

# Heat sector decarbonization – ~~a DSO perspective~~

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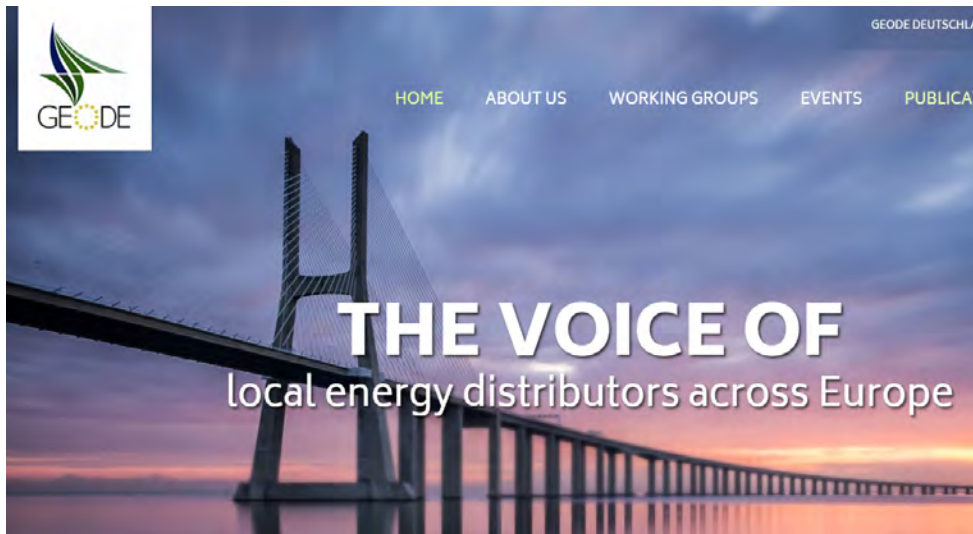
Petteri Haveri, Finnish Energy

# Heat sector decarbonization – a heat providers' perspective

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Petteri Haveri, Finnish Energy

# GEODE



<https://www.geode-eu.org/>

# Finnish Energy



<https://energia.fi/en/>

Finnish Energy

# Heat network

## Enables

- Flexible energy use
- Benefiting of various sources of energy and hence provides for energy efficiency and carbon reduction on system level

## Competes

- With other sources for heating
- Cost-efficiency and customers' satisfaction always in focus

## Is

- An underused possibility
- Local and consists of the network and of the heat sources

# Some examples

More available here,  
[https://energia.fi/files/4830/Sector coupling cases in Finland 2020.pdf](https://energia.fi/files/4830/Sector_coupling_cases_in_Finland_2020.pdf)



## Case 2

## Katri Vala Heat Pump Plant

Excess heat from buildings

Heat from purified sewage water

HEAT  
PUMP

Heating

Cooling

Electricity



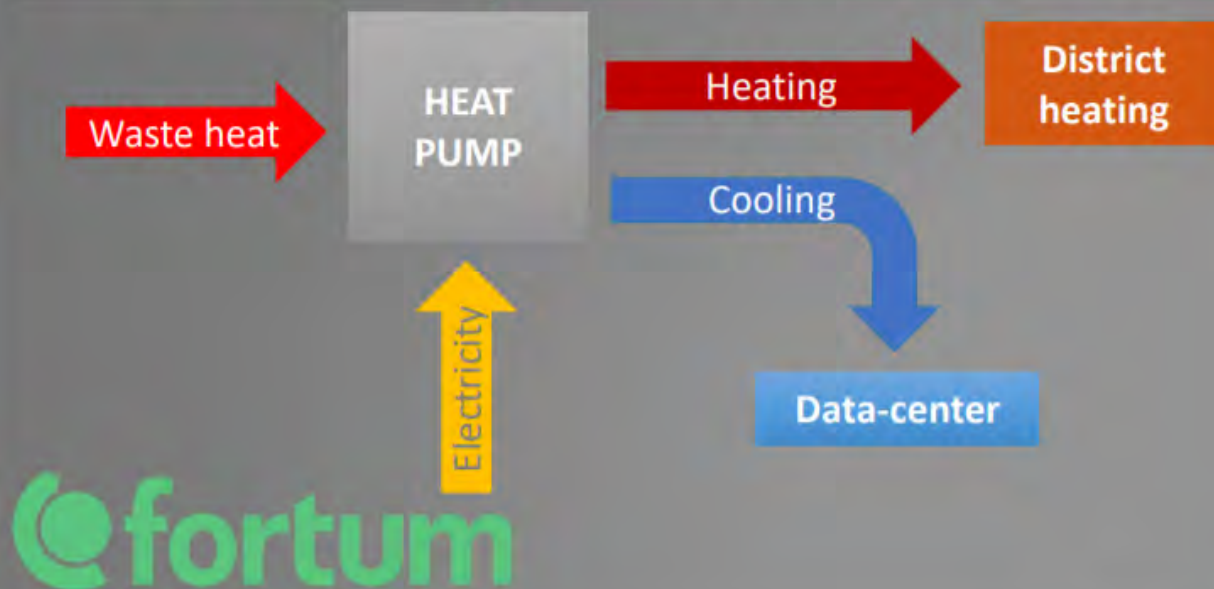
HELEN

Case type	Waste heat management	
Equipment	5 heat pumps	
Installed capacity	District heat: 105MW	District cooling: 70MW
Economics	CAPEX > 20 M euro	
Business model	Sale of the district heating and cooling	
Saved emissions	150 000 tons of carbon dioxide yearly	
Utilization	Excess heat from buildings, purified sewage water and 30 MW of electric power	
Final product	Heating and cooling	
Receiver	Residential and commercial customers in the city of Helsinki	

<https://www.helen.fi/en/news/2018/newheatpump>

## Case 3

# Datcenters of Tieto and Elisa in Espoo



Case type	Waste heat from datacenters
Equipment	2 heat pumps
Production capacity	20 GWh/annum of heat
Business model	Sales of district heat and provide cooling to the datacenter
Heat source	Waste heat from datacenters of Tieto and Elisa
Final product	Heating and cooling
Receiver	Customers connected to the Espoo DH Network

<https://www.fortum.fi/datakeskusten-hukkalampo-kaukolammoksi>



## Case 3

# Kilpilahti excess heat project (planning phase)

Neste and Borealis  
Kilpilahti, Porvoo

Excess industrial heat

40 km  
PIPE  
And  
HEAT  
PUMP

Heating

Helsinki,  
Espoo,  
Kerava

No investment decisions done yet



Case type and involved parties

Waste heat management (Neste, Helen, Borealis, Fortum, and Keravan Energia)

Equipment

40km pipe

Capacity

3 TWh of heat

Economics

CAPEX: 700 – 1,000 M euro

Business model

To be decided

Utilization

Excess industrial heat from Neste and Borealis plants

Final product

Heating and cooling

Receiver

Residential and commercial customers in the city of Helsinki

<https://www.helen.fi/en/news/2020/kilpilahti2>





Secure, Energy efficient,  
Market based



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