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PRESS RELEASE

HDF and Teréga join forces in the geological storage of green hydrogen and launch the HyGéo project.

HDF and Teréga sign an agreement to develop mass hydrogen storage solutions in salt caverns for multiple applications.

Hydrogène de France (HDF) and Teréga have signed a Memorandum of Understanding (MoU) to develop and provide geological energy storage solutions in salt caverns. In the context of this MoU, HDF and Teréga have launched HyGéo, an innovative national and European pilot project that initiates the deployment of a new hydrogen energy mass storage system.

Underground storage of green hydrogen - a new alternative and a logistical opportunity

Mass energy storage, which enables significant integration of intermittent renewable energies into the electricity mix, is one of the components of the energy transition. It requires the availability of large volumes that can be provided by subsurface resources.

The storage of hydrogen in salt caverns is also an opportunity for networks dedicated to hydrogen in the context of large-scale distribution logistics. It is part of the hydrogen sector development strategy at the heart of European economic recovery programmes.

Published in April 2020 by the French Government, the Multi-year Energy Programme (PPE) encourages stakeholders to study the benefits of the reuse of salt caverns for hydrogen storage. The HyGéo project is fully in line with this PPE incentive.

Through a pilot installation, HyGéo aims to study underground energy storage via so-called "green" hydrogen, obtained through water electrolysis and therefore with no greenhouse gas emissions. This non-polluting hydrogen will be stored in an abandoned geological cavern previously used for the storage of hydrocarbons. Thanks to high-power fuel cells supplied by HDF, the hydrogen stored will produce electricity.

The first stage of the HyGéo project is to carry out a feasibility study, in order to characterise the site, validate this cavern's capacity to store hydrogen and assess the economic relevance of this type of storage. This study will incorporate the environmental and societal aspects and operating procedures involved in new uses of hydrogen: Power to Power, Power to Mobility, Power to Industry and Power to Gas.

In order to successfully complete this first phase, which is certified by the Pole Avenia, the only French competitiveness cluster in the field of subsurface energy systems, HDF and Teréga called upon the Bureau de Recherches Géologiques et Minières (BRGM or Geological and Mining Research Bureau in English), the national geological service, for its subsurface expertise. It will contribute its skills to establish a summary of geological knowledge and the potential impact on the subsurface in the selected area.

HyGéo launches a new regional and national industrial sector

Operational and concrete, HyGéo is a pilot project that has been designed to be deployed quickly. The first phase begins in 2020 with the technical and economic feasibility study. Engineering and construction studies will begin in 2022 for operation in 2024 following feasibility study.

Built on the site of a former salt cavern in the town of Carresse-Cassaber (64) in the Nouvelle-Aquitaine region, HyGéo will store approximately 1.5 GWh of energy, which represents the equivalent of the annual consumption of 400 households.

The total budget for the realisation of this pilot site is estimated at 13.5 million Euros. In addition to launching a new decisive sector in the context of the energy transition, HyGéo will also have positive impacts in terms of:

- **Socio-economics**, with the creation of 20 direct jobs, and between 20 and 30 indirect jobs due to the operation of the cavern;
- **Regional and sector development**, with the promotion of the geoscience and hydrogen skills present in Nouvelle-Aquitaine;
- **The environment**, with nearly 73,000 tonnes of CO2 avoided per year.

The Nouvelle-Aquitaine Regional Council supports this project, with a grant for the first phase of the project of €464,248, **paid to HDF, the project coordinator**.

"HyGéo is an innovative project that showcases the expertise of regions in the service of alternative solutions to fossil fuels. The outlook is very promising. We are proud to be able to sustain our local wealth and support the deployment of a new hydrogen storage system to address the new environmental challenges facing us."

Alain Rousset - President of the Nouvelle-Aquitaine Regional Council

HyGéo is a unique opportunity to develop hybrid French know-how in both geosciences and energy. Its purpose is to be the starting point for a wider deployment of green hydrogen solutions, mobilising regional companies to move towards energy autonomy for Nouvelle-Aquitaine. This deployment is a viable and realistic solution to achieve ambitious regional, national or European energy transition objectives.

"After having launched several concrete projects in overseas french territories and abroad, we are very pleased to continue our deployment in our region. With Teréga, we have a partnership based on our complementarity and the desire to be quickly operational. It is fantastic to pave the way for extremely large-scale renewable energy storage!"

Damien Havard, Chief Executive Officer of HDF

"As an energy accelerator in regions, and as an extension of our skills in gas transmission and storage, it is our duty to work on designing new innovative solutions that will build the energy models of tomorrow. HyGéo is the perfect illustration of this. Participating in this project therefore seemed an obvious conclusion. We are convinced that the deployment of a new hydrogen sector in France will actively contribute to the objective of carbon neutrality by 2050."

Dominique Mockly, Chief Executive Officer of Teréga

About Teréga

Established in South-West France, at the crossroads between major European gas flows, Teréga has utilised its exceptional expertise for over 75 years in the development of gas transmission and storage infrastructures. Today, it continues to design innovative solutions to take up the major energy challenges facing France and Europe. A true accelerator of the energy transition, Teréga operates over 5,000 km of pipes and two underground storage reservoirs, respectively representing 15.6% of the French gas transmission network and 24.5% of national storage capacities. In 2019, the company generated a turnover of €500 million and had more than 650 employees.

About Hydrogène de France (HDF):

A specialist in hydrogen technologies, HDF has two divisions. HDF Energy, developer of Renewstable® power plants, which capture intermittent renewable energy to store it massively in the form of hydrogen to produce stable, 24-hour electricity that can be controlled like a thermal power plant, at a competitive price. In 2019, HDF Industry division has entered into an agreement with Ballard to design and manufacture 1MW+ Fuel Cells in France using the Ballard Fuel Cells stacks and technology.

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