## Finland energy vault



## How much thermal energy can a Finnish city heat a year?

The total thermal capacity of the fully charged seasonal thermal energy storage is 90 gigawatt-hours. This capacity could heat a medium-sized Finnish city for as long as a year. Broken down into smaller energy units, this amount of energy is equivalent to, for example, 1.3 million electric car batteries.

Could electric car batteries heat a Finnish city all year round?

The energy equivalent of as much as 1.3 million electric car batteries and could heat a medium-sized Finnish city all year round. A seasonal thermal energy storage will be built in Vantaa, which is Finland's fourth largest city neighboring the capital of Helsinki.

Which type of heating is most popular in Finland?

District heating by far the most popular form of heating for buildings and homes in Finland. This is made possible by the underground district heating network that most properties are connected to. There are more than 600 kilometers of underground district heating networks in Vantaa.

World"s largest thermal energy storage to be built. The largest seasonal thermal energy storage in the world is reported to be built underground in Vantaa, Finland. Varanto © Vantaa Energy. Varanto (meaning vault or reserve in english) will have fully charged seasonal thermal energy storage of 90GWh.

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A seasonal thermal energy storage will be built by Vantaa Energy in Vantaa, which is Finland's fourth largest city neighboring the capital of Helsinki. When completed, the seasonal energy storage facility will be the largest in the ...

As well as waste heat, the facility also enables the cost-effective storage of renewable energy, boasting the ability to store an amount of energy equivalent to 1.3 million EV batteries, enough to heat a medium-sized Finnish city all year round. The project is set to cost EUR200m (US\$217.2m). "The world is undergoing a huge energy transition.

In 2020, the largest thermal energy storage (TES) facility in Finland was put into operation in Vaskiluoto, Vaasa. It will diversify the region's thermal energy generation both now and in the future.

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What type of solutions are already available across the globe, and how might they be applied in Finland? What are the use cases and value creators for the small communities, and how should it be communicated efficiently? This project paints a picture of a future where small-scale energy storages are a viable option to any community or area.

The project aims to investigate the potential of different energy storage technologies in Finland. These should be able to store electrical energy and use it to produce electricity, heat, or different chemicals. Table 1 represents the general set of technologies that are currently used or researched worldwide.

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A study published by a team of international researchers last month found that gravity batteries in decommissioned mines could offer a cost-effective, long-term solution for storing energy as the...

Vantaa Energy is building a seasonal thermal energy storage facility in Vantaa, Finland. When completed in 2028, it will be the largest in the world by all standards and its thermal energy capacity could fully charge as many as 1.3 million electric car batteries.

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