



2050

Heat Roadmap Europe
A low-carbon heating and cooling strategy

Heating typology as a basis for policy recommendations

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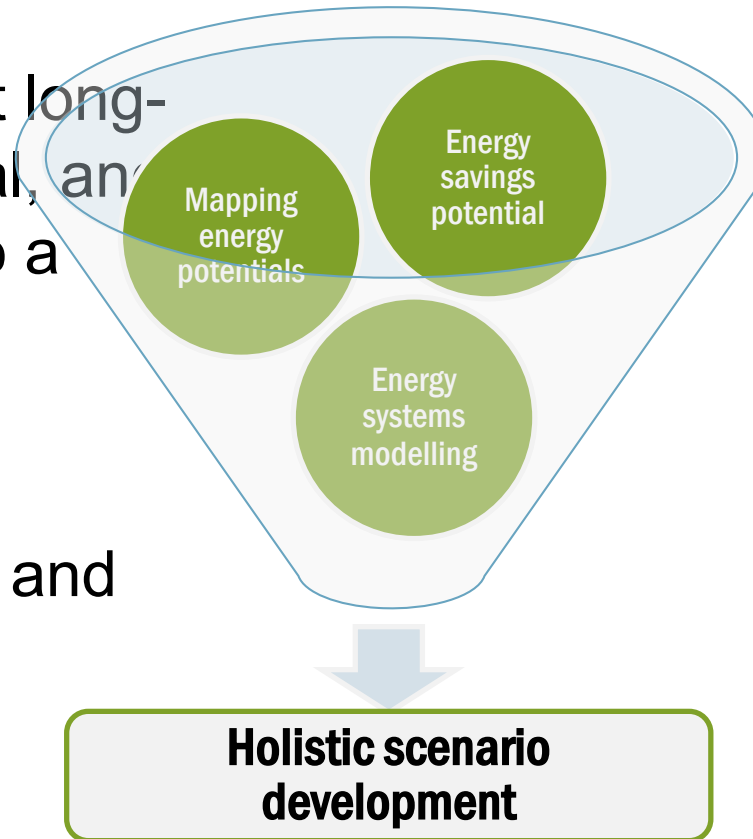
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Our purpose in HRE4

- Creating scientific **evidence** to support long-term energy strategies at local, national, and EU level and empower the transition to a **low-carbon** energy system
- By **quantifying** the impact of various alternatives for addressing the heating and cooling sectors



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Heat Roadmaps for transitions

