EUROPEAN PARTNERSHIP
demonstrating 7 Pit Thermal Energy Storages in Europe

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TREASURE:

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.
Example of PTES

Pit thermal energy storage in Vojens, DK. 200,000 m³

Source: Arcon-Sumark
LTES as pivotal element in the future district heating systems

Austrian Flagship project
\[\text{giga}_\text{TES} \ (2018-2021)\]
https://gigates.at
Potential of Pit Thermal Energy Storage for DH in Europe

Based on:
- EU total DH final energy consumption 446 TWh (2018)
- 30% of annual heat sales to be stored
- 40% of LTES for DH is PTES
- Presently needed PTES capacity for DH of 54000 GWh
- 4-fold growth of DH until 2050
TREASURE enables the realization of seven Pit Thermal Energy Storage (PTES) demonstrators in five different countries.
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
Raising Awareness

- Exploitation and commercialisation plans
- EU-wide regulatory and policy measures
- Roadmaps to wide-scale replication
- Targeted information for stakeholders
- Training workshops
- Interaction with (15) satellite initiatives
Reduce Uncertainties, Shorten Realisation time

- LCA, techno-economic and social assessment  WP6
- Monitoring plans   WP5
- Development of workflow, tools and KPIs   WP4
- Storage Building Information Model, S-BIM   WP3
Decrease Costs

- Components and Process development
  - Walls, cover design
  - Improved (design) simulation models
  - Reduction of corrosion risks
  - Implementation guidelines

WP3

WP2

- Optimisation of realisation phases with Demo partners
  - Pre-feasibility
  - Screening
  - Financing
  - Organisation
  - Permits
  - Technical design
  - Monitoring
  - Maintenance and operation
Conclusion

LTES are key to 100% renewable and flexible DH systems. TREASURE will work on components, processes and procedures to accelerate market uptake of LTES.
Consortium partners

- Municipalities/DH companies
  SEC & SEC Region (PL); Pau (FR); JKP Grejanje Pacevo (RS); Stadtwerke Hechingen (DE); RAFAKO (PL); Hansestadt Rostock (DE); Wien Energie (AT)

- Planners, engineers
  Newheat (FR); Aalborg CSP (DK); SOLID (AT); ENGIE (FR)

- Construction companies, materials producers:
  PORR (AT); VINCI (FR); Glapor (DE)

- R&D institutes:
  AEE INTEC (AT); Planenergie (DK); Solites (DE); Hamburg Institut (DE); DTU (DK); Energieinstitut JKU (AT); GEO (DK); Technische Universität Dresden (DE)

- Dissemination, exploitation, stakeholders:
  Fenix TNT (CZ); Euroheat & Power (BE)