

# HYPSTER

## HYDROGEN PILOT STORAGE FOR LARGE ECOSYSTEM REPLICATION



hypster  
Hydrogen Storage

<b>Project ID:</b>	101006751
<b>PRD 2023:</b>	Panel 2 – H2 storage and distribution
<b>Call topic:</b>	FCH-02-7-2020: Cyclic testing of renewable hydrogen storage in a small salt cavern
<b>Project total costs:</b>	EUR 21 158 886.73
<b>Clean H<sub>2</sub> JU max. contribution:</b>	EUR 4 999 999.00
<b>Project period:</b>	1.1.2021–31.12.2023
<b>Coordinator:</b>	Storengy SAS, France
<b>Beneficiaries:</b>	Association pour la Recherche et le Développement des Méthodes et Processus Industriels, Axelera – Association Chimie-Environnement Lyon et Rhone-Alpes, Ecole Polytechnique, Element Energy Limited, Equinor Energy AS, ERM France, ESK GmbH, Inovyn ChlorVinyls Limited, Institut national de l'environnement industriel et des risques, Brouard Consulting SAS, Storengy SA

<https://hypster-project.eu/>

### PROJECT AND OBJECTIVES

HYPSTER aims to demonstrate the industrial-scale operation of cyclic hydrogen storage in salt caverns to support the emergence of the hydrogen energy economy in Europe in line with Hydrogen Europe's overall roadmapping. The cavern is located in Étrez in Auvergne-Rhône-Alpes in France. For the production of green hydrogen, the Étrez storage site will rely on local renewable energy sources and a 1 MW PEM electrolyser. In the long run, this facility will produce 400 kg of hydrogen per day (the equivalent of the daily consumption of 16 hydrogen buses).

### PROGRESS AND MAIN ACHIEVEMENTS

- The subsurface materials for hydrogen salt cavern storage were ordered and are now in place.

- The surface materials have been selected and ordered. The civil works necessary to install the facilities have been carried out.
- Numerical simulation models for hydrogen storage in the salt cavern have been adapted.
- A risk analysis of underground hydrogen storage in the salt cavern has been performed.

### FUTURE STEPS AND PLANS

- The hydrogen production platform facilities (electrolyser, compressor, etc.) will be received in Q2 and Q3 2023.
- The workover of the EZ53 well is ongoing and was expected to finish in April 2023. The project will build surface facilities so that the cavern can be operational before the planned tightness tests, which will take place in Q3 2023.

### QUANTITATIVE TARGETS AND STATUS

Target source	Parameter	Unit	Target	Target achieved?
MAWP addendum (2018–2020)	Power	MW	1	
	H <sub>2</sub> mass	kg	2 000	
	CAPEX	€/kg	450	
	OPEX	€/kg	1	