

# Thermal energy storage brussels



## Overview

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Shallow open-loop geothermal systems function by creating heat and cold reserves in an aquifer, via doublets of pumping and reinjection wells. Three adjacent buildings in the center of Brussels have adopted this type of aquifer thermal energy storage (ATES) system. Featured Application: This work evaluates by numerical simulations the respective influences of three ATES systems located in two different aquifers in the center of Brussels. Policy recommendations are also discussed. In 2021, renewable energy made up 37% of the EU's electricity mix, and. A first shallow open-loop system (ATES) with pumping and reinjection wells in Cenozoic mixed sandy and silty shallow formations was started in 2014 in the center of Brussels for heating and cooling an important building.

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### Studying interactions of five adjacent Aquifer Thermal Energy ...

systems (ATES) were studied and installed in two overlaying aquifers in the center of Brussels. For two of them, operations started in 2014 and 2017 resp.

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### Modelling Interactions between Three Aquifer Thermal Energy ...

Three adjacent buildings in the center of Brussels have adopted this type of aquifer thermal energy storage (ATES) system. Two of them exploit the same aquifer consisting of Cenozoic sands, and ...



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### Thermal Energy Storage

Three different thermal energy storage principles can be observed: sensible heat storage, latent heat storage, and thermochemical heat storage. These technologies store energy at a wide spectrum of ...

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### Modelling Interactions between

## Three Aquifer Thermal Energy ...

Abstract: Shallow open-loop geothermal systems function by creating heat and cold reserves in an aquifer, via doublets of pumping and reinjection wells. Three adjacent buildings in the center of

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## Assessment of Seasonal Aquifer Thermal Energy Storage as a ...

Seasonal aquifer thermal energy storage and recovery (ATES) help urbanized areas to contribute to their energy demands. We assess the potential of ATES in the Brussels-Capital Region, ...

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## Five adjacent Aquifer Thermal Energy Storage (ATES) systems in ...

Five adjacent Aquifer Thermal Energy Storage (ATES) systems in Cenozoic and Palaeozoic aquifers in Brussels: numerical simulation of their possible interactions

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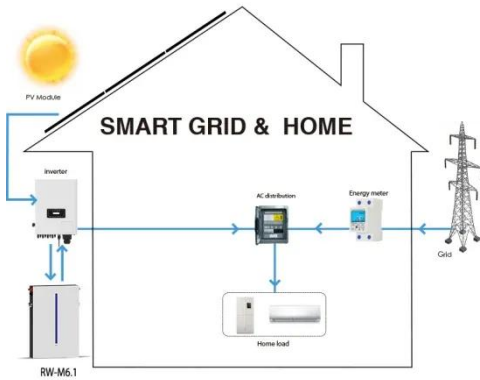


## Numerical Modeling of the Interference of Thermally Unbalanced ...

Abstract: A numerical model was built using FEFLOW® to simulate groundwater flow and heat transport in a

confined aquifer in Brussels where two Aquifer Thermal Energy Storage (ATES) systems were ...

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