Policy recommendations – Putting the right framework and incentives in place to boost WH recovery - the ReUseHeat experiences

June 25th, webinar, DHC+ Talks

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This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 768936.

www.reuseheat.eu
1. The ReUseHeat experience

1. ReUseHeat project in short
2. Urban waste heat recovery: how it works
3. The low temperature waste heat (urban waste heat) potential
4. The economic and financial perspective: the ReUseHeat policy recommendations
1. The ReUseHeat project

4 system innovations in focus: METRO- DATA CENTER- SEWAGE- HOSPITAL
1. The ReUseHeat project

Expected results:

- Identify the urban waste heat potential & what happens if we use it
- **Stakeholder analysis**: Who? Needs? How?
- Validated **technologies** for 4 system innovations
- Identify necessary adjustments to existing **business models and contracts**
- Address the financing constraints: **investment risk & bankability**
Global district energy climate award 2019 - newcomer category!

Sustainable energy solutions for today and tomorrow!

Datacenter demonstrator

ReUseHeat | Braunschweig, Germany

ReUseHeat – excess heat recovery from the data center | Braunschweig, Germany Veolia is expanding its activities in the energy sector in order to stay at the vanguard of the transition to renewables. Veolia’s subsidiary BSJENERGY operates a city-wide district heating network powered by renewable energy.
Excellent innovation - key innovation in H2020 program

The project has been analysed by the European Commission's Innovation Radar and is seen as one key innovation in the H2020 program!

Information on the European Commission's Innovation Radar platform on July 20th

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2. Urban waste heat recovery: how it works

The most efficient heat recovery is made in new buildings with low energy demand but the urban waste heat can also be recovered into existing DH networks (islands with switches).

The technology is based on heat pumps boosting the temperatures to desired levels:
- Datacenter in Braunschweig (20-25°C to 65°C)- from datacenter to low temp network accounting for legionela
- Hospital in Madrid (25-35°C to 55°C)
- Metro in Berlin (8-15°C to 50°C)
2. Urban waste heat recovery: how it works

Heat pumps are no news but the design of a system of low temperature waste heat recovery where the heat pump is a facilitating technology is news...and much needed in 2050

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26/08/2019
3. Urban waste heat potential

Approximately 1.2 EJ (or 340 TWh) per year are possible to recover from data centres, metro stations, service sector buildings, and waste water treatment plants.

This corresponds to more than 10 % of the EU’s total energy demand for heat and hot water, which is approximately 10.7 EJ (or 2,980 TWh)*
4. The economic and financial perspective: the ReUseHeat policy recommendations The economic and financial perspective
The system implementations are new...this means:

• No standardization: long paybacks
  8-17 years in ReUseHeat....but is it an issue?

• Old (high temperature) business logics remain
  *Central producion --- Decentralized*
  *Customers --- Prosumers*
  *Heat and hot water --- the value of green*

• The investments are too small to attract institutional investors (5M€)

• District energy is news to the investor (makes due diligence difficult)- more so with the urban waste heat recovery solution
The regulatory system is not clear

• What is waste heat?
  
  *Is it comparable to RES?*

• There is no direct incentive for low temperature heat recovery
  
  *But such exist for RES...so urban waste heat recovery investments competes with subsidized RES investments*

• Review the legislation of Legionella
  
  *There are urban waste heat recovery solutions that eliminate the risk of it*
The ReUseHeat policy recommendations

• **Low awareness** of the possibility to harvest low temperature sources and their potential – make pilots to build capacity!

• **Motivation for engaging in green energy** needs to encompass urban waste heat (not compete with them) - create incentives!

• **Derisk the investment** in urban waste heat recovery investment - credit facility!*

*Deliverable 2.2, Bankability, ReUseHeat: www.reuseheat.eu
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