



©PIRIOU_vue 3D future drague HYDROMER

HELION Hydrogen Power will supply its fuel cell to the shipbuilder PIRIOU to equip the future hybrid hydrogen dredger ship of the Occitanie Region, a world première

- **The order of this dredger ship by the Occitanie Region takes place in the context of the regional plan for the development of green hydrogen endowed with 150 M€ over the period 2019 – 2030 (1st French Region to have such a dedicated plan).**
- **The PIRIOU group has chosen the HELION Hydrogen Power fuel cell system to meet the needs of the Occitanie Region.**
- **Alstom's subsidiary, Helion Hydrogen Power, positions itself as a strategic French player in the hydrogen sector. Alstom's hydrogen strategy is part of its ambition to be the leader in green and smart mobility worldwide.**

1st April 2022 – HELION Hydrogen Power, a subsidiary of the Alstom Group, and the shipbuilder Piriou signed a contract in Sète (Hérault), in the presence of Jean-Luc Gibelin, Vice-President of the Occitanie Region representing President Carole Delga, to integrate a fuel cell system into the future hybrid hydrogen dredger ship ordered by the Region.

As part of the renewal of its fleet of vessels and in order to continue to reduce the environmental impact of dredging activities, the Region has decided to acquire a hybrid hydrogen dredger ship, named HyDrOMer, in 2021. The only one of its kind in the world, it will be used to maintain the depths of the three regional ports (the commercial ports of Sète-Frontignan and Port-La Nouvelle, and the fishing port of Grau du Roi) as well as to manage the Occitanie coastline. The Region is investing €25 million for the acquisition of this innovative and unique vessel, which will be operational by the end of 2023.

"Committed to environmental excellence, energy efficiency and the production of renewable energy, the Occitanie Region is investing in the construction of this innovative dredger ship, which is unique in the world. I am convinced that green hydrogen is a real asset for accelerating the decarbonisation of maritime and port activities.

And we are going further. The way in which hydrogen is produced is not meaningless, it must also be decarbonised. For this, I wanted hydrogen to be produced via the electrolysis of water by renewable electricity and, in the long term, by the wind turbines that will be installed off the coast of Port-La Nouvelle, therefore with sustainable electricity.

As we are doing with the development of the hydrogen train or our liO buses running on bio-fuels, and soon with the green plane, I hope that Occitanie will be particularly ambitious and pioneering in the production and use of renewable energies.

They also have economic virtues: the additional costs of hydrogen today will represent an important factor of competitiveness for companies tomorrow. With the increase in carbon prices at European and global level, the economic activities that can guarantee a virtuous end-to-end chain are already valued by investors and consumers.

This is the meaning of our Green Pact for Occitanie, which reconciles economic development and ecological transition, in all territories and particularly on our coastline".

Carole Delga, President of the Occitanie/Pyrénées-Méditerranée Region.

The Piriou Group, which won the tender from the Occitanie Region in June 2021, is in charge of building this vessel designed in partnerships with the French naval architecture office LMG Marin. This project is strategic for the shipyard, which confirms its position as a leader in non-carbon propulsion vessels.

"The PIRIOU Group is proud to deserve the confidence of the Occitanie Region for the construction of this innovative and complex vessel with the integration of a fuel cell system, batteries and hydrogen storage containers on board the dredger ship. Beyond the environmental benefits, this is a challenge that we have taken up as a key player in the French marine hydrogen industry."

Frédéric Léon, Managing Director of CHANTIERS PIRIOU.

"We are very grateful to the Piriou Group for choosing the only 100% French marine fuel cell, designed and manufactured in Aix-en-Provence. The maritime and river sectors offer great potential for hydrogen; therefore, we have undertaken the marine certification of our solution by Bureau Veritas. With this world première, we are paving the way towards a decarbonised port and maritime ecosystem" said **Vincent Mahéo**, President of HELION Hydrogen Power, adding: "When Alstom acquired HELION Hydrogen Power exactly one year ago, we wanted to create synergies between the high-power markets: rail, maritime and stationary. This first major order for a hydrogen ship is a great way to celebrate this first anniversary!"

A technological innovation made in France

HELION Hydrogen Power will supply its hydrogen fuel cell, FC-Rack, a modular, containerised brick designed specifically for high power and marine applications.

