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District heating – a tool to counter the European energy crisis

Fixing at least two problems at once

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District heating (DH) - a tool to counter the European energy crisis

Not all solutions to the energy crisis and the dependence on Russian natural gas **will help the green transition** or **be relevant in the longer run.**

Prioritize the solutions that **solve many problems** and **continue to deliver!**

District heating can deliver simultaneously on

- **Reduced import of Russian natural gas**
- **Increased security of supply**
- **Green transition**
- **Also: Energy efficiency, sector integration, jobs and fuel poverty**

All hands on deck!!

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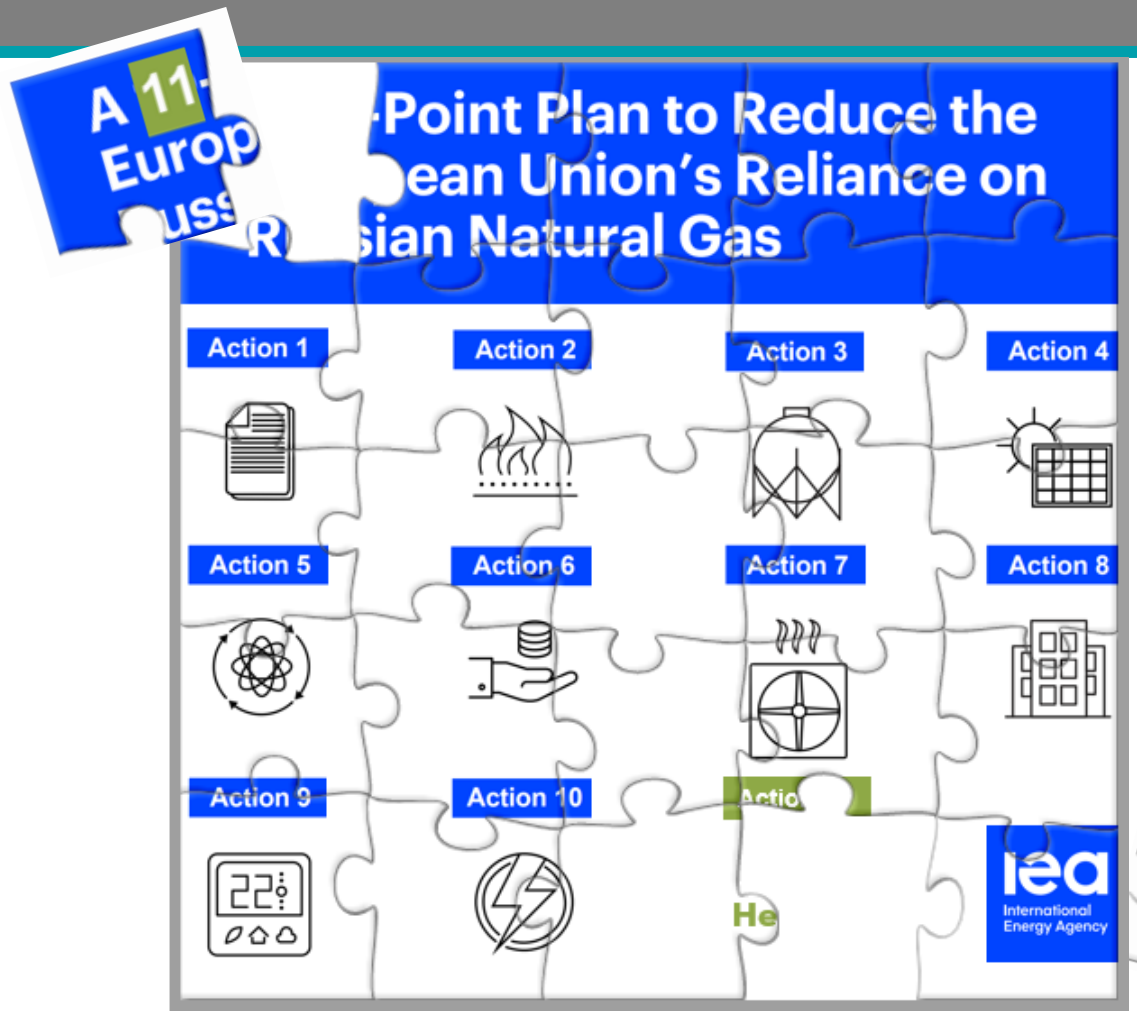

Many tools are in play to reduce the reliance on Russian natural gas

No single supply chain will be able to deliver independence of Russian natural gas.

District heating is growing and already on the way to reduce the reliance on Russian natural gas and increase the security of supply in Europe.

DH is a cost-efficient and sustainable "no-regret"-solution.

Tool for Europe: Accelerate the growth of DH

District heating works!

Recognized in Europe as a critical tool for the green transition

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Case: **Germany**

Cities such as Berlin, Hamburg, Mannheim, and Freiburg have been heated by DH for a long time.

Going from ambition to action, Germany is now deploying extensive heat planning. DH has been identified as a "key solution" with benefits such as costs, efficiency, flexibility, diversity, local value creation, and security of supply.

