



Wood Heat Solutions

Research and development solution for small-scale district heating and heating entrepreneurship based on forest fuels

Mapping the fuel potential and sources

- Annual available forest fuel resources
- Distribution of procurement possibilities
- Transport distances

Defining the best fuel wood supply chains

- Optimized harvesting, chipping and transportation technology
- Procurement cost analysis
- Annual fuel supply costs

Finding the right business model and technology for heating plants

- Heating entrepreneurship and other small and medium-sized enterprises (SME)
- Optimized technology and scale of operation
- Analysis of plant economy

To make wood heat attractive to the consumer, it must compete on price, performance and reliability. Long experience in Finland has shown that successful heating plants need suitable wood fuel resources, effective wood fuel procurement methods, approved heating plant technology and a functioning business model.

Compared with large combustion devices, small and medium-scale boilers are more sensitive to the quality of wood chips. Chips of the right fraction size and

moisture content are crucial to the reliable operation of a heating plant. Choosing an effective supply chain from harvesting, storage and seasoning to chipping and transportation ensures that the wood fuel is of good quality.

Wood heat business models are designed to organize and define responsibilities and ownership among all the involved stakeholders, e.g. the seller and buyers of the service, subcontractors and fuel producers. In Finland, the heat energy business often starts with the customer, such as a municipality, making the investment and an entrepreneur running practical operations. The following business models are used nowadays:

- A customer, such as a municipality, invests in and owns the heating plant, and an entrepreneur manages the fuel supply and operates the plant
- An entrepreneur or group of entrepreneurs invests in, owns and operates the heating plant
- In a network business model a large enterprise organizes heat production through its networks
- In an ESCO model a company from outside provides the services and investments necessary to establish a heating plant
- In a franchising model the franchisee is allowed to operate according to the franchiser's business concept

Wood fuel sources

Most of the woody biomass comes from privately owned forests. Small heating plants use mainly small tree chips from young thinnings.



Harvesting

Most harvesting is done by forest companies or forestry societies. However, some forest owners are involved in harvesting wood on their own land.



Storing

Whole trees are seasoned 6-12 months at a landing.



Wood heat supply chain

Ash

Wood ash can be recycled back to the forest.



Heating plants

The output of an average heating plant is 0.5–1 MW, and the consumption of wood chips is 1–5,000 solid-m³.



Local entrepreneurs

Chipping and transportation is usually done by local entrepreneurs.

Contact us to find your wood heat solution!

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