of 30 points.

- The first "C1" performance criterion shall be assessed on the EBITDA rate, expressed as a percentage of revenues for each financial period within the Reference Period. C1 shall vary on a straight-line basis between 30 points for a maximum determined by the Supervisory Board, upon the approval of the Appointments, Compensation and Governance Committee, with reference to the EBITDA rates achieved in the last three financial periods closed, and at least equal to the average of these rates; and 0 points for a minimum at most equal to the maximum less 6 EBITDA points.

- The second "C2" performance criterion shall be assessed by comparing EBITDA for each financial period within the Reference Period and the EBITDA set forth in the budget for the same financial periods, prepared by the Management Board and approved by the Supervisory Board. C2 shall vary on a straight-line basis between 0 should the EBITDA reported be less than 25% of the budgeted EBITDA, and 30 points should the EBITDA reported exceed 12.5% of budgeted EBITDA. Budget targets are set each year by the Supervisory Board, pursuant to the opinion of the Appointments, Compensation & Governance Committee, after examining the budget presented by the Management Board and examined previously by the Finance and Audit Committee.
- The third "C3" performance condition shall be based on the percentage of the variable portion of the monetary remuneration payable in respect of each financial period of the Reference Period compared to the target variable portion of the period in question. C3 shall vary on a straight-line basis between 0 and 30 points (and limited to 30 points) according to the percentage of the variable portion paid compared to the target variable portion.

In the event that the total of C1, C2 and C3 (hereinafter the "PC") is on average less than 40 during the Reference Period, no payment shall be due. For an average PC that is equal to 40 or 50, the payment shall be equal to 15 or 18 months' salary respectively (1/12th of the Reference Compensation), up to the Maximum Payment. The payment shall reach its maximum, i.e. 24 months, up to the Maximum Payment, for an average PC that is equal or greater than 80 on average. It shall vary on a straight-line basis between each of the 40, 50 and 80 thresholds.

If the PC for the last financial period of the Reference Period is equal to 0, no payment shall be due.

Each year the Company will provide retrospectively the PC achievement rates for each financial period within the Reference Period. With respect to financial periods 2016, 2017 and 2018, the PCs for Mr. Philippe Crouzet, would be set at 26, 90 and 66, respectively.

Non-compete obligation applicable to Mr. Philippe Crouzet

Considering the steel industry expertise that Mr. Philippe Crouzet has acquired since assuming his duties on 2 April 2009, the Supervisory Board has sought to enable the Group to safeguard its know-how and activities by imposing a conditional non-compete obligation on Mr. Philippe Crouzet should he leave the Group.

At its entire discretion, the Supervisory Board may decide to prohibit Mr. Philippe Crouzet, at the time of his departure, and for a period of 18 months following the termination of his duties as Chairman of the Vallourec Management Board, for whatever reason, from working in whatever manner with a company or a group of companies in the steel industry, with no territoriality restrictions.

This obligation, if implemented by the Board, would give rise to the payment to Mr. Philippe Crouzet of non-compete compensation equal to 12 months of gross fixed and variable monetary remuneration, calculated using the average annual gross fixed and variable remuneration paid in the two financial periods preceding the departure date.

This sum would be paid in equal monthly advances during the entire period in which the non-compete clause is applicable.

The accumulation of the compensation paid under the non-compete clause and a termination benefit, should such benefit be paid, may not under any circumstances exceed twice the average gross fixed and variable annual monetary remuneration payable in respect of the two financial periods preceding Mr. Philippe Crouzet's departure date.

Monetary termination benefit for the end of term of office of Mr. Olivier Mallet

The Supervisory Board decided to grant Mr. Olivier Mallet a monetary termination benefit should he be removed from office as member of the Vallourec Management Board, provided that he waives any specific compensation payable in the event of a termination of his employment contract with Vallourec Tubes, which has been suspended during his term of office as a Management Board member.

The termination benefit amount shall be limited to twice the average gross fixed and variable annual monetary remuneration payable in respect of the two financial periods preceding the date of departure (hereinafter the "Maximum Benefit") and shall not be payable should Mr. Olivier Mallet have the opportunity to claim his retirement rights in the near future.