Everywhere

Deep energy savings

Combine savings and supply

~30-50% demand reduction

Urban areas

District energy networks

High demand density areas

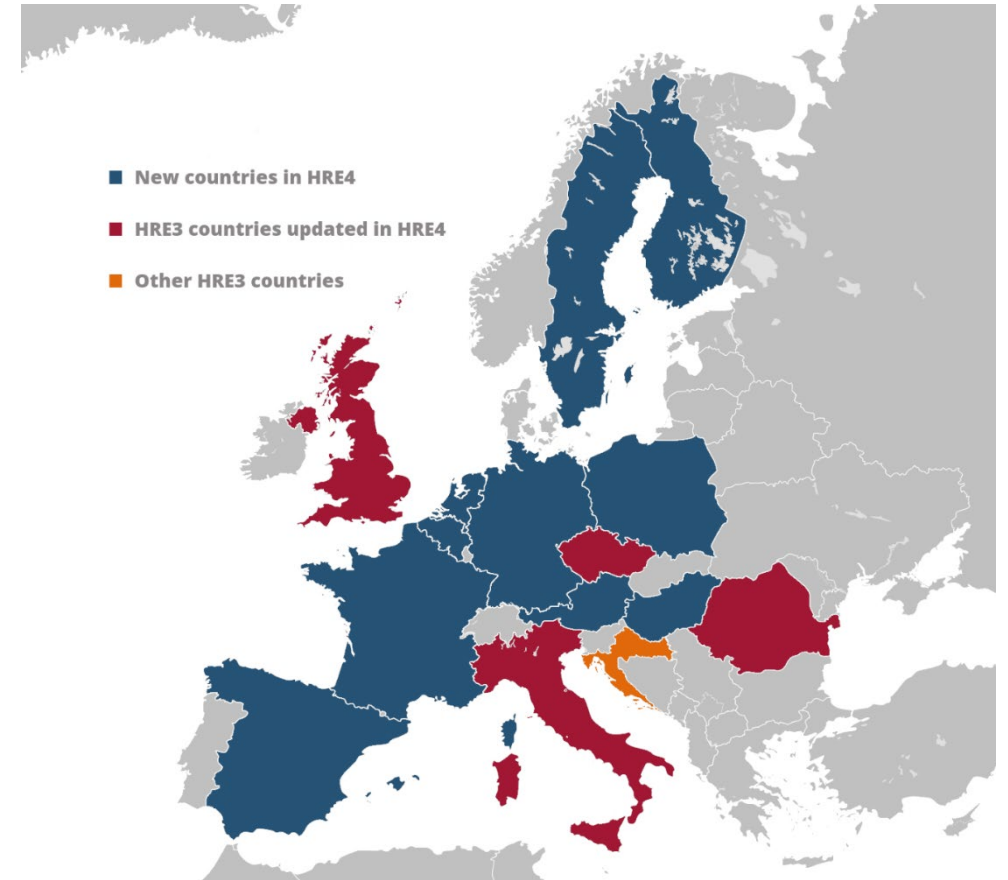
Supply ~50% of energy demand

Rural areas

Mainly heat pumps

Low demand density areas

Remaining ~50% of the energy demand



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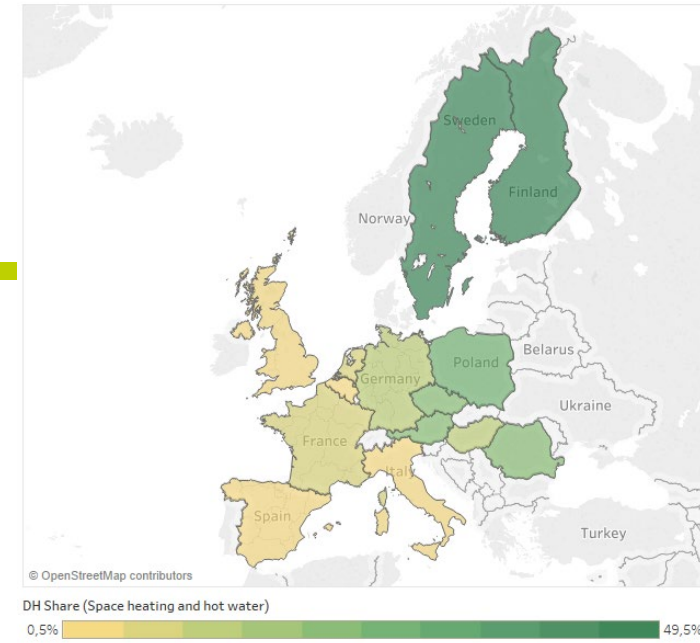
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Regions with a tradition of heat planning

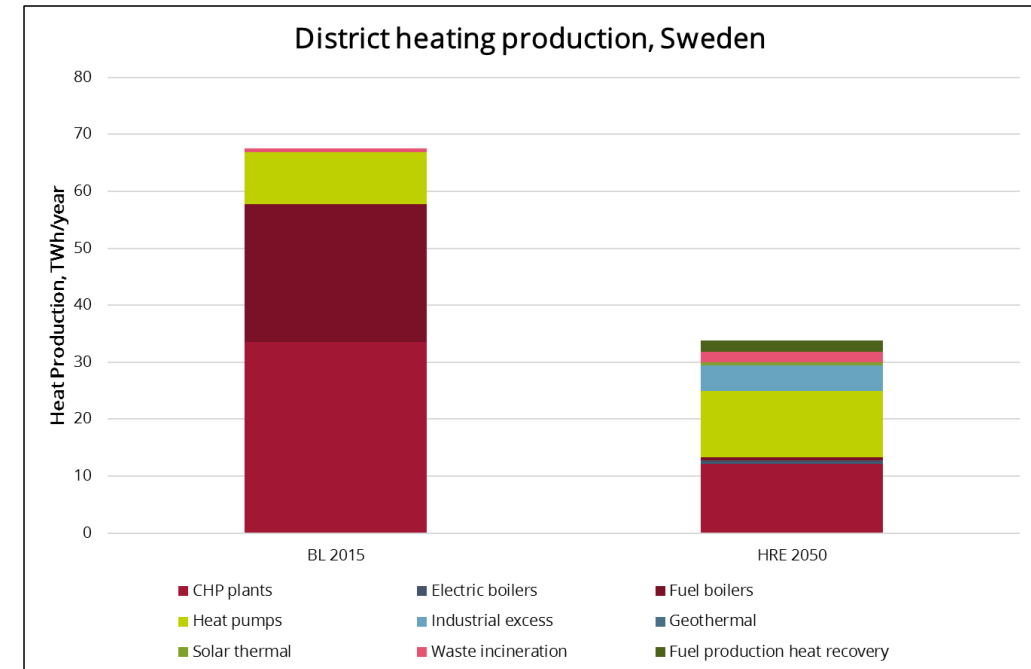
- High DH shares indicates systematic planning for developing the infrastructure
- Market share for DH: similar
- Energy savings: on track
- BUT: shift in production

