Espoo Clean Heat

Carbon neutral district heating in Espoo in the 2020s

Powered by: ESPOO ESBO fortum
Fortum and the City of Espoo have committed to carbon-neutral district heating in the district heating network operating in the Espoo, Kauniainen and Kirkkonummi regions in the 2020s. Now the development work is being accelerated with a new intermediate goal to discontinue the use of coal in 2025.

The accelerated project for carbon-neutrality in 2020's is called Espoo Clean Heat. It is the most significant climate action in Espoo.

The new generation of district heating is based on replacing fossil fuels with smart and flexible solutions, e.g. by utilising waste heat, renewable electricity, geothermal energy, and bioenergy. Artificial intelligence optimises the district heating system’s operations. www.espoocleanheat.com

#jointhechange
Fortum is one of the leading heat producers globally

20+
Production and distribution systems

1,5
Million end-users
Espoo district heating transformation journey 2014–2029

- Suomenoja heat pump on
- Kivenlahti pellet conversion
- Vermo BIO-oil plant
- Air-to-water heat pump pilot
- Two way district heating launched
- Kivenlahti BIO-heating facility on in 2020
- Suomenoja 3. heat pump unit on in 2021
- Suomenoja S03 coal unit closed
- Suomenoja S06 gas unit closed
- Ammässuo multifuel plant on
- Geothermal heat sources in use?
- Heat storages?
- Regional projects / decentralized production

Illustrative

% CO₂ emissions in relation to 2014 level
% share of carbon neutral production


Powered by: Espoo, Clean Heat, Fortum
Amount of carbon neutral district heating in Espoo (forecast)

- 2014: 1%
- 2018: 26%
- 2020: 40%
- 2022: 50%
- 2026: 85%
- 2029: 95%*

* Due to security of supply, a certain proportion of natural gas remains in capacity. This proportion will be compensated.
June 2020:
Kivenlahti bioheating plant

• A 58 MW heating plant utilizing biomass to be completed on the same site as the existing pellet plant
• In commercial production in June 2020
• Replaces one of the old coal units in Suomenoja, increasing the carbon neutral share of Espoo's district heat production to 40%
Autumn 2020: Otaniemi geothermal plant

- Our partner St1 runs the world's deepest geothermal heat plant that reaches the depth of 6.4 km
- All the heat generated by the plant is purchased to Fortum's district heating network in Espoo
- At its best, the plant produces 40 megawatts of heat
- The plant is expected to start up in the autumn of 2020
2021: New heat pump unit at the Suomenoja plant

- A new 20 MW heat pump unit will be built at the Suomenoja heat pump plant
- Like the previous units, the new unit also utilizes the wastewater heat from the treated wastewater as well as seawater in the summer
- The plant is expected to start up in the autumn of 2021
- The plant will increase the carbon neutral share of Espoo's district heat production to 50% in 2022
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