



***Enon
Energia
Osuuskunta***

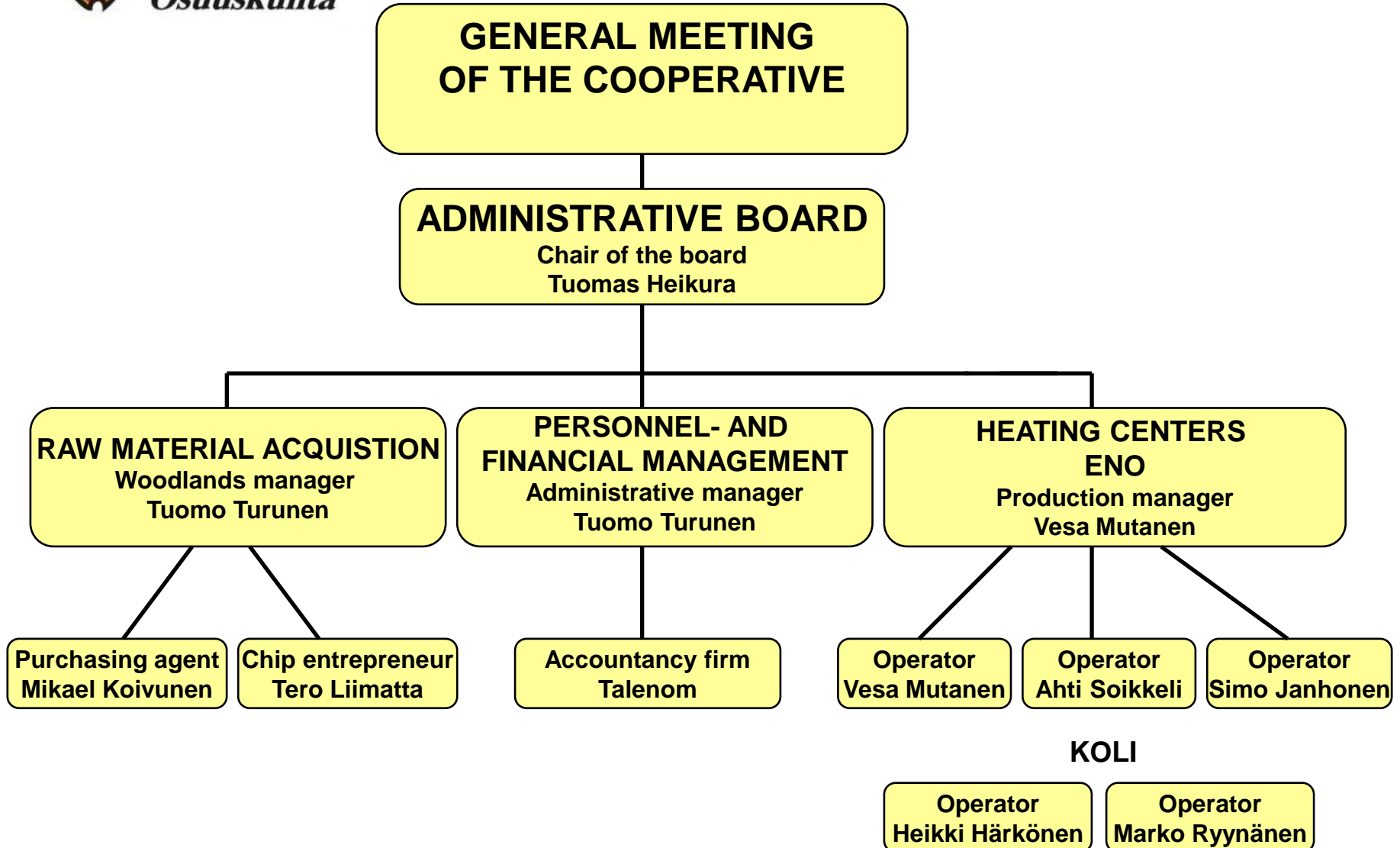
Local, renewable wood energy

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2023

THE BEGINNING TOOK YEARS

The purpose is to produce heating energy by providing wood chips for the district heating plants

- The first meeting dealing with the topic took place in February 1996
- The meeting that led to the establishment was held on the 15th of September 1999. At the time of the foundation there were only 12 members (now 52 members)



OWN HEATING PLANTS

- Commercial operation started: 2000
- Bio boilers in the plant of Alakylä :1.2 MW_{th}+0.8 MW_{th}
Yläkylä:0.8 MW_{th},Uimaharju 1 MW_{th}+1 MW_{th},Koli:1 MW_{th}
- Combustion method: mechanical grate
- Feeding: Stoker dischargers and drag chain conveyors
- Fuel storage: 100 loose-m³ to 300 loose-m³
- Heated volume 292 000 m³, primary and secondary school buildings, high school, library, sports hall buildings, health centres, fire station, old people's home, business premises, church hall, hotel and terraced houses
- Heating pipe network 11 300 m
- Heat production about 15 000 MWh
- Controlling: Automated GSM alarm and network connection for adjustment
- Owner and operator: Eno Energy Cooperative