DH Share (Space heating and hot water) - Baseline 2015



- **District heating should be there to stay for market shares**
- **Should move towards 4DH in temperature and production: partially phasing out**
- **Integration of with electricity sector is key**

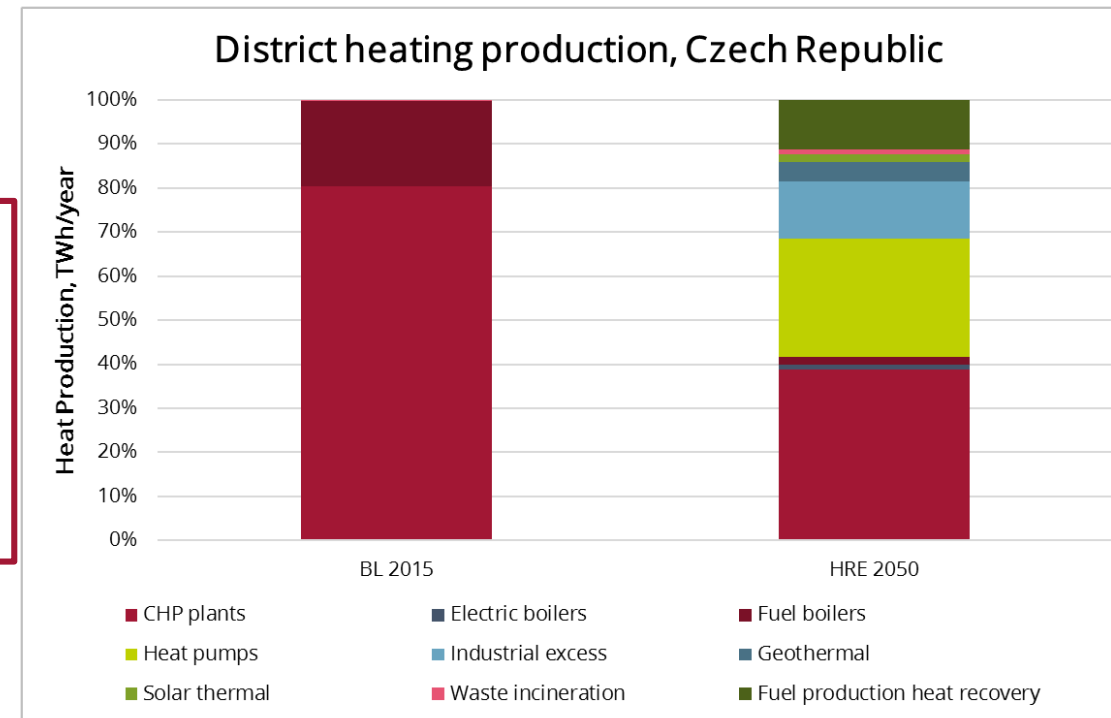
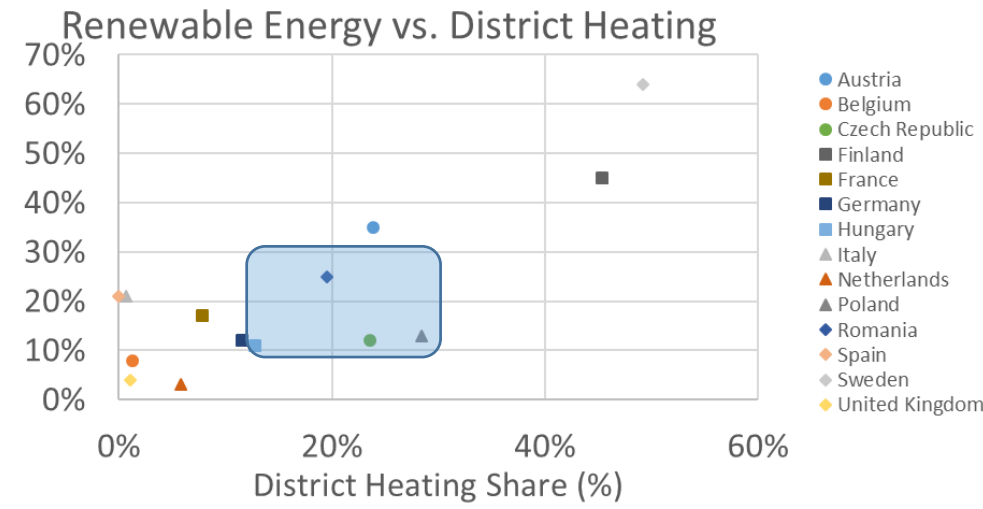
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Regions with deteriorating heat infrastructure