An estimated 700 German municipalities are facing a new task of heat planning, if plans for mandatory heat planning are carried out. To assist the municipalities, a national competence centre for the heating transition has been founded.

This is expected to result in massive investments in green heating across Germany. With DH being one of the favoured solutions.

Case: **Polen**

There is a lot of DH in Poland. More than 40% of households are heated by DH, and the Warsaw DH system is the largest in Europe.

Poland considers DH to be a strong asset and a most important, integral part of their green transition.

Currently, DH is predominately based on coal and is faced with the challenges of transformation. Poland knows that large investments and efforts are needed. An extensive strategy for green transition and improved energy efficiency is on the way. This includes also cogeneration using low-emission fuels.

It is clear that individual heat pumps are not a suitable solution on the needed scale. The electricity grid is already facing major challenges. DH is needed and offers a more attractive path on a large scale.

Case: **Denmark**

Denmark has responded to previous energy crisis by developing district heating with the support of heat planning.

The philosophy being – with heat infrastructure in place, you can use whatever energy source is cheap and available.

For decades, this heat infrastructure (DH) has facilitated quick and cost-efficient transitions. From oil to natural gas to biomass, and now to a diverse mix including surplus heat, electrification, and ambient heat sources.

The main reason behind the success of the green transition in Denmark is district heating. DH is now expanding to help eliminate the remaining use of natural gas for heating.

DH will be 100% CO_2-neutral in 2030 in Denmark

People associates DH with cheap, green, and reliable heat, and the current prices seems to support this: 90% of Danish DH consumers have not experienced an increase in prices - though gas and electricity prices have gone up dramatically.

DH can reduce reliance on Russian gas – both short and medium term

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Accelerate what we have!

- Prioritize non-gas heat production in existing DH systems on a daily basis. Replacing or reducing the use of natural gas for heating for the whole DH area.
- Connect more buildings and industries inside and near existing DH systems.
  - Convert heating from natural gas to DH.
  - Supply local companies with DH-based process heat, possibly boosted by electric heat pumps.
- Accelerate existing DH plans for green heat production.
- Stop heating based on natural gas in new developments.
- Optimize and digitalize existing DH systems to increase energy efficiency and reduce energy demand.

Accelerate what we need!

- Expand, modernize and establish DH systems across Europe through an accelerated planning and approval process. Diversity in heat production, heat planning, and sector integration will result in a cheap and resilient heat sector.
- Address the misunderstanding that DH takes a very long time to establish. DH is not technically difficult. Ensure that decisions are made.
- DH is a fuel-flexible heat infrastructure that can use all heat sources. Don't be too afraid of fossil heat sources (except natural gas) if already available – their importance can decrease over time. DH is the opposite of a lock-in technology.
- Think big!
  - Plan city-wide
  - Include existing and future heat sources, also surplus heat from carbon capture and hydrogen production.
  - Connect all end-users

The heat is already here – use it

Domestic & sustainable energy sources

ONLY available though DH

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Industry

Datacenters

Seawater, rivers, and lakes

Surplus Heat & ambient heat sources

Sewage water

Hydrogen /PtX

CO_2 Carbon Capture

Ambient air (large-scale)

More efficient & large-scale heat pumps

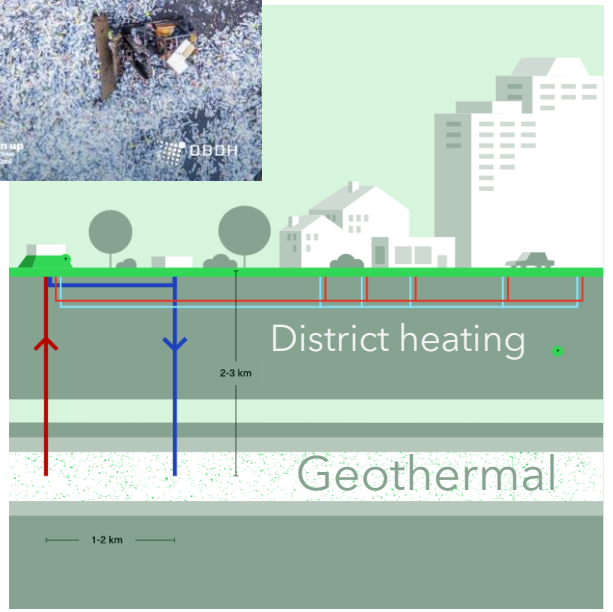
Supermarkets

Reusing residual waste to produce energy

Cogenerated power and heat (CHP) supports security of supply of both power and heat.

Sustainable biomass (large-scale)

Solar thermal (large-scale)



Summary

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District heating (DH) - a tool to counter the European energy crisis

Many big decisions will be made to reduce the dependence on Russian gas.

Europe needs to act quickly – without forgetting the long-term perspective.

TOO FEW PEOPLE KNOW, that district heating is a critical tool for both the current crisis and for the green transition.

District heating - an important tool to avoid Russian natural gas