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45-8 ENERGY: WINNER OF A CALL FOR PROJECT LAUNCHED BY THE FRENCH GOVERNMENT AS PART OF THE “RECOVERY PLAN FOR INDUSTRY - STRATEGIC SECTORS” FOR THE PROMET-HÉ PROJECT.

To enable the recovery of activity in the context of an unprecedented health and economic crisis, the French Government announced on 3 September 2020 the implementation of a 100 billion euros recovery plan, of which 35 billion euros are specifically dedicated for industry. Its objective is to promote the resilience of French industry by strengthening its competitiveness, through a massive plan to modernise production tools, support digital transformation and improve environmental performance.

45-8 ENERGY, through the PROMET-Hé project, has been selected by the French Ministry of Industry and BPI France as a winner of the "Recovery Plan - Strategic Sectors" call for projects, which are committed to supporting our dedicated investment of 3 million euros with a 1.6 million euros grant.

THE PROMET-HÉ PROJECT

The PROMET-Hé project (PROcédé MEmbranaire pour le Traitement de l'Hélium) consists of developing a valorisation process for an eco-responsible, local, compact helium, with a lower energy consumption than reference processes.

This project is carried out in partnership with the “Laboratoire Réactions & Génie des Procédés” (LRGP) and the CNRS, and also approved by the Materalia competitiveness cluster.

Its implementation via a mobile experimental pilot, a European first, will allow the process to be validated on several deposits already identified by 45-8 ENERGY, particularly in the Nièvre region, before its deployment on an industrial scale.

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THE OBJECTIVES OF THE PROJECT

To produce a strategic resource, helium, which is essential to many industries.

To develop national sovereignty by reducing our dependence on helium imports.

To value helium in its gaseous state, its natural state, which corresponds to 75% of European uses.

To benefit from a compact gas separation process that can be replicated in other potential areas.

THE INNOVATION ASPECTS OF THE PROJECT

The PROMET-Hé project is divided into three distinct R&D parts:

1

Separation process design:

The objective is to take advantage of the best part of gas separation technologies to reduce the energy consumption of the process and the cost of separation.

2

Development of the separation membrane:

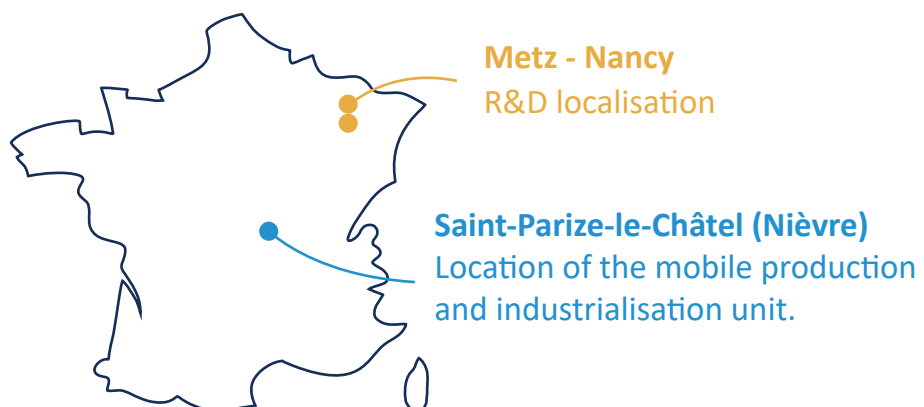
The aim is to develop the most efficient membrane material which is adapted to the separation of helium and associated gases.

3

Implementation of a mobile production pilot:

It consists of validating the separation process developed in an area identified by 45-8 ENERGY, in the Nièvre region of France, where a gas stream rich in helium and carbon dioxide, which currently leaks naturally into the atmosphere, is released.

THE LICENCE AREA



AN ECO-COMMITTED PROJECT

The PROMET-Hé project acts in favour of the ecological transition in various ways:

- The valorisation of the carbon dioxide presents in the gas flow of the Nièvre pilot project, which is currently escaping into the atmosphere, will **make it possible to limit the greenhouse gas emissions**.
- Membrane technology allows us **to avoid the use of chemicals**, which are often used for gas separation, and thus to avoid their release into the nature.
- Membrane technology also allows us to benefit from an extremely compact gas separation process and therefore to **set up production units with a very small footprint**.
- Targeting the gaseous helium market, which represents 75% of European uses, and distributing it in a short circuit, allows us to **avoid the extremely energy-intensive liquefaction** necessary for long-distance transport.
- Using helium in a short circuit **reduces the greenhouse gas emissions caused by long-distance transport** and thus considerably reduces the environmental impact of the sector.

THE SOCIAL IMPACT OF THE PROJECT

PROMET-Hé will ensure, in case of success, the maintenance and creation of jobs on the whole perimeter of the project:

- **Direct jobs** : 2 engineers and 1 technician at 45-8 ENERGY (Metz), 1 engineer at the LRGP (Nancy) and 3 technical jobs in the Nevers sector for the industrialisation of the process.
- **Jobs maintained** : 12 employees at 45-8 ENERGY.
- **Indirect jobs** induced by the attractiveness of the Nevers sector to companies using helium and carbon dioxide and by the creation of an “airship” cluster planned by the Nevers urban area.

WHAT IS HELIUM?

Helium is a strategic, rare and highly sought-after natural resource. The European has added it to their list of critical resources. Its unique physical and chemical characteristics make it an indispensable resource for the medical, electronic, aeronautical and space industries. However, helium cannot be synthesised, has few effective substitutes and its supply in Western Europe is currently dependent on long-distance imports which are extremely energy-intensive, costly and logistically complex.

ABOUT 45-8 ENERGY

The two main partners of 45-8 ENERGY, Nicolas Pélissier and Benoît Hauville, aware of the environmental issues of our planet and keen to convert their geological expertise into an eco-committed action, started from a strong observation: 100% of the helium consumed in Western Europe is imported from the United States, Qatar and Algeria at great energy costs. In 2018, this represented 31 million cubic metres, the second largest market in the world with almost 19% of consumption.

From this alarming assessment was born 45-8 ENERGY, in 2017, based in Metz and dedicated to the exploration and eco-responsible production of helium valorized in short circuit. 45-8 ENERGY also seeks to covalorize resources that can be associated with helium in certain geological contexts such as natural hydrogen or carbon dioxide in the case of our project in the Nièvre, called Fonts-Bouillands.

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MORE INFORMATION

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