This 200-kW hydrogen generator, integrated in a 15-foot container, will be housed on the deck of the ship, next to the gas storage required to operate the fuel cell.

This hybrid engine will eliminate all emissions from the ship when it is at berth, offering the possibility of switching off the diesel engines while continuing to

support daily activities on board for the crew. It will also provide part of the energy needed to operate the vessel at sea, during dredging and beach nourishment operations.

In addition to hydrogen, the ship will have several facilities to reduce its environmental impact. These efforts will enable it to obtain the BV "Cleanship" label.

The ship, which serves to protect the coastline from the effects of global warming, will now be equipped with more environmentally friendly solutions.

Production based on a single, modular product, suitable for various applications

Since the announcement of an investment of nearly 6 M€ (in December 2021), HELION Hydrogen Power has the capacity to manufacture its own battery cores at its Aix-en-Provence site (in the South of France).

The company has also developed a battery subsystem based on a simplified and modular architecture that can be reproduced in series. This standardised brick, called FC Rack, is composed of 4 stacks, and can deliver an electrical power ranging from 100 to 200 kW. This flexible system, covering a wide range of power, can power various heavy mobility and stationary applications, more specifically:

- Heavy mobility: rail, sea, river, construction, and mining equipment
- Genset: temporary power supply for specific events and construction sites, power supply for refrigerated containers, shore power supply for ships, power supply for auxiliaries for ships, etc.
- Emergency power supply for industrial sites, telecoms, and data centres.

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About Alstom

Leading societies to a low carbon future, Alstom develops and markets mobility solutions that provide the sustainable foundations for the future of transportation. Alstom's product portfolio ranges from high-speed trains, metros, monorails, and trams, to integrated systems, customised services, infrastructure, signalling, and digital mobility solutions. Alstom has 150,000 vehicles in commercial service worldwide. With Bombardier Transportation joining Alstom on January 29, 2021, the enlarged Group's combined proforma revenue amounts to €14 billion for the 12-month period ended March 31, 2021. Headquartered in France, Alstom is now present in 70 countries and employs more than 70,000 people.

Its employees in France total approximately 12,500, providing a pool of expertise to serve French and international clients. Approximately 30,000 jobs are created in France amongst its 4,500 French suppliers.

A key player in the hydrogen industry, HELION Hydrogen Power, a subsidiary of the Alstom Group, specialises in the design, development and manufacture of fuel cells combining high power and long durability in highly constrained environments. It employs around 25 people at its site in Aix-en-Provence, in addition to around 40 subcontractors. The company, which is celebrating its 20th anniversary this year, has more than 40 patents in hydrogen technology and just as many systems in operation.

www.alstom.com

About Piriou Specialising in shipbuilding, ship repair, ship engineering and services, the PIRIOU Group has been building high value-added medium-sized ships for over 55 years, thanks to its efficient integrated engineering and its locations in Europe, Africa, and Asia. PIRIOU has built and delivered more than 500 vessels worldwide and offers customised solutions as well as a complete range of standard and customised vessels to meet the needs of international private and public, civil, and military shipowners. PIRIOU also assists shipowners anywhere in the world, 365 days a year, 24/7, to ensure optimum availability of their vessels with a range of maintenance services. Recent developments have demonstrated PIRIOU's ability to innovate and to contribute to the decarbonisation of transport using diesel propulsion, fuel cells and hybrid ships.

www.piriou.com

About the Occitanie Region

As a port authority and shipowner, the Occitanie / Pyrénées-Méditerranée Region has a fleet of vessels to ensure the maintenance of the depths of the 3 regional ports: the ports of Sète-Frontignan (34) and Port-La Nouvelle (11), as well as the fishing port of Grau-du-Roi (30). In this context, it has decided to innovate with the design and construction of a fuel-cell powered dredger ship, thus positioning the Region as a spearhead for the nautical industry.

As part of the renewal of the regional fleet, a harbour work vessel will be specially equipped with a hybrid diesel/hydrogen system on board, which will limit the nuisance for local residents and the fishing environment to a minimum. This modern dredger ship will also be an effective tool for managing the coastline in Occitanie.

This order placed by the Region is part of its Green Pact for Occitanie and its €150 million regional plan for the development of green hydrogen.

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