



FLUIDSTORY



Geoscience for a sustainable Earth

brgm

June 25, 2019

FIRST ANNOUNCEMENT- *Save the date*

European Workshop on Underground Energy Storage

7-8 November 2019, Paris, France

OVERVIEW

Energy storage will play a pivotal role in future energy systems compatible with a carbon-neutral and environmentally friendly society. It will enable to optimize the integration of renewable and recoverable energies into the electricity and heat mix and to contribute to the flexibility of energy systems, alongside improved grid interconnectivity, smart grids and demand-response functionalities. It will also facilitate sector coupling by the use of renewable power for producing green fuel in the mobility sector and green raw material for the chemical industry like hydrogen.

Energy storage in the subsurface has the potential to become an important component of transition to low carbon energy¹. Storing energy in the underground can lead to larger-scale, longer-term and safer solutions than above ground energy storage technologies, thus complementing the range of storage technologies to be able to meet very diverse needs.

ORGANISERS

This European workshop on Underground energy storage is organised by ENeRG², the European Network for Research in Geo-Energy, in collaboration with:

- EuroGeoSurveys' GeoEnergy Expert Group³
- the ANR FLUIDSTORY project⁴
- BRGM⁵, the French Geological Survey

The workshop is organised in Paris as a back-to-back event with the national energy storage days organised each year by the Energy Storage Club of ATEE⁶, the French Technical Association on Energy and Environment:

- 5-6 November: ATEE Days on Energy Storage (language: French)
- 7-8 November: European workshop on Underground Energy Storage (language: English)

Attendance to both events is encouraged.

