

Detailed performance and environmental monitoring of aquifer heating and cooling systems

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The project intends to quantify the performance and environmental impact of large scale aquifer thermal energy storage, as well as point at recommendations for operating and estimating the environmental footprint of future systems. Field measurements, test of innovative equipment as well as advanced modelling work and analysis will be performed. The following aspects are introduced and covered in the presentation:

- Thermal, chemical and microbiological influence of aquifer thermal energy storage systems: measurement and evaluation of real conditions and the influence of one system in operation.
- Follow up of energy extraction from aquifer as compared to projected values, recommendations for improvements.
- Evaluation of the most used thermal modeling tool for design and calculation of groundwater temperatures, calculations with MODFLOW/MT3DMS
- Test and evaluation of optical fiber cables as a way to measure temperatures in aquifer thermal energy storages