



# Joutsan Lämpö Oy

The municipality of Joutsa has outsourced the heating of buildings in the town centre, including municipal and office buildings and most residential buildings, to Joutsan lämpö Oy (Ltd.). However, the plant and heating network are owned by the municipality. This small town with about 5,000 inhabitants has another oil fired heating plant for peak loads and to serve as a back up system during service and possible disturbances of the biofuel plant.



## Fuel procurement

All wood fuel is provided by Metsäpirkka Ky (Ltd. partnership), a local forest service company. Wood chips are made of whole trees, predominantly from early thinnings. The main tree species is birch (*Betula pubescens*). The forest entrepreneur delivers wood chips directly to the plant where each load is weighed and moisture samples are taken. Wood chips are paid for based on their energy content (€/MWh). Because of limited storage space most wood fuel has to be stored outdoors on a large asphalt field next to the wood chip silo. In winter (Dec-Feb) peat is also used as a fuel.

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## Heating plant

The heating plant project was started with a feasibility study by an engineering consultant. Based on the results of the study the delivery of the plant was put out to tender. Putkimaa Oy (Ltd.) made the best bid and was chosen to design and deliver the plant. The municipality made all investments and the plant started operating in 2000.

There are four boilers in the boiler house of which two are 1.25 MW biofuel fired two (1.25 and 0.7 MW) oil fired back up boilers. The biofuel boilers are cylinder shaped and placed horizontally, typical to many oil fired boilers by the manufacturer. The positioning and shape enable a longer combustion chamber with convection tubes. However, the quality of fuel has to be good and even, to ensure flawless operation of the system. For controlling, typical fuzzy logic and remote control via cell phone or computer are used.

## Facts

Boiler output	2 x 1.25 MW wood fired and 1.25 MW and 0.7 MW oil fired boilers
Fuel	Wood chips 35% peat 51% and oil 14 %
Heated building volume	325,000 m <sup>3</sup>
Heat production	15,000 MWh
Investment costs	1,170,000 €
Operation started	2000

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