

DemoSpeicher

Development and monitoring of seasonal heat and cold storage to demonstrate an aquifer storage facility in Germany



Key Facts



Funding Agency

Federal Ministry of Education and Research (BMBWF)



Project Call

Geo Research for Sustainability GEO:N (Geoforschung für Nachhaltigkeit) Focus: Aquifer Thermal Energy Storage (ATES) (Thermische Energiespeicherung in Aquiferen) FZK 03G0915A



Duration

07/2022 - 06/2025



Coordinator

EIFER



Partners

- Karlsruhe Institute of Technology (KIT) - Institute for Applied Geosciences (AGW)
- Tewag GmbH (TEW)
- eZeit Engineers GmbH
- Technical University of Kaiserslautern (TUK), Department of Ecology
- Insitute for Groundwater Ecology



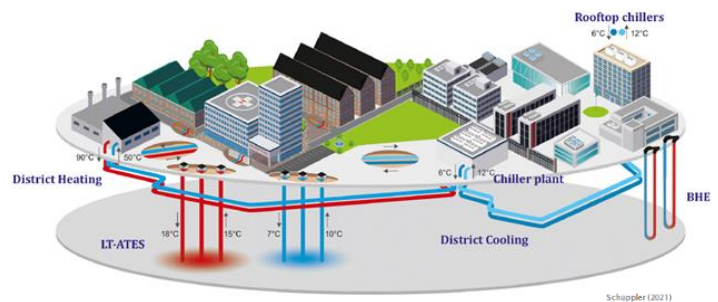
Website

<https://www.demospeicher.de/>

This project is funded by the Federal Ministry of Education and Research (BMBWF) in the frame of the GEO:N (Geo Research for Sustainability) program.

Project Objectives

- Both low temperature (<50°C) and high temperature (>50°C) heat storage in aquifers (Aquifer Thermal Energy Storage, ATES Systems) are not widely implemented in Germany and have a lack of demonstration sites. The aim of DemoSpeicher is therefore to implement a near-surface low-temperature aquifer storage system (LT-ATES) in an urban environment.
- The project will cover the entire construction and operation cycles of an LT-ATES, ranging from project design to planning, grid integration, commissioning and thermal energy supply. DemoSpeicher's ATES demonstrator will be implemented in Berlin Center, on a site which will host climate-friendly heating and cooling concepts.



EIFER's Contribution

- Project Coordinator
 - Site investigation
 - Cost-Benefit Analysis
 - Work Package (WP) Lead Monitoring & Measurement
 - Thermal-Hydraulic Monitoring
- In addition, EIFER is in charge of the monitoring of the demonstrator
 - The project integrates a comprehensive monitoring program, which will provide extensive data of thermal-hydraulic underground processes (temperatures, pressures, flow behaviors and directions of the groundwater, hydraulic gradients, groundwater chemistry and groundwater ecology as a result of thermal stress).

Contact

Dr. Detlev Rettenmaier
+ 49 (0) 721 6105 1426
detlev.retttenmaier@eifer.org

EIFER - Europäisches Institut für
Energieforschung EDF-KIT EWIV
Emmy-Noether-Straße 11
76131 Karlsruhe, Germany
www.eifer.org