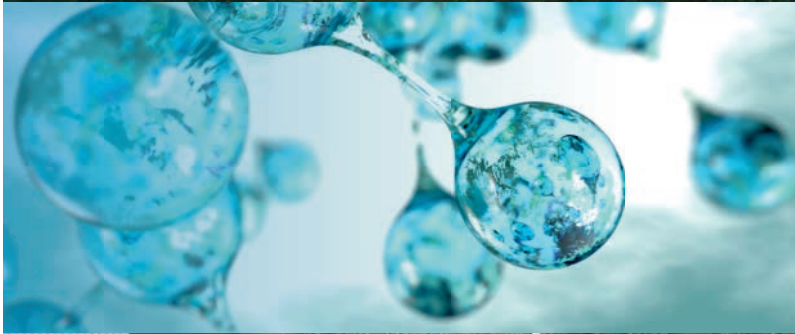


VALLOUREC, GLOBAL LEADER IN TUBULAR SOLUTIONS FOR NEW ENERGIES



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VALLOUREC, GLOBAL LEADER IN TUBULAR SOLUTIONS FOR THE ENERGY SECTOR

As a global leader in its markets, Vallourec builds on its recognized expertise in the field of metallurgy, applied to the most demanding environments. With a particular focus on the energy sector, Vallourec delivers premium tubular solutions designed to perform even in severe conditions including corrosive environments, high pressure and high temperatures. From the construction of oil and gas wells in extreme conditions to cutting-edge mechanical equipment, as well as solutions for the hydrogen, CCUS (Carbon Capture, Utilization, and Storage), geothermal, and solar markets, Vallourec is at the forefront of the 21st century's energy challenges.

The Vallourec Group benefits from a global presence combined with a strong local footprint. The Group has over 15,000 employees across 20 countries, with operations close to its customers.

Vallourec offers a comprehensive global portfolio tailored to four major markets:

- ▶ **Oil and Gas:** Vallourec markets solutions for the exploration and production of oil and gas fields, including drilling operations, transportation tubes (pipelines), and well equipment, with a particular expertise in addressing the most extreme environments.
- ▶ **Low-Carbon Energies:** Vallourec offers a wide range of tubes that can withstand the demands of new low-carbon energy solutions. Vallourec's solutions are designed for carbon and hydrogen storage and transportation, as well as for geothermal wells.
- ▶ **Industry:** Vallourec develops lightweight and robust tubes for various industrial applications, including refineries, hydraulic cylinders, machine tools, automotive, construction, and more.
- ▶ **Mining:** Vallourec operates an iron mine in Brazil to meet its internal iron ore needs as well as those of its customers.



Philippe Guillemot
CEO of Vallourec

“At Vallourec, our value creation model is based on a fundamental principle: to be a trusted partner and create value for all our stakeholders by providing innovative steel solutions for the energy sector. With our New Energies portfolio, Vallourec aims to be a key player in the energy transition and a decarbonized economy by 2050.”

VALLOUREC® NEW ENERGIES : OUR SOLUTIONS FOR THE ENERGY TRANSITION

Decarbonization is a necessity for industries worldwide. Vallourec is a pioneer in low-carbon technologies: Vallourec has equipped geothermal projects for over 30 years, and its products are validated and in use across critical applications throughout the New Energies value chain.

Leveraging its extensive expertise in the oil and gas sector, the Group has successfully adapted its advanced materials and premium VAM® connections to green energy markets.

The Group has invested in research and development to position itself in new applications, including **geothermal, hydrogen, carbon capture, utilization and storage (CCUS) worldwide, as well as solar and biomass applications in Brazil.** Innovative tubular solutions, accessories, and services are available in each of these businesses, reaffirming Vallourec's role in the energy transition through its strong new offering: **Vallourec® New Energies.**

“With our Vallourec® New Energies portfolio, our goal is to support customers in their energy transition activities by providing expertise in materials, as well as robust products and solutions. We also aim to contribute to defining new industrial standards as these markets continue to evolve. Our objective is to derive 10% to 15% of our Group EBITDA from New Energies by 2030.”



