



Imatran Lämpö

Biomass heating plant operation | Imatra, Finland

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Turo Valkama, production manager



City of Imatra

- Town in eastern Finland
- Population 26 000
- Surface area 191,3 km²



Imatran Lämpö Oy – About us

- Owned by the city of Imatra
- Turnover around 13 million euros
- District heating sales 150-160 GWh
- 12 employees and several subcontractors



**District Heat
production**



**Distribution of
District Heat and
Natural gas**



**Sales and
customer service**



24 h-on call Duty

Heating plants



Virasoja HOB plant

- 2 x 15 MW
- Heat recovery and flue gas cleaning



Rajapatsas HOB plant

- 4 MW



Immola HOB plant

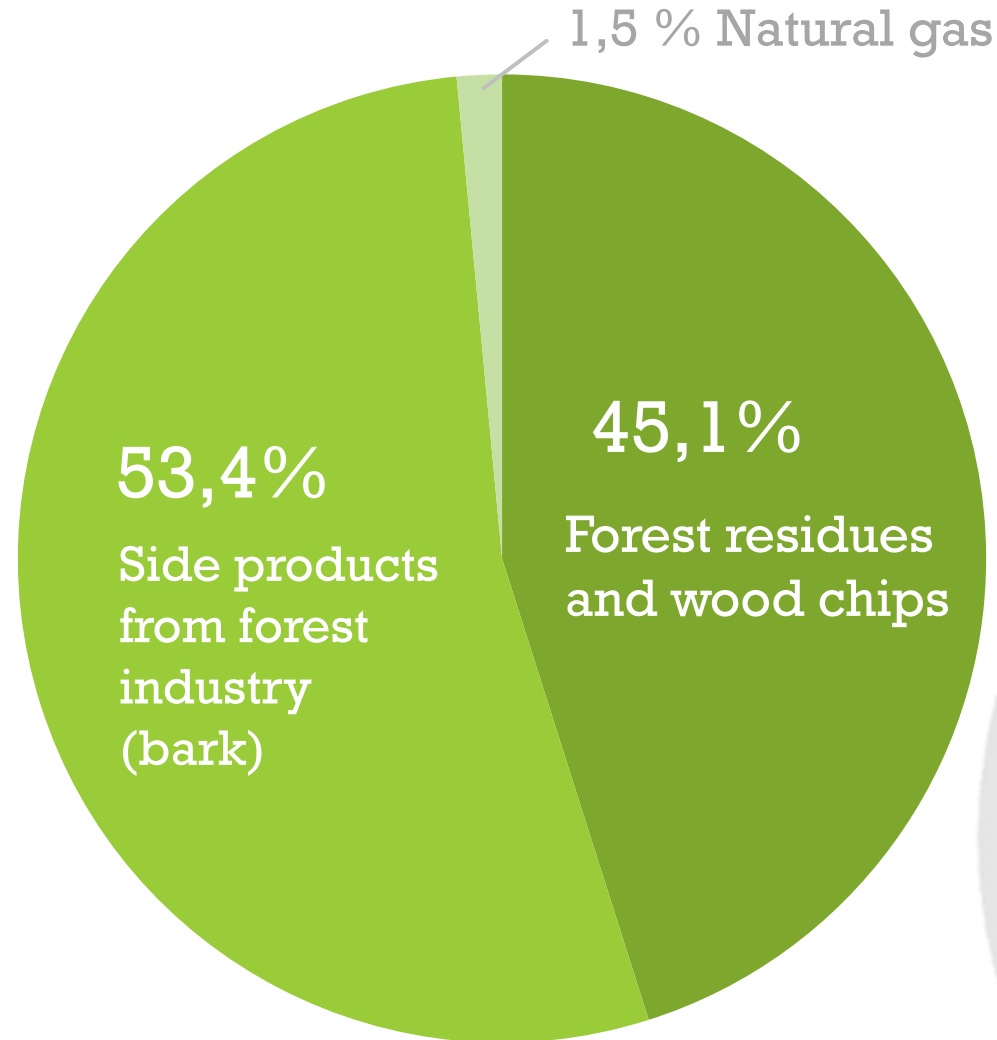
- 1,5 MW

Energy sources

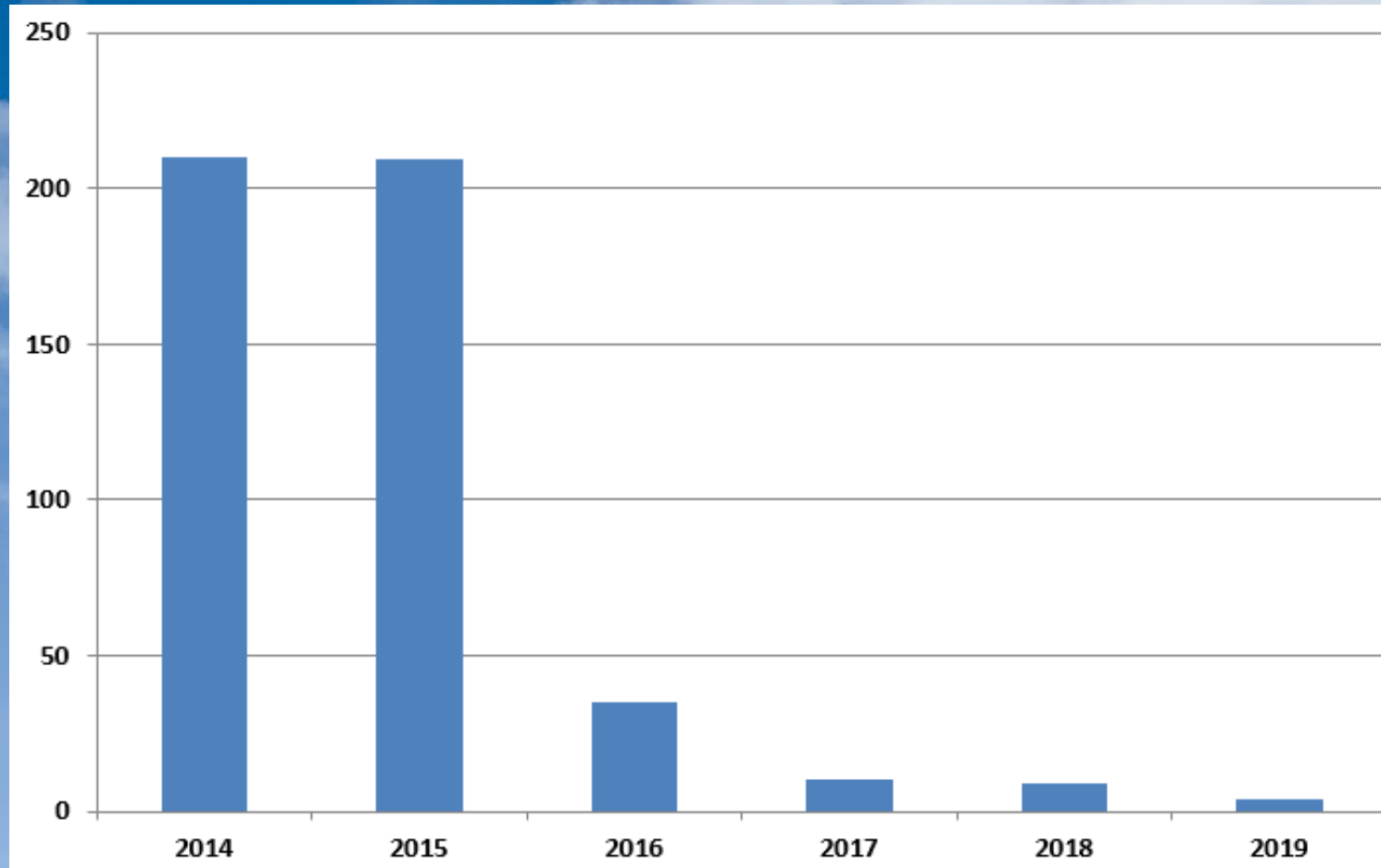
District Heat production based on bioenergy sources.

Energy sources for District Heat production in Imatran Lämpö year 2019

- Total 183 GWh
- In year 2019 **98,5 %** of district heating made by biomass
- In year 2014 100% of DH-production with natural gas



