Imatran Lämpö

S3UNICA
Interreg Europe

European Union
European Regional
Development Fund

Vesa-Pekka Vainikka
CEO of Imatran Lämpö Oy

Environmental friendly heat

-with most modern technique

Imatra
- A small town with opportunities of a city

Population 27 512 (2016), Surface area 191,6 km^2 , Aquatic territory 36,3 km^2

Nature

- Lake Saimaa
- River Vuoksi
- Imatrankoski rapids

Active lifestyle

- Sports, training, mass events inc. European IRRC motorcycle race
- Training centres for football (outdoor & indoor), ice hockey, cross country skiing, biathlon and track field
- Culture, architectural treasures
- Spa and hotel culture

Industry, trade and logistics

- Imatrankoski, the largest hydropower station in Finland
- Stora Enso paper mills
- Ovako steel
- Border logistics and trade

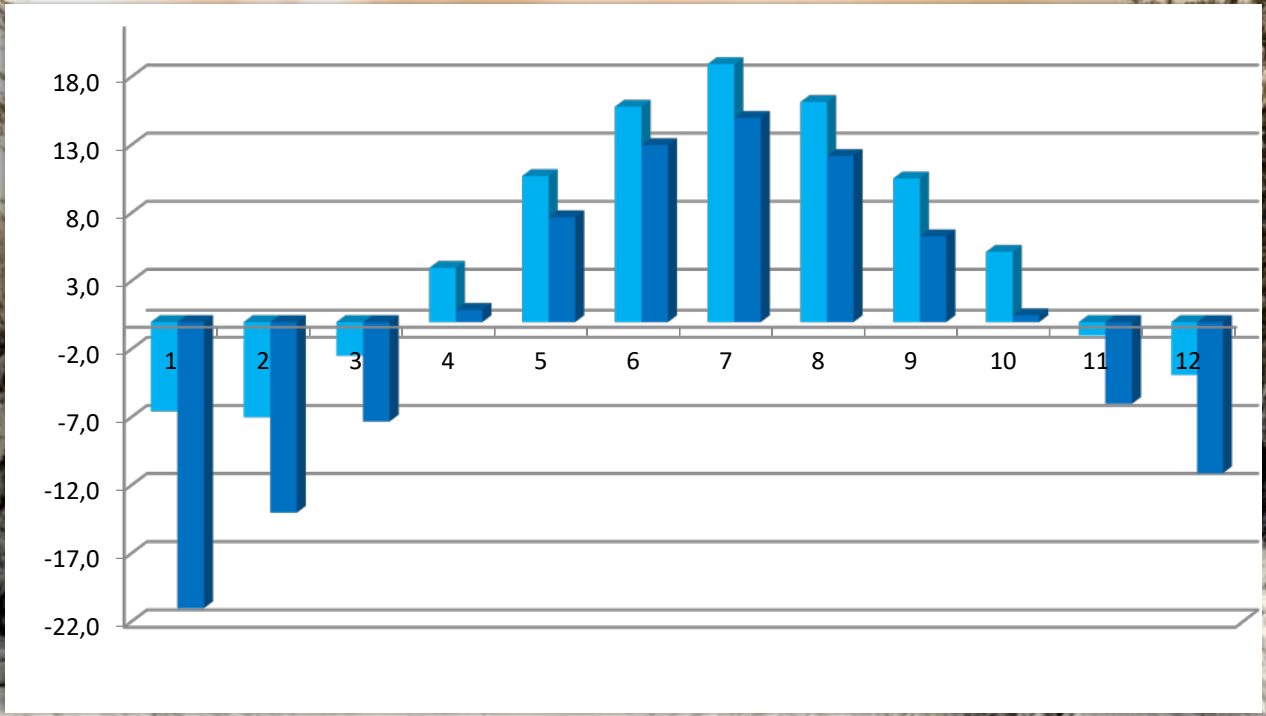
More info:
www.imatrabasecamp.com
www.imatra.fi

Imatran Lämpö

Heat is needed!

