Back to the Present: Changing the Future Today

Veolia contribution to decarbonisation of the heat sector

The city of Poznań: Efficient District Heating at the heart of the city energy transition project
Introduction to Veolia

Veolia
rev. 2018 €25,900 m
171,000 employees

Management of the global water cycle

Liquid and solid non-hazardous and hazardous waste management

Heating and cooling networks, energy efficiency, green energy production

Veolia Energy

Networks
615 heating & cooling networks
37 400 GWh heat and cold
8 175 km Total length of district heating & cooling networks
130 Mm² of heated and cooled area

Energy Efficiency
42,000 thermal installations managed
2,400 Industrial sites managed
100 Mm² of complex buildings managed, 3,700 hospitals, 9,000 educational facilities
25 Hubgrade centers
Environmental and energy services can be major contributors to fight climate change

Potential of avoided CO2 emission by 2050

11.7 Gt/yr

Increased cogeneration
Waste heat recovery
1.3 Gt/yr
Focus on ECO District Heating and Cooling Networks
Veolia in Poland

- Energy: District Heating Network and Energy efficiency
- Services for Industrial customers: energy, waste and water
- 4,300 employees
Veolia in the city of Poznań

- Veolia operates the heating network and heating sources of Poznań since 2004.
- The District Heating Networks provides heating and hot water to 200,000 people as well as to industrial facilities.
- Figures 2018
  - 55% of heat market of the city
  - network: 545 km with 5 078 substations
  - Heating capacity: 1,200 MW (6 units, incl. CHP)
  - Power capacity: 260 MWe
  - Heat sales: 6 550 TJ
  - Electricity sales: 804 GWh
Veolia in the city of Poznań: investing in biomass

2011
- Replacement of a coal boiler by a biomass boiler
- Biomass steam boiler output: 77 MW,
- Biomass sourced locally by rail

Figures 2018
- Biomass ~ 10% fuel mix
- Reduction of CO2 emissions: 120 kt

In addition
- 300 TJ of external waste heat recovery
Veolia in the city of Poznań: leveraging digital

2014
Smart district heating: 100% of smart substations, remote control, load forecast and control
Improved quality; reduction of thermal losses, power consumption, CO2 emissions.
Veolia in the city of Poznań: reducing emissions

2016: existing installations meet IED standards for emissions for SO2, NOX and dust.

Result from switch towards biomass, adaptation to norms, expansion of the DHN, optimization of the network operation: dramatic improvement of air quality

end of the “smog” challenge
Veolia in the city of Poznań: exploiting waste heat potential

- Volkswagen Poznań Foundry - **the largest foundry of cylinder heads in Europe** - historic Veolia client
- Sets goals to reduce **the overall environmental impact by 25%**
- In 2014, a common project begins:
  - Replacement of the compressors, with a heat recovery system (57 TJ annual heat production)
  - Two processes
    - Winter time: local recovery by the factory
    - Transitional period and summer: waste heat valorized by the network (supply 2000 flats)
  - Heat purchase agreement between Volkswagen and Veolia
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Benefits of the project

- Efficient management of waste heat and better guarantee of heat supply
- Big achievement in the Corporate Social Responsibility policy of the client
  - Reduced CO2 emissions by 1,200 tons/y
  - Saved water from the cooling process: 17,000 m3/y
- Viable business model
- Real partnership with the client, future developments
- Show case
  - Circular economy to support energy transition
  - Significant replication potential in the city and country
Veolia in the city of Poznań: supporting the city vision

- A long-term partnership between Veolia and the city of Poznan
- A common ‘project team’ to work together on a strategy for energy transition and clean air
  - facilitate connection to DHN
  - common energy efficiency investments
  - waste heat recovery from sewage networks or other sources
Take aways

- District Heating Networks can foster the energy transition through valorization of local resources.
- High potential for waste heat recovery.
- Success depends on a long-term cooperation between partners: customers, operators, local authority.
Veolia in Poznań: Changing the Future Today

Thank you