High Temperature Underground Thermal Energy Storage

Publieke samenvatting / Public summary

Aanleiding

Thermal energy storage technologies need to be further developed and need to become an integral component in the future energy system infrastructure to meet variations in both the availability and demand of energy.

Doelstelling

The main objectives of HEATSTORE are to lower the cost, reduce risks, improve the performance of high temperature (~25°C to ~90°C) underground thermal energy storage (HT-UTES) technologies and to optimize heat network demand side management (DSM). This is primarily achieved by 6 new demonstration pilots and 8 case studies of existing systems with distinct configurations of heat sources, heat storage and heat utilization. This will advance the commercial viability of HT-UTES technologies and, through an optimized balance between supply, transport, storage and demand, enable that geothermal energy production can reach its maximum deployment potential in the European energy transition.

Korte omschrijving

HEATSTORE contributes to achieving the GEOTHERMICA objective of accelerating the uptake of geothermal energy by 1) advancing and integrating different types of underground thermal energy storage (UTES) in the energy system, 2) providing a means to maximize geothermal heat production and optimize the business case of geothermal heat production doublets, 3) addressing

Projectinformatie / Project information

Projectnummer / Project number
TEHE117038
Subsidiebedrag / Grant amount
€ 2.083.528,00

Algemene informatie / General information

Penvoerder / Secretariat
Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek TNO

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technical, economic, environmental, regulatory and policy aspects that are necessary to support efficient and cost-effective deployment of UTES technologies in Europe. The project will stimulate a fast-track market uptake in Europe, promoting development from demonstration phase to commercial deployment within 2 to 5 years, and provide an outlook for utilization potential towards 2030 and 2050.

Resultaat

HEATSTORE primarily addresses the thematic area 'Supply and smart integration into the energy system' employing a multidisciplinary approach, including geological characterization, risk management, systems engineering, market development, regulation, economic evaluation, environmental impact assessment and stakeholder engagement. The strength of HEATSTORE is that it demonstrates and advances a portfolio of UTES and DSM demonstration projects and case studies that are applicable in multiple EU countries. The 24 contributing partners from 9 countries in HEATSTORE have complementary expertise and roles. The HEATSTORE consortium is composed of a mix of scientific research institutes and private companies. The industrial participation is considered a very strong and relevant advantage which is instrumental for success in HEATSTORE. The combination of leading European research institutes together with small, medium and large industrial enterprises, will ensure that the tested technologies can be brought to market and valorised by the relevant stakeholders.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
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