Average monthly temperatures 1987-2016

Light blue: 25 years average monthly temperature in Imatra
Dark blue: the coldest average monthly temperature in Imatra



Imatran Lämpö Oy

- Limited Company owned by Imatra city since Jan 1, 2014
  (prior to corporisation a department in city administration)
- District heat and natural gas supply in all conditions
- Maintains, designs ja constructs DH production plants and DH networks as well as gas distribution network.
- Operates in fully competitive and opean heating market

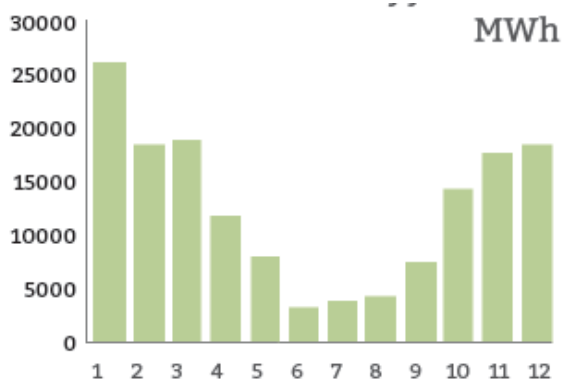
Key figures y 2019

- District Heat 9,7 M€ (153 GWh)
- Natural gas 2,5 M€ (33 GWh)
- Energy sales (DH+G) 12,2 M€
- Turnover 12,8 M€
- Profit before corp. tax 2,11 M€
- Profit after corporate tax 1,68 M€
- Positive result ensures the company's continued development and reasonable and competitive pricing for clients

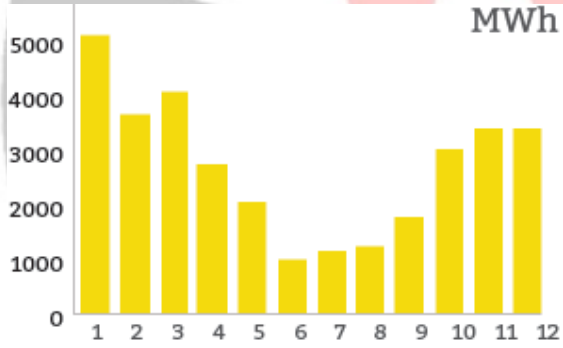
Other figures

- **58 % of residents in Imatra** are clients of Imatran Lämpö Oy
- Total length of DH network 87 km (trench)
- 724 DH customers
- Total length of gas distribution network 63 km
- 239 natural gas customers
- Peak heat load (measured in Jan 2016) 60 MW (effect)
- Personnell 11+1

District Heat sales MWh

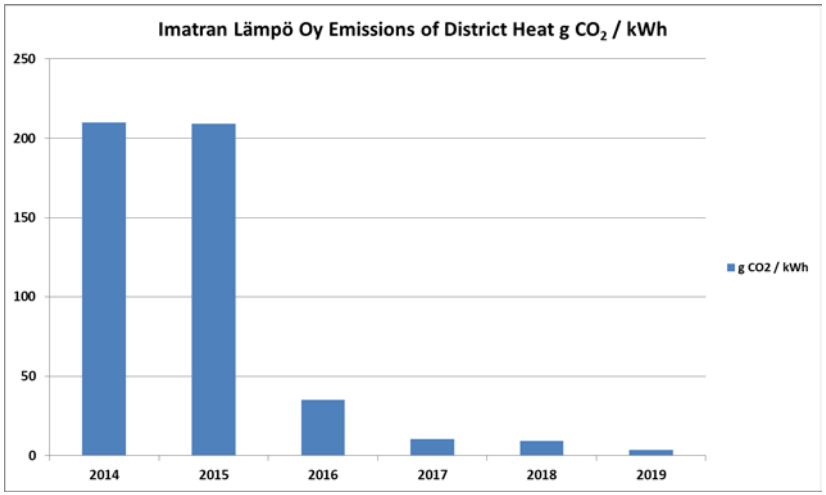


Natural gas sales MWh



From 100% natural gas to 96% RES in four years

CO_2-emissions from the DH supply, g CO_2/kWh



District heat price reduction year 2016:

- Energy charge - 23,6%.
- Total heat price (incl. capacity charges) reduction 20% - 22%.

