

Project no. 339-039

Groundwater Heat Pumps and Cooling Using Aquifers as Seasonal Storage

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The results from this project show that there is a foundation for significant utilisation of the energy content in groundwater for both cooling and heating, and that this offers major environmental and financial benefits compared with traditional, compressor-based facilities.

At the same time, the ATES concept appears to be well suited to the utility companies' energy saving activities as these companies may typically undertake the risky pilot surveying of local operating conditions against taking ownership of the energy savings achieved. At the same time, it is expected that the Environmental Protection Agency's executive order may help to streamline processing by the authorities.

Through the collation of the latest international experience and establishing partnerships with some of the most talented experts in the field, this project has resulted in reasonable confidence that groundwater reservoirs in some parts of Denmark can be utilised for eco-friendly cooling and heating. The ATES concept is well suited as a supplement to other forms of energy supply with less environmental impact. As a rise in demand for cooling both on business premises and in homes is expected, an ATES system may act as an integrated air conditioning system which can meet users' varying temperature regulation needs all year round.