



2050

# Heat Roadmap Europe

A low-carbon heating and cooling strategy

## Heat Roadmap Europe 4 Status quo of heating demand in Europe

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 695989.

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# Project Participants



european council for an energy efficient nomy



sustainable energy for everyone



City of Gothenburg

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# Overall Aim

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To identify how 14 EU countries can cost-effectively decarbonise their heating and cooling sectors...

...by quantifying the impact of various alternatives



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# Our Purpose

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- Creating scientific evidence to support long-term decision making
- To empower the transition to a low-carbon energy system



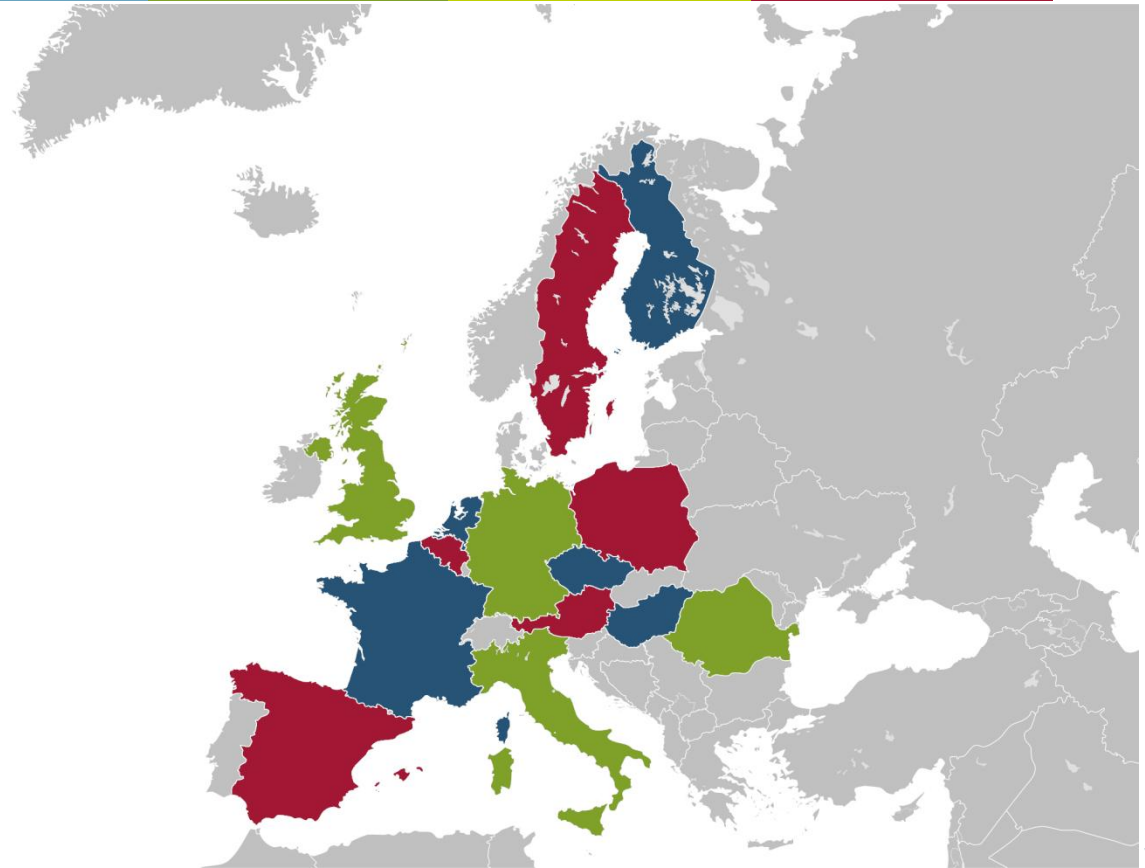
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# Focus on 14 Largest EU Countries by Heat Demand = 90% of EU Heat

1. Germany
2. France
3. United Kingdom
4. Italy
5. Poland
6. Spain
7. Netherlands
8. Sweden
9. Belgium
10. Czech Republic
11. Romania
12. Austria
13. Finland
14. Hungary