Imatran Lämpö Oy average DH price

78,2 €/MWh (incl. vat 24 %), 63,1 €/MWh (vat 0%)

Two tier tariff €/MWh

- Energy charge €/MWh: 67,1 (vat 24%), 54,2 (vat 0%)
- Capacity charge €/MWh: 11,1 (vat 24%), 8,9 (vat 0%)

Three new biofuel boilers and DH transmission line (6,3 km) - project started year 2014, Investment cost 24 million eur

Fuel: Side products from forest industry (bark), wood chips and forest residues. Heat boilers are remote operated and unmanned.

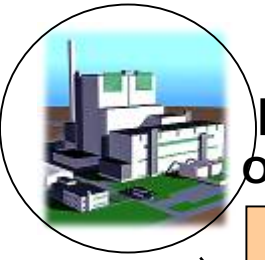
Virasoja Heat Only Boiler Plant 2x15 MW
+ heat recovery and flue gas cleaning

Immola Heat Only Boiler plant 1,5 MW

Rajapatsas Heat Only Boiler Plant 4 MW

DH transmission pipeline

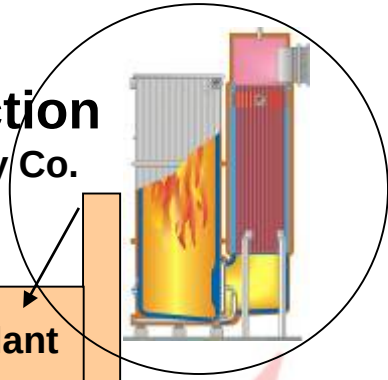
Ownership and Basic Lay-out of a Modern DH System (Finnish)



Heat production
Operated by Energy Co.

Heat transmission and distribution 120/70 °C operated by Energy Co.

Heat production
Operated by Energy Co.



CHP Plant

HOB Plant

Building

Building

Building

Building

Building

Building

Building

Building

Building

Building

HOB

Substations

Owned and operated by the Client

Heat metering and building level substations

Heat production
Operated by Energy Co.

Responsibilities of Different Operators in DH System

Power plant

CHP production
Boiler plants

Energy company
Power company
Industry

DH Company

DH bill to DH company
- Measurement in power plant
- Heat losses in DH network to DH company
  → must be included in tarif

Housing company

DH bill to building owner
- According to measurements in building level
- Losses inside the building borne by housin company
- Measurement system
  - Accuracy
  - Installation
  - Maintenance
  - Calibration
  - Meter reading

Apartments

Share owners
Renting companies
- Bills to inhabitants or owners
- Allocation of all living cost
  - Heating cost
  - Wates cost
  - Service and maintenance cost
  - Management soct
  - Etc.