Bertrand de Rotalier
Senior Vice President
New Energies,
Project Line Pipe and Process

HYDROGEN

Vallourec offers a comprehensive range of pioneering solutions tailored to the challenges of hydrogen. The Group is at the forefront of research and development in the growing hydrogen market, providing storage and transportation solutions.

Thanks to its in-depth expertise in materials and connections for the oil and gas industry, Vallourec offers specific solutions to meet the unique requirements of hydrogen projects, particularly in terms of high pressure, tightness, and resistance to corrosion and hydrogen embrittlement. We also have recognized experience in inspection and non-destructive testing – essential elements to ensure the performance of installations throughout their lifetime.

Relying on its advanced tubular solutions, the Group supports its customers in their hydrogen projects via pipelines and hydrogen storage, including underground storage in salt caverns. In France and across Europe, we are already working with a number of partners such as Storengy (HyPSTER project), Gasunie, and Uniper.

In 2023, to offer more localized storage solutions to its clients, the Group developed a new storage system and inaugurated its demonstrator for vertical compressed gaseous hydrogen storage, a world first. To support the commercial development of this storage solution, Vallourec launched the «Delphy» brand.



“With Vallourec, customers benefit from reliable and innovative solutions for their hydrogen projects, contributing to the energy transition towards a cleaner and more sustainable economy.”

Vincent Designolle
Delphy Director

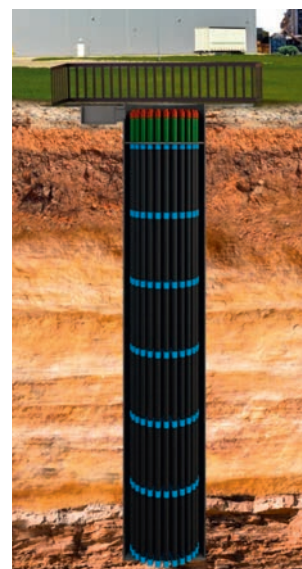
Delphy: Vertical Hydrogen Storage Solution, a World First

Vallourec’s Delphy solution marks a breakthrough in hydrogen storage, offering an innovative and secure response to the growing needs of industry and heavy mobility.

The demonstrator for this innovative system was installed in 2023 at the Group’s historic production site in Aulnoye-Aymeries, northern France, which also houses its global Research & Development center.

The Delphy technology consists of buried storage vessels at depths of up to 100 meters that are capable of holding up to 100 tons of gaseous hydrogen under maximum safety conditions. Delphy stores compressed hydrogen in underground tube assemblies, with a minimal footprint and a modular design adaptable to storage needs. The system is aimed at both green hydrogen producers and users in industrial and heavy mobility applications.

Since the launch of this solution, Vallourec has already signed partnerships with H2V, a French pioneer in large-scale green hydrogen production, and with NextChem Tech, a subsidiary of NEXTCHEM (Sustainable Technology Solutions) specializing in decarbonization technologies.



GEOTHERMAL ENERGY

For over 30 years, Vallourec has been developing high-performance and cost-effective solutions for geothermal projects, designed to meet the challenges of drilling and geothermal operations. With its THERMOCASE® VIT solution, Vallourec is also at the forefront of developing closed-loop geothermal technology and systems.

Geothermal wells extract the heat naturally contained underground in the form of water or steam to generate electricity or supply urban heating networks or industries. Leveraging its expertise in the oil and gas sector, Vallourec provides tubular solutions that meet the various challenges associated with geothermal applications. This includes well design and material selection for products that can withstand high temperatures, pressures, and corrosion, with the aim of optimizing well life without compromising profitability.

THERMOCASE® VIT, an innovative and cost-effective solution for closed-loop geothermal systems

Vallourec has developed a pioneering solution for closed-loop geothermal systems with its THERMOCASE® Vacuum Insulated Tubing (VIT). Thanks to its excellent insulation properties, both hot and cold flows of the heat transfer fluid coexist within the same well, which is not possible with standard tubes. THERMOCASE® VIT minimizes heat loss from the fluid, which improves energy production. Vallourec is collaborating with various startups, including the American company GreenFire Energy, on multiple closed-loop projects.

