Accelerate the uptake of Pit Thermal Energy Storage: the TREASURE project

Online workshop of IEA ES Task39

Wim van Helden
AEE INTEC, Gleisdorf, Austria
LTES as pivotal element in the future district heating systems

Austrian Flagship project giga_TES (2018-2021)
https://gigates.at
Potential of Pit Thermal Energy Storage for DH in Europe

Based on:
- EU total DH final energy consumption 446 TWh (2018)
- 40% of LTES for DH is PTES
- 30% of annual heat sales to be stored
- Presently needed PTES capacity for DH of 54000 GWh
- 4-fold growth of DH until 2050

Accumulated PTES Capacity (GWh)

220000

Graph showing accumulated PTES capacity from 2025 to 2050 with a peak of 220000 GWh.

Legend:
- TREASURE Inspired PTES
- Satellite Initiatives
- TREASURE Demo
- Monitoring PTES
Measures to accelerate the uptake of PTES

Raising awareness
- Information about technologies, processes, permits, procedures, …
- Active dissemination to and participation of stakeholders

Reduce uncertainties
- Awareness on permitting; uniformity of procedures
- Work on standardisation; key performance indicators

Shorten the realisation time
- Uniform communication and protocolling; experience exchange

Decrease costs
- Component and process developments; experience exchange
Demonstrating large pit thermal energy storages and improving their components, processes, and procedures for an accelerated realisation of 100% sustainable district heating networks in Europe.
Our ambition

The TREASURE project is striving to set a new standard in the realisation of PTES systems
Project outline

TREASURE enables the realization of seven Pit Thermal Energy Storage (PTES) demonstrators in five different countries

• 7 demonstrators
• 15 satellite initiatives
• Development of Tools, Components, Methods and Processes
• 25 Partners, 8 countries
• Starting 2024, 4 years