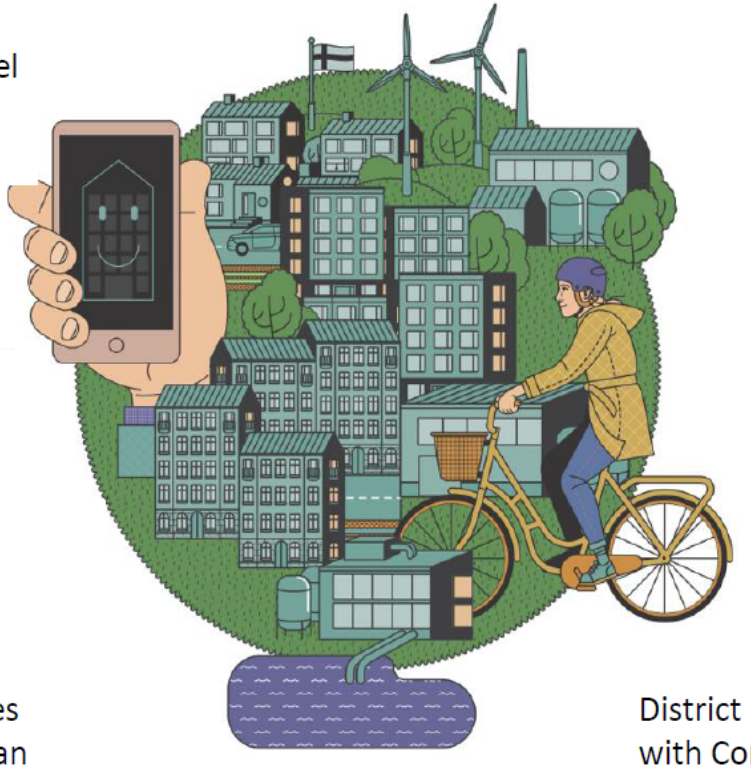
Imatran Lämpö

Key-Advantages of District Heating

Most economical and environmentally benign fuel and manner of production can be used

Efficient air-pollution control is possible –> low emissions

Flexibility for fuel changes, possibility to optimize fuel mix



Small space requirement and safe operation

Easy to control and operate for the consumer – high quality and flexible heat supply service

Affordable cost and long term price stability

Different sources of waste heat can be utilized

District Heating is together with Combined Heat and Power the most energy efficient way of heating

Part of national safety system

Imatran Lämpö

15 000

Kilometers of energy heating network

900

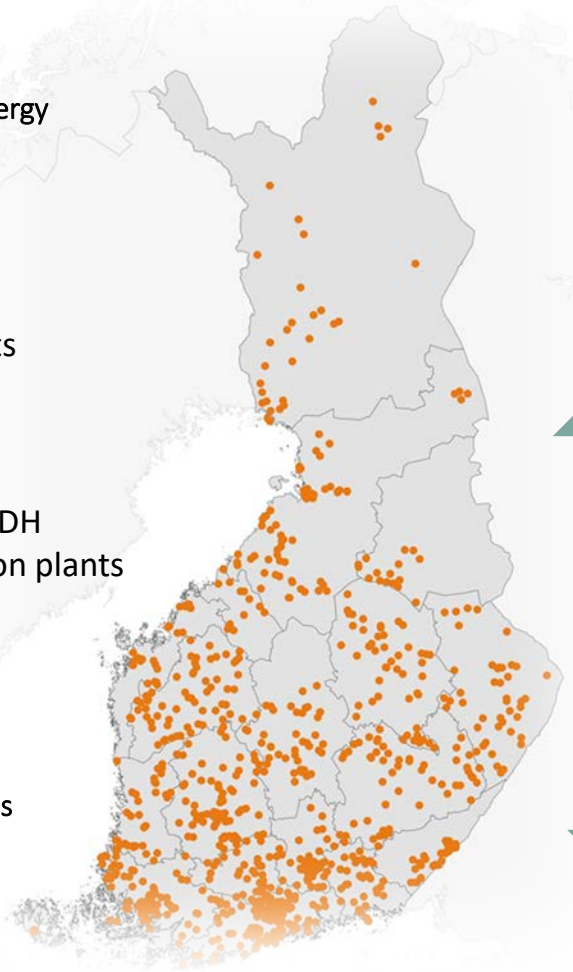
DH production plants

330

Portable DH production plants

2,9

Million finnish people out of 5,52 million citizens enjoy district heating



46%

DH´s market share of space heating

70%

of municipalities with DH use mainly renewable fuels and heat recovery

26%

Carbon emissions from district heat production have fallen by 26% during this decade

Thank you!


Imatran Lämpö
Environmental friendly heat
-with most modern technique


Imatran Lämpö
More info about us:
www.imatranlampo.fi
Kaukolämpöesite
Yleisesite
Year book 2019