

Press Release from AFRY

Vantaa Energy chooses AFRY as EPCM service provider of the world's largest cavern thermal energy storage

AFRY has been commissioned by Vantaa Energy, one of Finland's largest city energy companies, for engineering, procurement, and construction management services (EPCM) for a seasonal energy storage in the city of Vantaa, Finland. The cavern thermal energy storage is set to be the world's largest, storing energy produced from industrial waste heat, waste-to-energy processes, and electric boilers powered by renewable electricity. The unique project will benefit from AFRY's extensive expertise and strength in all necessary engineering disciplines, including rock, civil, energy, process and plant engineering.

In a future fossil-free energy system, the share of weather-dependent energy production increases, necessitating flexibility between consumption and production. The cavern thermal heat storage offers an excellent solution by storing excess waste heat and surplus heat generated from waste-to-energy during summertime for utilisation during the cold winter season.

"The cavern thermal energy storage helps us do more with less by enabling us to store previously wasted heat. It assists us in building a 'heating hybrid system' for Vantaa, allowing the most competitive way to heat carbon-neutrally. During summers, Vantaa has low demand for heat, but it increases significantly in winter. We can store excess heat generated during periods of low heating demand and release it to the district heating network during cold spells, thus avoiding the use of expensive fossil fuel imports. Additionally, we can produce heat with electricity when the electricity prices are low. Ultimately, our customers benefit the most, as district heating in Vantaa remains affordable, stable, and increasingly environmentally friendly," stated Jukka Toivonen, CEO of Vantaa Energy.

"Advancing the green transition in energy production is a key part of AFRY's strategy. We are pleased to continue our previous collaborations with Vantaa Energy in supporting carbon-neutral energy production. The cavern thermal energy storage facility plays a significant role in Vantaa Energy's transition to clean production, and it's great that we can support the company in this important step," said Ilkka Heikkilä, Regional Director, Renewables and Thermal Energy.

The volume of the energy storage facility, including process spaces excavated into the rock, is approximately 1,100,000 cubic meters. The stored heat in water can be utilised as district heating during winter. The storage facility's thermal capacity is 90 GWh, equivalent to the annual heat consumption of a medium-sized Finnish city. According to the plan, the heat from the cavern thermal storage could be utilised in heat distribution starting from the end of 2028.

The EPCM assignment builds upon AFRY's previous work in the project, where AFRY handled environmental impact assessments, environmental permit processes, and engineering of the development phase.

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The value of AFRY's assignment is approximately 170 MSEK over a period of five years.

For more information, please contact:

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AFRY provides engineering, design, digital and advisory services to accelerate the transition towards a sustainable society. We are 19,000 devoted experts in industry, energy and infrastructure sectors, creating impact for generations to come. AFRY has Nordic roots with a global reach, net sales of 27 BSEK and is listed on Nasdaq Stockholm.

Making Future