“Vallourec has established itself by addressing its clients’ challenges and specific needs. Our group has been a partner in the most ambitious geothermal projects for three decades.”

Maximilien de Maisonneuve
Geothermal Energy Director



Case Study: Increased Energy Production with THERMOCASE® VIT

As part of their geothermal operations, an operator planned to use an existing non-productive geothermal well in California, USA, to test new closed-loop technologies. However, achieving the desired energy production goals required an optimized design of the closed-loop system tubing.

Vallourec developed a design using 4.5" x 3.5" THERMOCASE® VIT, which increased tubing depth to 1,500 meters and provided excellent thermal insulation. This solution successfully boosted electrical energy production.

Vallourec customized the THERMOCASE® VIT design to include centralizing fins and clamps, allowing fiber optic cables to be run downhole for instrumentation. This customization ensured precise control over drilling and production parameters, resulting in significantly enhanced efficiency.

From capture to pipeline transportation and storage, Vallourec's expertise covers every stage of the value chain aimed at reducing CO2 emissions. This supports industry stakeholders in deploying a reliable and secure CCUS (Carbon Capture, Utilization, and Storage) infrastructure.

To ensure the safe and cost-effective deployment of CCUS projects, it is essential to mitigate risks associated with CCUS infrastructure such as leakage, corrosion, and low temperatures. Companies must be selective and attentive to the quality of tubular solutions chosen for the transportation and storage of captured CO2. Thanks to its extensive expertise, Vallourec offers a range of tubular products designed to meet the challenges of material integrity. The VAM® connection qualification protocol, developed by Vallourec, tests the tightness of connections through multiple pressure phases and thermal cycles, including extremely low temperatures down to -80°C, simulating CO2 injection scenarios into various geological structures.

At Vallourec, we have been involved on 19 CCUS projects currently in operation, whether for CO2 utilized in enhanced oil recovery (EOR) or for permanent sequestration.



Harold Evin
CCUS Director

“CCUS technologies are essential to ensure sustainable industrial growth and achieve carbon neutrality goals. As a leader in providing premium tubular solutions, we are perfectly positioned to support the global deployment of safe and sustainable CCUS infrastructure for the industry.”

Case study: Partnership with Wintershall Dea in Norway

To create a European decarbonization infrastructure, Norway awarded two Carbon Capture and Storage (CCS) licenses to the German oil and gas company Wintershall Dea, to develop CCUS facilities in the North Sea. The two sites - Luna and Havstjerne - have a combined annual storage capacity of 10 million tons of CO2 and will contribute to making the Norwegian continental shelf a hub for European CO2 storage.

Wintershall Dea selected Vallourec and its Vallourec® New Energies to support these two projects, leveraging our expertise in materials and our innovative, qualified tubular solutions for CCUS applications. Vallourec advised Wintershall Dea in selecting the grades and premium VAM® connections required to withstand the extreme temperatures and corrosive conditions of their projects.

SOLAR ENERGY

Vallourec provides structural equipment for the development of solar projects on the Brazilian market. Its range of solutions are adapted to agricultural and industrial environments and enable the installation and orientation of solar panels.

Vallourec supplies the solar industry with torsion tubes, as well as cold-formed open-hollow section profiles for the construction of large-span steel structures that support photovoltaic solar panels. The torsion tubes run along each row of panels, supporting and enabling them to continuously track the sun from east to west. The open hollow sections lie vertically on the ground and support the torsion tubes at regular intervals, offering weight savings and potential cost savings of up to 50% in surface-coating materials.

For farmers and industrial operators, this means maximum storage space and minimum footprint.

BIOMASS

Within its Vallourec New Energies® portfolio, the Group extends its expertise to biomass-dedicated solutions, for the Brazilian market. Vallourec's premium tubular solutions are used to meet specific needs in biomass energy production, to contribute to carbon emission reduction.

With regards to biomass, Vallourec's activity is primarily focused in Brazil, where sugarcane is used to produce electricity. The equipment used generates energy by burning biomass to produce steam.



Patricia Santana
New Energies Commercial Manager,
South America