



Fortum - Utilising waste heat with 2 Unitop 50 FY heat pumps

Client

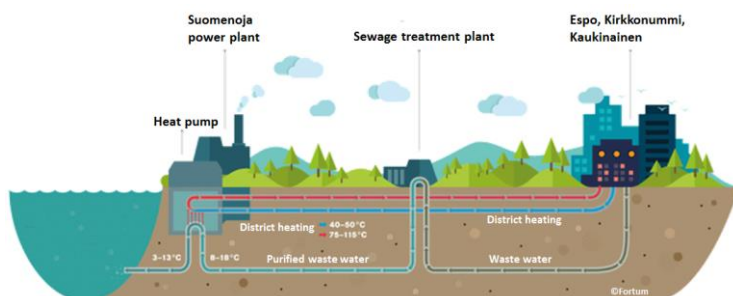
Fortum Power and Heat Oy
FI-00048 Fortum / Finland

Plant location

Fortum Suomenoja Power Plant, Hylkeenpyytäjantie 4
FI-02270 Espoo / Finland

Purified wastewater is being utilised as heat source

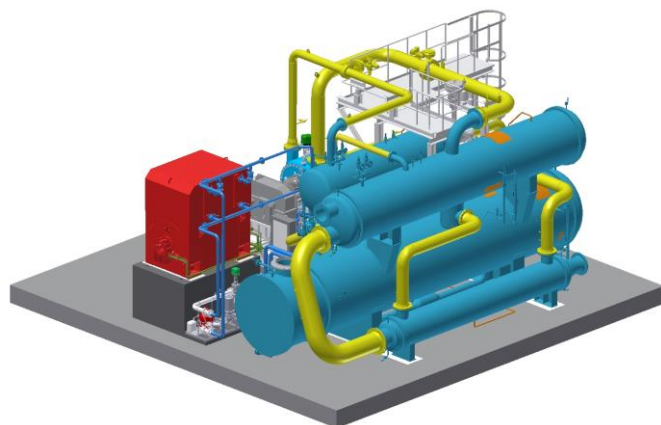
In Espoo, Finland, Fortum has built a new heat pump station near the Suomenoja power plant. The heat pump station with two large scale heat pumps uses the waste heat from the purified wastewater from the near-by wastewater treatment plant before the water is released into sea. Should waste water be sparse during summer and autumn, it can be replenished by up to 50% sea water from the Baltic Sea. The station produces 340 GWh heat per year, corresponding to the annual consumption of roughly 17'000 single-family homes. The Heat pumps also cool the wastewater, thus reducing the environmental impact of the wastewater treatment plant. The heat is utilised in the district heating network of Espoo, reducing the CO₂ emissions of district heating in the area by 15%. The district cooling system is operational in the year 2016. This step will considerably enhance the overall economic benefit of the two heat pumps.



2 Unitop 50 FY heat pumps from Friothersm

Each Unitop 50 FY heat pump consists of a heavy duty industrial type centrifugal compressor at its heart. Together with the heat

exchangers and the control system it is especially adapted to comply to 100% with the client requirements regarding flexibility of operation modes, high efficiency and operational reliability. The service friendly design allows limiting service and maintenance work to a minimum while the units are operational for decades.



Main technical data, per unit (effective values)

Operating seasons:	Summer	Winter
Heating capacity:	23'500 kW	21'000 kW
Cooling capacity:	17'300 kW	15'600 kW
Hot water in/out:	50 °C / 65 °C	43 °C / 60 °C
Cold water in/out:	14 °C / 7 °C	10 °C / 3 °C
COP:	3.7	3.9

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