The benefit shall be calculated using the fixed monetary remuneration payable in respect of the financial period preceding the departure date, plus the target variable monetary remuneration determined for the same period (the "Reference Remuneration") and may not under any circumstances exceed the Maximum Benefit.

The accumulation of a benefit payable under the National Collective Bargaining Agreement for Executives in the steel industry, and the monetary termination benefit, should such benefit be paid, may not under any circumstances exceed the Maximum Benefit

This benefit is subject to the same performance conditions as those previously described for the monetary termination benefit of Mr. Philippe Crouzet, it being specified that, as with the latter, the PC achievement rate for each financial period of the Reference Period shall be communicated retrospectively for each year by your Company. For the 2016, 2017 and 2018 financial periods, the PC for Mr. Olivier Mallet would be set at 26, 90 and 66 respectively.

Paris La Défense, on 25 March 2019

The Statutory Auditors,
French original signed by

Deloitte & Associés	**KPMG Audit**
Véronique Laurent	Division of KPMG SA
	Alexandra Saastamoinen

8.2 Concordance tables and information incorporated by reference

8.2.1 Concordance table comparing the Registration Document and Appendix I to EC Regulation No. 809/2004 of 29 April 2004

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21.2.6	Provisions contained in the issuer's articles of association, statutes, charter or bylaws that would have an effect of delaying, deferring or preventing a change in control	7.8	320
21.2.7	Provisions contained in the articles of association, statutes, charter or bylaws governing the ownership threshold above which any shareholder ownership must be disclosed	2.1.9	13
21.2.8	Conditions imposed by the memorandum and articles of association statutes, charter or bylaw governing changes in the capital, where such conditions are more stringent than is required by law	2.2.1	14

Appendix I to the European Regulation			Registration Document Chapters/Sections	Registration Document Pages
22.	**Material contracts**		**3.3.1 / 5.1.3 / 5.1.4 / 6.1 (Note 16) / 6.1 (Note 33)**	**45 / 143 / 145 / 207 / 229**
23.	**Third party information and statement by experts and declarations of any interest**			
	23.1	Statement or report attributed to a person as an expert	N/A	N/A
	23.2	Information from a third party	N/A	N/A
24.	**Documents on display**		**2.1.5 / 2.6**	**12 / 26**
25.	**Information on holdings**		**6.1.7.B / 6.3.E.6**	**177 / 247**

8.2.2 Concordance table between Vallourec’s Registration Document and the annual financial report

Annual financial report		Registration Document Chapters/Sections	Registration Document Pages
1.	Parent company financial statements	6.3	234
2.	Group consolidated financial statements	6.1	160
3.	Statutory Auditors’ report on the company financial statements	6.4	249
4.	Statutory Auditors’ report on the consolidated financial statements	6.2	231
5.	Management report including at least the information referred to in Articles L.225-100, L.225-100-2, L.225-100-3 and L.225-211 paragraph 2 of the French Commercial Code (*Code de commerce*)	8.2.3	331
6.	Statement by the person responsible for the annual financial report	1.2	8
7.	Statutory Auditors’ fees (Article 222-8 of the AMF’s General Regulations)	6.1 (Note 27)	224
8.	Supervisory Board Report on compensation in 2018 for corporate officers	7.4	308

8.2.3 Concordance table between the Registration Document and the Management Board report

This Registration Document includes all elements from the Board's management report as required by law and the regulations. The table below identifies the sections and pages of this Registration Document constituting the management report.