CO₂ emissions of District Heat



Quality of biomass

- 85 % of interrupts of process caused by fuel



Large wooden objects inside the fuel



Ice blobs inside the fuel

Fuel costs vs. O&M costs

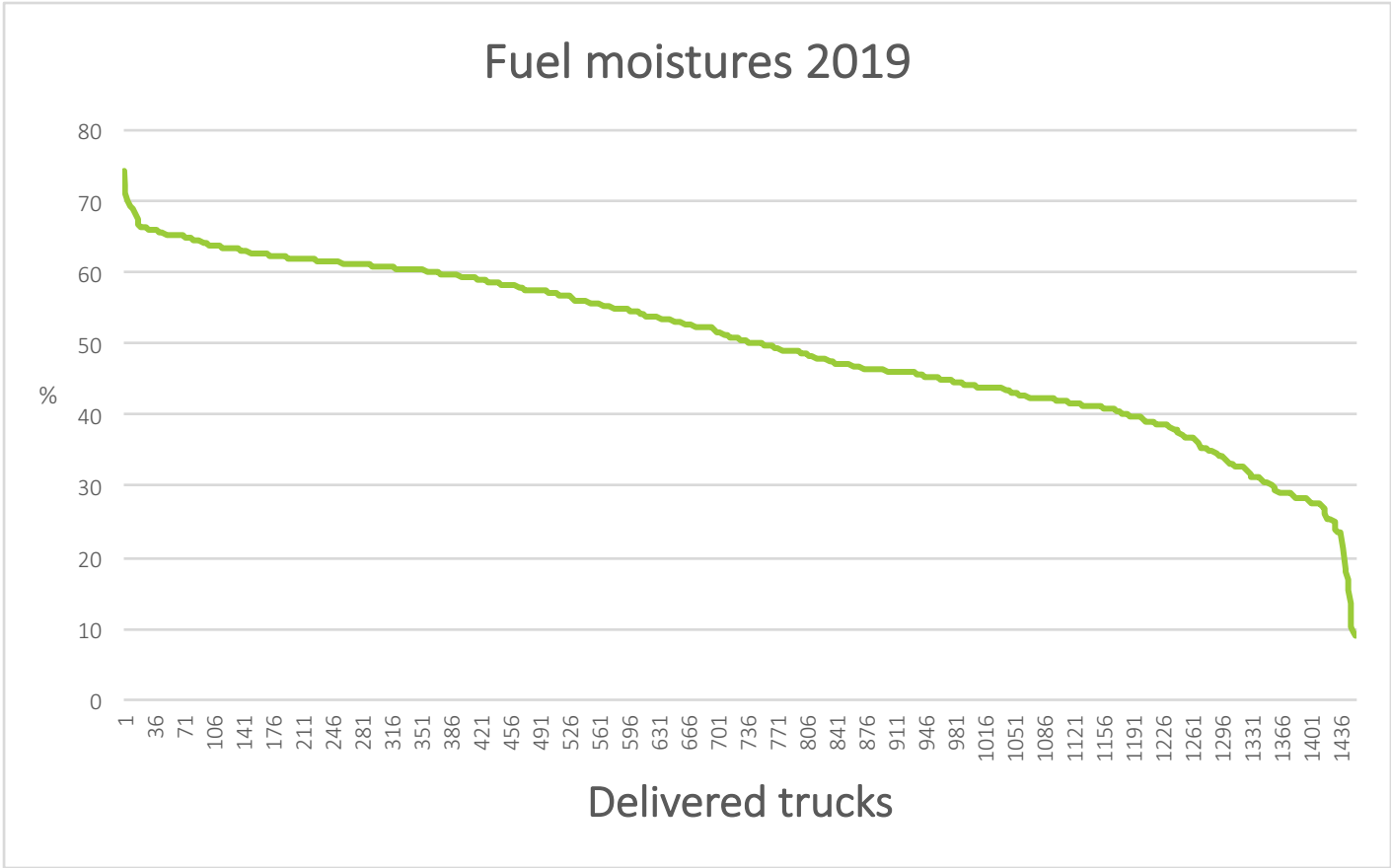
Better fuel

- + Less interrupts
- + Less operation and maintenance costs
- More fuel costs



Moisture

- 2019 awerage moisture 51,1 %
- 2019 more than 400 trucks over 60 % moisture



Flue gas condencer

- Year 2019 11,2 % of district heating made with flue gas condenser
- 160 trucks less fuel delivered to Virasoja heating plant
- Electrical filter before condenser



Maintenance planning

- Planning of annual maintenance break starts 6 months earlier
- Step ahead with inspections



Economics

- Fuel price 20 €/MWh
- District heating customer price 60-70 €/MWh
- Electricity customer price 30-50 €/MWh
- CHP investment 2 times more than heating plant investment + more O&M costs



Operation of the heating plants

- Heating season / no heating season
-> heating service
- Control room 24/7 / duty officer





Thank you!



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