

# Fortum's Annual Report 2014

*Fortum is an energy company highly committed to sustainability. We strive to respond to the needs of our customers by generating, selling and distributing low-carbon electricity and heat and by offering energy-sector expert services.*

## Heat-only production

Fortum has nearly 200 heat-only plants in Finland, Poland, the Baltic countries and Russia. The plants use a versatile mix of fuels as well as heat pumps to produce district heat, particularly during peak loads. The heat plants produced 10% of our total heat production in 2014.

The fuels used in heat production include natural gas, biomass, coal and fuel oil. The size of the heat boilers varies greatly: the smallest have a capacity of less than 1 MW and the largest close to 200 MW. Heat boilers have a good efficiency and generally utilise more than 90% of the fuel's energy. The environmental impacts from heat-only production are similar to those from [combined heat and power production](#).

We are continually developing new ways to improve production efficiency to minimise the environmental load. For example, in Espoo we have two heat pump plants that transfer waste heat from the data centres of IT companies into the district heat network. At the beginning of 2015, we commissioned a new heat pump plant near the Suomenoja power plant. It recovers heat from the city of Espoo's purified wastewater before the water is piped into the sea. Cooling the water before it is released into the sea reduces the environmental impacts of the wastewater treatment plant. The heat pump plant annually produces about 300 GWh of heat for the Espoo district heat network. The production corresponds to the annual consumption of about 15,000 single-family

homes.

In Stockholm, Fortum Värme has more than 20 heat-only boilers that are fuelled by fuel oil and bioliquids. Värme also has three big heat pump plants that use seawater to produce heat for Stockholm's district heat network. Stockholm also has an extensive district cooling network that uses heat pumps and heat exchangers to produce cooling. A heat pump is an energy efficient, climate benign and low emissions production form. The only emissions are the possible minor leaks of refrigerants from the pump equipment. Other environmental impacts of heat pumps mainly stem from the production of the electricity they use.