Management report		Registration Document Chapters/Sections	Pages
1.	Activities and business development of the Group – Progress and challenges	3.2 / 3.4	32 /49
2.	Results of the Group – Financial position and performance indicators	3.7	57
3.	Changes to the presentation of the annual financial statements or the valuation methods applied in prior years	6.3.3	235
4.	Material events between the reporting date and the date the report was prepared	3.5	54
5.	Foreseeable developments and the Company's outlook	3.8	66
6.	Payment periods for suppliers and customers	3.9	68
7.	Amount of dividends paid during the past three years	2.5	26
8.	Vallourec results table for the last five financial years	6.2.3.E.7	248
9.	Description of the principal risks and uncertainties the Group faces – Exposure to interest rate, credit, liquidity and cash risks – Internal control and risk management procedure	5.1	136
10.	Use of financial instruments by the Group, where it is relevant for the assessment of its assets, liabilities, financial position and income or loss	2.2.6 / 5.1.4	19 / 145
11.	Significant equity stakes in companies headquartered in France	N/A	N/A
12.	Injunctions or monetary penalties for anti-competitive practices	N/A	N/A
13.	Research and development activities	3.3	45
14.	Oversight plan	4.1	74
15.	Consolidated statement of non-financial performance	4.2	78
16.	Composition of share capital	2.3.1	21
17.	Employee share ownership	2.3.1 / 7.3.3	21 / 307
18.	Share repurchases	2.2.4	17
19.	Share transfers made to regularize cross-shareholdings or takeovers of such companies	N/A	N/A
20.	Summary of valid authorizations for capital increases and use made of these authorizations during fiscal year 2018	2.2.3	15
21.	Adjustments of the rights of holders of transferable securities giving access to capital or options	N/A	N/A

8.2.4 Concordance table between the Registration Document and the Supervisory Board's corporate governance report

This Registration Document includes all elements from the Supervisory Board's corporate governance report as required by law and the regulations. The table below identifies the sections and pages of this Registration Document constituting the corporate governance report.

Corporate governance report		Registration Document Chapters/Sections	Registration Document Pages
1.	Composition of the Management and Supervisory Boards	7.1.1	254
2.	Mandates and functions of corporate officers	7.1.1.1	254
3.	Diversity policy applied to members of the Supervisory Board	7.1.1.2	257
4.	Conditions for preparation and organization of the Board's work	7.1.2.2	274
5.	Declaration on corporate governance – Compliance with the AFEP-MEDEF Code	7.1.6	285
6.	Compensation policy for corporate officers	7.2.1	286
7.	Compensation of corporate officers	7.2.2	294
8.	Allocation of stock options	7.3.1	301
9.	Allocation of shares free of charge or performance shares	7.3.1	301
10.	Employee share ownership	7.3.3	307
11.	Supervisory Board Report on compensation in 2018 for corporate officers	7.4	308
12.	Securities transactions made by executives	7.5	319
13.	Valid delegations regarding capital increases	7.6	319
14.	Shareholders' participation in the Company's Shareholders' Meetings	7.7	320
15.	Measures having an impact in the event of a takeover bid	7.8	320
16.	Supervisory Board observations on the management report of the Management Board and the financial statements	7.9	322

8.2.5 Information included by reference

In accordance with Article 28 of European Commission (EC) Regulation No. 809/2004 of 29 April 2004, this Registration Document incorporates the following information by reference:

- the parent company and consolidated financial statements for the year ended 31 December 2017, the Statutory Auditors' reports thereon, and the management report, presented respectively in Section 6.2 (pages 230-245), Section 6.1 (pages 158-229), Sections 8.1.1 to 8.1.4 (pages 316-324) and Section 8.2.3 (page 329) of the 2017 Registration Document filed with the French securities regulator (*Autorité des Marchés Financiers*) on 21 March 2018 under No. D.18-0161; and
- the parent company and consolidated financial statements for the year ended 31 December 2016, the Statutory Auditors' reports thereon, and the management report, presented respectively in Section 6.2 (pages 224-238), Section 6.1 (pages 148-223), Sections 8.1.1 to 8.1.4 (pages 318-324) and Section 8.4.3 (page 331) of the 2016 Registration Document filed with the French securities regulator (*Autorité des Marchés Financiers*) on 21 March 2017 under No. D.17-0191.

8.3 Other periodic information required under the General Regulations of the French securities regulator *(Autorité des Marchés Financiers)*

The Registration Document includes some of the periodic information required under the terms of the AMF's General Regulations. The following table provides details of the pages of this Registration Document on which this information appears.

	Registration Document	
	Sections	**Pages**
Supervisory Board Report on compensation in 2018 for corporate officers	7.4	308
Statutory Auditors' fees (Article 222-8 of the AMF's General Regulations)	6.1 (Note 27)	224
Description of the share buyback program (Article 241-2 of the AMF's General Regulations)	2.2.4	17

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A French limited company (société anonyme)
with Management and Supervisory Boards and issued capital of €915,975,520