- Existing DH shares, but low share of renewable
- Market share for DH: similar or higher
- Energy savings: highest potential
 - Doubling rates – further investigation needed

- **District heating should be there to stay**
- **Plan renovation of DH systems in accordance with buildings**
- **New, clean sources are necessary**



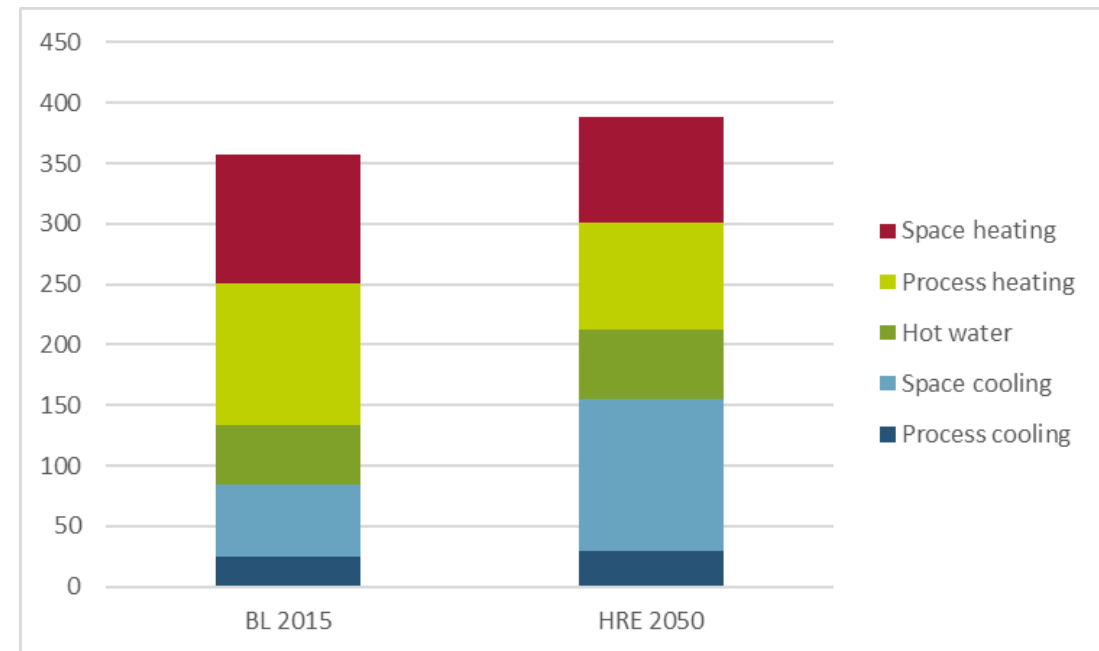
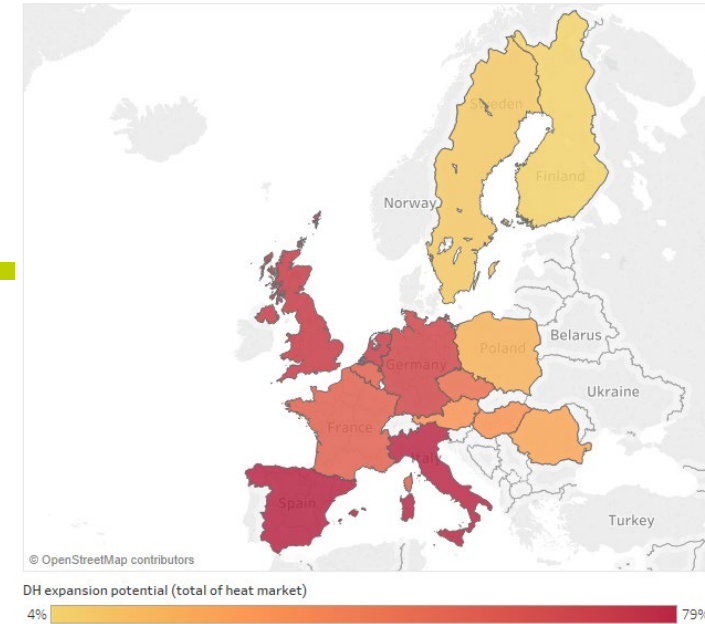
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Regions with underrated heat demands

- There are in fact heat demands!
- There is much higher potential!
- DHW vs space heating means high heat loads
- Energy savings vary widely