¹ http://www.energnat.eu/system/files/documents/ENeRG_Position_Paper_2017.pdf

² <http://www.energnat.eu/>

³ <http://www.eurogeosurveys.org/expertgroups/geoenergy/>

⁴ <https://anr.fr/Projet-ANR-15-CE06-0015>

⁵ <https://www.brgm.eu/>

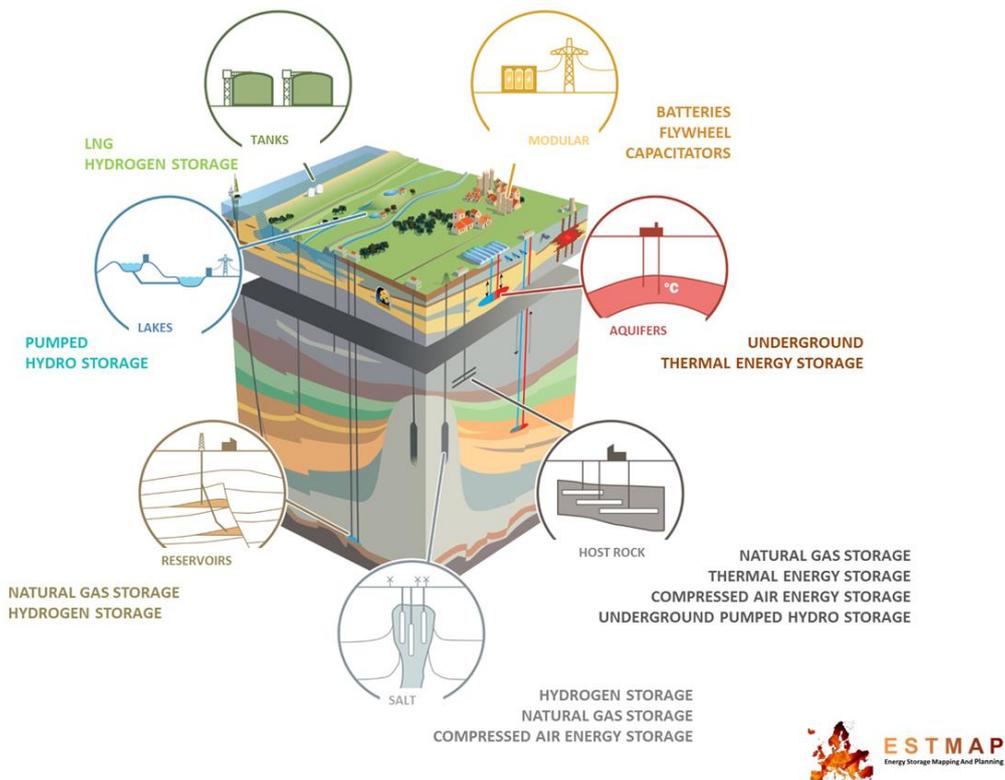
⁶ <http://atee.fr/stockage-energie>

OBJECTIVES OF THE EUROPEAN WORKSHOP

Subsurface energy storage represents a complex and broadly evolving field of research, as it covers multiple scales of application, a variety of end-user profiles, and different types of energy carriers. Subsurface storage capacities are present in many types of geological formations, each of which has its own criteria for identifying techno-economic viability. Some of the subsurface energy storage technologies (e.g. natural gas storage) have been applied at large scale for decades, while others have thus far been applied in pilot projects or at modest scale only (e.g. compressed air energy storage, heat storage). It is crucial to further increase our level of understanding of subsurface energy storage potential based on new geoscientific data, improved models and common agreed assessment principles.

The key to unravelling the full potential and effective implementation of large-scale subsurface energy storage lies in the integration of geological knowledge, engineering solutions, market economy information and a comprehensive analysis of the entire energy system. Close cooperation between all actors from science, industry and policy areas is therefore essential to a successful development.

The objectives of the workshop are to discuss current technological status and research needs for the development of the subsurface energy storage technologies, and exchange with energy producers and consumers who need energy storage solutions.



*Main types of above ground and subsurface energy storage
(Figure from the ESTMAP European project⁷)*

⁷ <http://www.estmap.eu/>



TECHNOLOGIES

Underground hydrogen storage
Underground (synthetic) natural gas storage
Underground methanogenesis
Advanced-adiabatic compressed air energy storage (AA-CAES)
Power to Gas to Power in closed loop (EMO)
Underground pump hydro storage (UPHS)
Aquifer thermal energy storage (ATES)
Borehole thermal energy storage (BTES)
Cavern thermal energy storage (CTES)
Any other innovative technologies (new engineering solutions, etc.)

TOPICS

Demand for underground energy storage in tomorrow's energy systems
Storage in cavities, old mines, depleted hydrocarbon reservoirs, aquifers, rock
Availability of selected geological formations suitable for underground energy storage
Potential of technologies
Case studies, pilot and demo projects
Risks and environmental impacts
Geological, technological, economical, legal, social issues
Exploration, development, production, monitoring, decommissioning
Systemic modelling

WHO SHOULD ATTEND

Researchers and industry experts. Energy producers and distributors. Regulators. Policy makers. NGOs. All stakeholders interested in carbon-neutral and environmentally friendly economy.

SCIENTIFIC COMMITTEE

- Dr. Isabelle Czernichowski-Lauriol (co-chair), ENeRG, BRGM, France
- Dr. Vit Hladik (co-chair), ENeRG President, Czech Geological Survey, Czech Republic
- Dr. Serge Van Gessel, Chair of EuroGeoSurveys' GeoEnergy Expert Group, TNO, The Netherlands
- Prof. Behrooz Bazargan-Sabet, Coordinator of the ANR FLUIDSTORY project, BRGM, France
- Mr. Patrick Canal, General Delegate of the ATEE Energy Storage Club, France
- Prof. Bernardo Llamas Moya, Polytechnic University of Madrid, Spain
- Mr. Fritz Crotogino, Senior Expert, DEEP.KBB GmbH, Germany
- Dr. Lionel Nadau, Energy Storage Expert, ENGIE Lab CRIGEN, France
- Dr. Simon Jallais, Industrial Risks International Expert, Air Liquide R&D, France
- Dr. Christophe Rigollet, Director of GIS Géodénergies, France

We welcome suggestions for more industry representatives in the scientific committee.



PROGRAMME

Oral presentations - by invitation

Panel debate with key experts

Poster session

The detailed agenda will be indicated in the second announcement early September.

REGISTRATION

Free of charge

Registration will open early September.

VENUE

Maison des Mines et des Ponts et Chaussées, 270 rue St Jacques, 75005 Paris

www.maisondesmines.com

CONTACT

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