

CHP & Pellet Factory in Ilomantsi

Vapo Oy



Vapo Oy Ilomantsi CHP

Activated:	2006
Boiler:	Fluidised bed 23 MW, (Noviter Oy) Heat 8 MW (to Ilomantsi municipal district heating), Process heat 8 MW (to pellet factory)
Steam turbine:	Electric power 3,5 MW (Tuthill Nadrowski/Dresser Rand Nadrowski Turbinen)
Feeding:	BMH Wood Technology Oy
Fuel:	100 000 loose-m ³ /a of peat and 100 000 loose-m ³ /a of chips from logging residues and young forests
Fuel storage:	400 loose-m ³
Heating:	700 000 m ³ / 20 km
Owner:	Vapo Oy
Operator:	Vapo Oy
Direct personnel:	15 persons (+Transport and raw material procurement: 30 persons)
Investment cost:	17,6 mill.

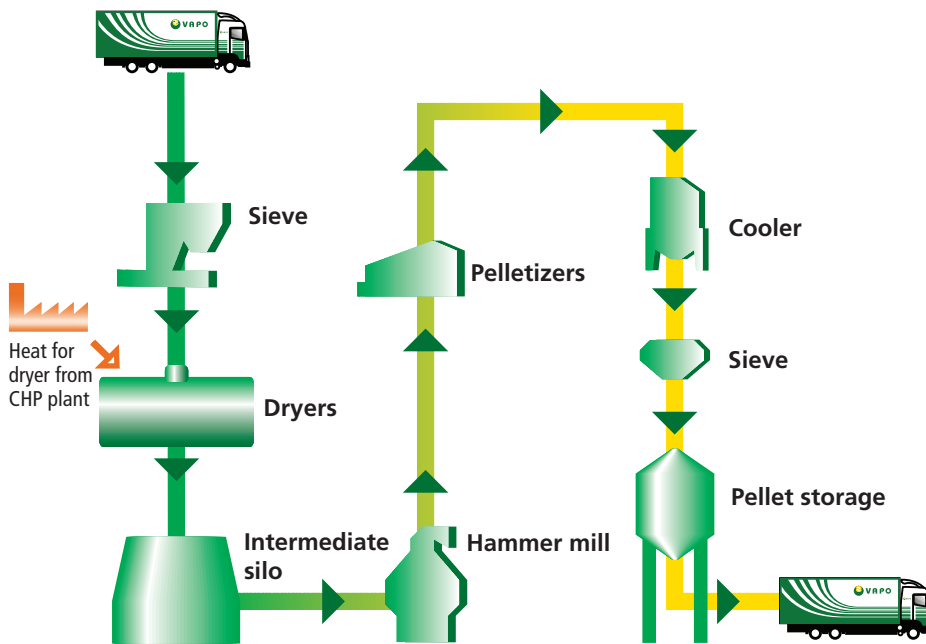
Vapo Oy Ilomantsi Pellet Factory

Started:	1999
Enlarged:	2006
Production:	70 000 t/year (= use of 15 000 family houses)
Raw material use:	500 000 m ³ (for example saw dust/year) Saw dust, cutter, peat, reed canary grass
3 pelletising production lines:	
2 Pellet dryers:	Total capacity 10 000 t/hour (Atlas Stord)
Pellet press:	Buhler
Main market areas for pellets:	North Karelia, Sweden, Denmark



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Pellet production process

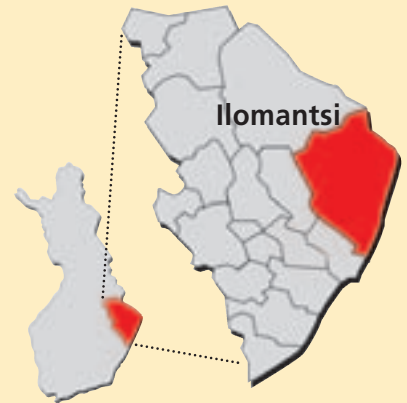


- Raw materials arriving at the pellet plant are stored under cover to ensure that dry materials are always available.
- A drum dryer is used to reduce the moisture content of the raw material.
- From storage the raw material is carried by a feed screw to the pellet press, where pellets of the required size are produced.
- The compression process causes the raw material to heat up, releasing lignin glueing the material together. This gives the pellets their regular shape and shiny surface.
- After manufacture the pellets are cooled before they are taken to storage.

Pellet production is an efficient process, as it uses less than five per cent of the pellets' energy content.

Size	diameter 8 mm, length 10-30 mm
Energy content	4,8 MWh/t => 3 MWh/loose-m ³
Moisture	8-10 %
Ash content	0,4%
Raw material	cutter shavings, sawdust
Specific weight	650 kg/loose-m ³
Space requirement	1,5 m ³ /t

Municipality of Ilomantsi



Ilomantsi is located in the east of Northern Karelia, in the province of Eastern Finland. Ilomantsi is situated 72 kilometres east from Joensuu. Ilomantsi has border with Russia Federation about 100 km and it is most eastern municipality of Finland.

There are 6 421 (31.1.2006) inhabitants and the area of Ilomantsi is 3172 km², from which 402 km² is waterway.