- **Planning practices need to be established**
- **District heating has high potentials**
- **DH supply with excess and renewables have high potentials**

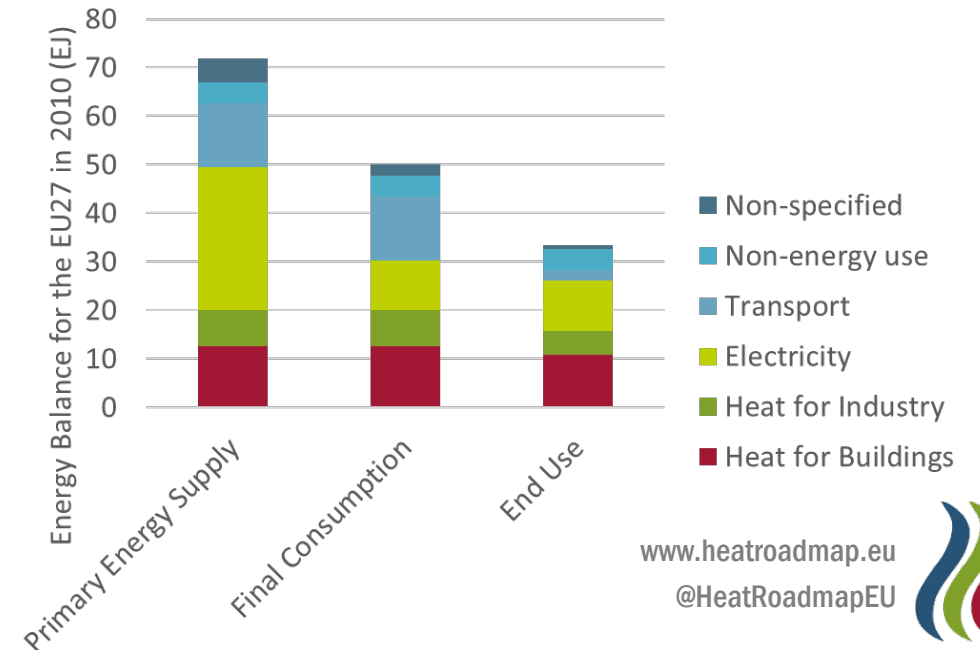
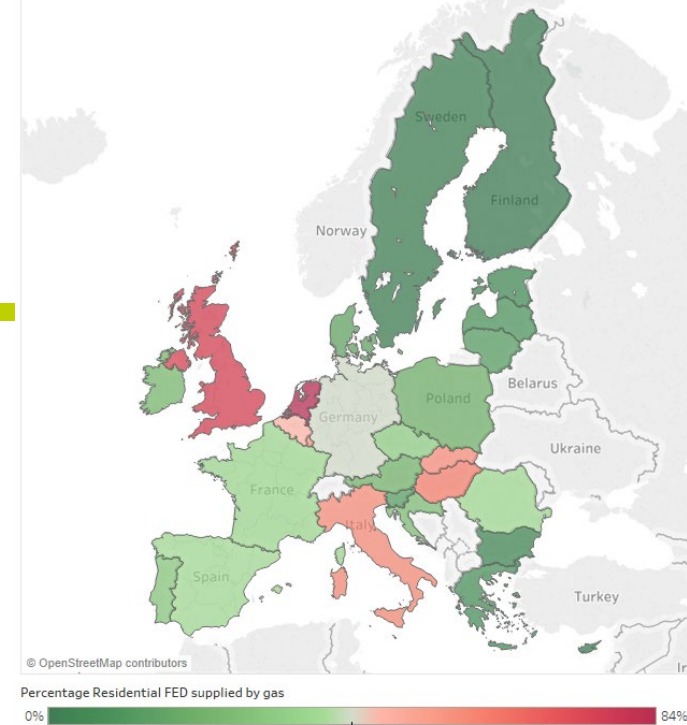
DH expansion potential (total of heat market)



Regions with current gas systems

- It can seem tempting, because it is relatively clean!
- Already a tradition of thermal demand management
- Infrastructure planning already exists
 - Different types of pipes but similar policy issues

- **Planning practices need to change**
- **District heating has potentials but has to come from far**
- **Start by using the available resources**



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Typologies: can they be useful?

- Imperfect knowledge
- Countries; regions; cities
- **Transferability** of methodology and (technical) findings
- Policy **learnings**
- Requires looking at characteristics
 - Current technologies
 - Current planning practices
 - BAU developments
 - Technical potentials
 - Intervention potentials



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Thank you!



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District Energy in Cities Initiative: www.districtenergyinitiative.org



EnergyPLAN website: www.EnergyPLAN.eu



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