ENO YLÄKYLÄ



UIMAHARJU



ENO ALAKYLÄ



KOLI



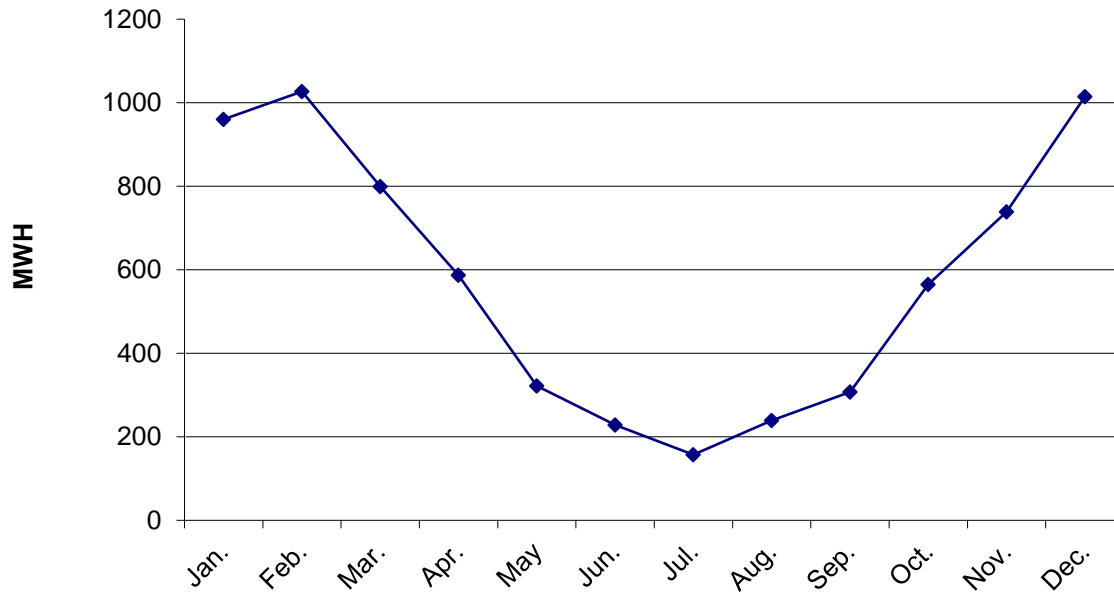


SOLAR PANELS OF ALAKYLÄ

21 kWp, generation of electricity 12 000-13 000 kWh/year



HEAT SALES MONTHLY ENO ALAKYLÄ





PELLET CONTAINER

160 kW



A total of 7 bio boilers and 5,96 MW_{th}

BUILDING OF THE HEATING PIPE NETWORK AND HEAT EXCHANGER



BENEFITS

- Heat is cheaper for consumers compared to light fuel oil
- Heating centers replace about 2 million liters oil every year
- This amount is equivalent to approximately 27 000 loose-m³ forest chips
- About € 2 000 000 were saved by the local economy
- As a result net carbon dioxide emissions were reduced by near 5 million kilos annually
- All employment effects of using the forest chips at this consumption rate are between 7-10 man-years
- The ashes and its nutrients can be returned back to the forest



WOOD FUEL HARVESTING IN ENO

Raw materials

- Small trees by manual felling about 10%



Raw materials

- By multi-tree processing about 85%



YOUNG FOREST THINNINGS ABOUT 200 HA EVERY YEAR

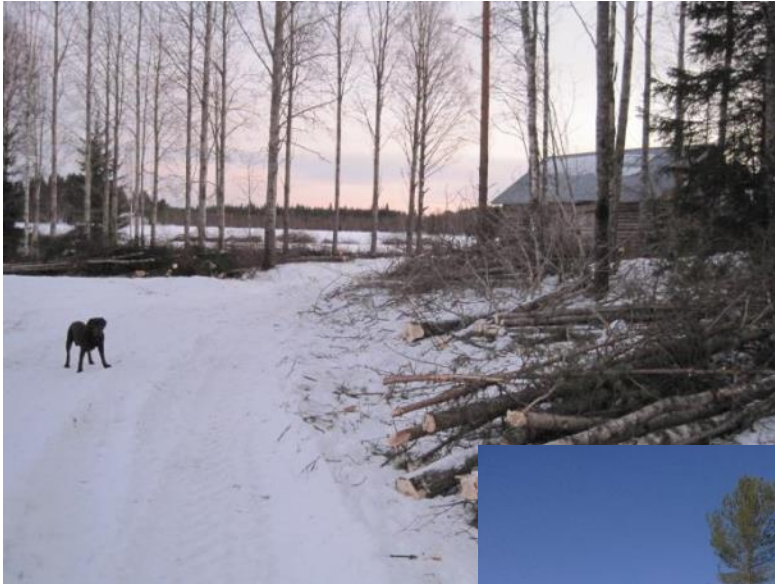


Before



After

FIELD BORDERS THINNING IS ONE OPTION



Raw materials

- Logging residues about 2%
- Sawdust about 3%



FOREST HAULAGE BY FORWARDER



HIGH QUALITY RAW MATERIAL



CHIPPING AND TRANSPORT BY TRUCK TO THE HEATING PLANT



“BIO TOURISM” OF ENO ENERGY COOPERATIVE

- During 18 (before covid) years 329 groups and 5 336 visitors
- About 60 % of groups come from abroad
- Usually, first there is a one hour lesson indoor and after that tour to the heating plant and then felling and/or chipping demonstrations
- Usually takes about 2-3 hours, sometimes the whole day
- Presentations have been charged
- This service has not been marketed





GREEN SUN ENERGY

”think globally act locally”



www.enonenergia.fi

Thank you!

