Harnessing the potential of District Heating & Cooling to accelerate EU heat transition

Aurélie Beauvais, Managing Director of Euroheat & Power
EUFORES IPM 2022
@ABClimate
What are District Heating and Cooling Networks?

A proven, efficient solution to decarbonise buildings in densely populated areas

Delivers **hot water** through a network of insulated pipes

Over **10,000 heat networks**

**12%** of the EU heat market (2019)

**60 million citizens** supplied

Nearly **1/3 of renewable & waste heat sources** in the DHC mix
Heating and cooling matters

The size of the challenge: EU consumes half of its energy for heating and cooling purposes. Most of this thermal energy is used in buildings (space and water heating) and industries (process heating). It is mainly produced from fossil fuels (66%) and only 13% comes from renewable energies.
Where can DHC play its part for heat decarbonisation?

Smart & Sustainable DHC is suitable for 100% of residential buildings heating & cooling needs, about 80% of tertiary and low to medium temperature industrial processes (Temp. below 160°)
District heating & cooling: the underdog of Europe's heat transition

DHC is one of Europe's most untapped clean heating & cooling resource. From 12% today, it could supply up to 50% of the European heat demand in 2050. In Germany the share is set to double by 2045 reaching 26%.

Recovered/waste heat from industries & tertiary sector could provide 25% of the future DH supply.

RES heat sources:
- Geothermal (18% GR, FR, CZ, HU),
- solar thermal (DK, GR, SP, HU),
- biomethane (CZ, AT, FR)

System integration. DHC networks can channel RES electricity into RES heat, using large-scale heat-pumps.

It can also recover heat from H2 and nuclear production.
Steep reduction of gas demand

50% of EU energy consumption is used for heating & cooling purposes, with 42% from natural gas.

Most of this thermal energy is used in buildings (space and water heating) and industries (process heating).

Ultimatum VS long-term vision

According to EC emergency scenarios, the EU could face gas shortage as of March 2023, which will have strong impact on our industry and citizens.

Little can be done in 6 months, but within 2 to 5 years a deep H&C transition can be initiated.

Social bomb

Energy bills are soaring, SME's are closing. EU unity is being torn apart by the current economic crisis and rising social discontent.

Need for inclusive & fair solutions which work for everyone.
DHC is a long-term solutions that deliver an immediate phase-out of natural gas in buildings.

- Using gas in heat networks coupled with CHP save gas use by up to 30% compared to individual gas boilers.

- Increase efficiency for the use of fossil-fuels.

- Phase-in fossil free sources in heating.

- RES heat (geothermal, solar thermal).

- Waste heat (industry, urban infrastructure, public buildings).

- Power2heat technologies (large-scale heat-pumps and e-boilers) using RES electricity.

- New fossil free DHC networks.

Where fossil free heat sources are available, buildings can be directly connected to new heat networks.
DHC is **reality-proofed and can be quickly deployed**

District heating & cooling networks have **successfully accompanied the transition of EU cities since the 70's.** EU countries with highest shares of renewables in heating are also the ones with highest shares of DHC. In 3 to 5 years, whole districts can be converted to 100% climate neutral & modern DHC systems.

2 to 5 years **project life-span** for new DHC districts.

12 to 18 months for industrial systems.

60 million citizens are supplied with DHC in Europe, **but 140 million EU citizens live in a city equipped with DHC networks.**
DHC is inclusive and affordable

There is no one size-fits all, or silver bullet to tackle the heat crisis. But District heating & cooling networks have the advantage of adapting to a variety of EU and even local energy mixes.

DHC network integrate clean heating resources, depending on local and national specificities (CHP, recovered and ambient heat, geothermal, solar thermal, wind and solar, sustainable biomass)

Inclusive & technology agnostic

Shielding consumers from price volatility

Stable and local heat supply shielding consumers from market volatility

Multi appartments & condominiums

Fit for buildings in densely populated areas
A 10-Point plan to accelerate EU heat transition

- Develop a robust EU Heating & Cooling Strategy to align with the climate Law and energy security imperative

- Develop a holistic approach to building renovations: connecting with local renewable and sustainable waste heat sources

- Introduce mandatory heat planning for local authorities

- Rethink the financing framework to de-risk investments in sustainable district heating

- Ban individual fossil-only boilers in new, refurbished and renovated buildings
3 concepts for a successful heating transition

- **Resource efficiency** and **circular energy systems**
- Local and spatial **planning is key**
- **Diversification** means resilience
Thank you, ask your question!