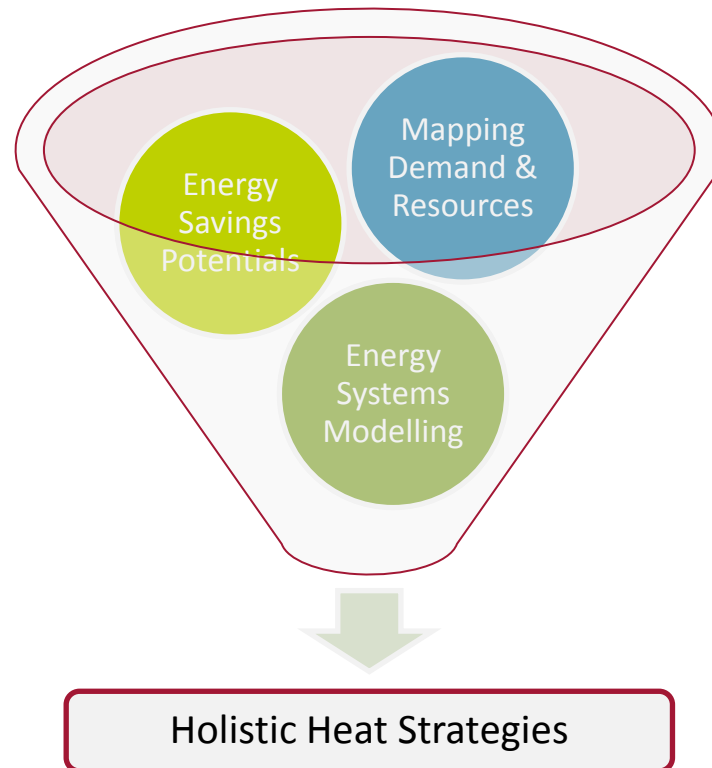


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# Combine Various Perspectives Across Heating and Cooling



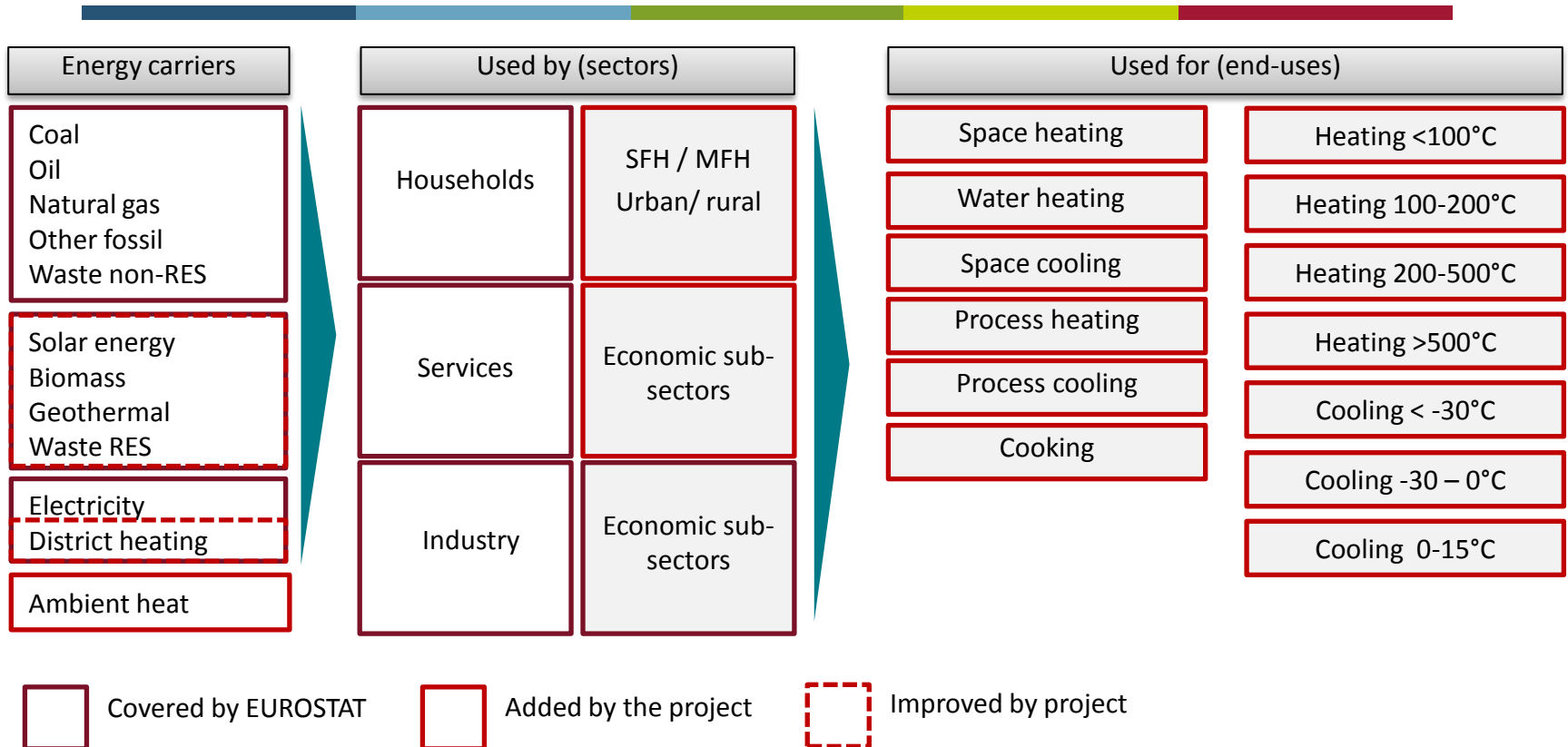
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Will be updated!

# From Eurostat to technologies



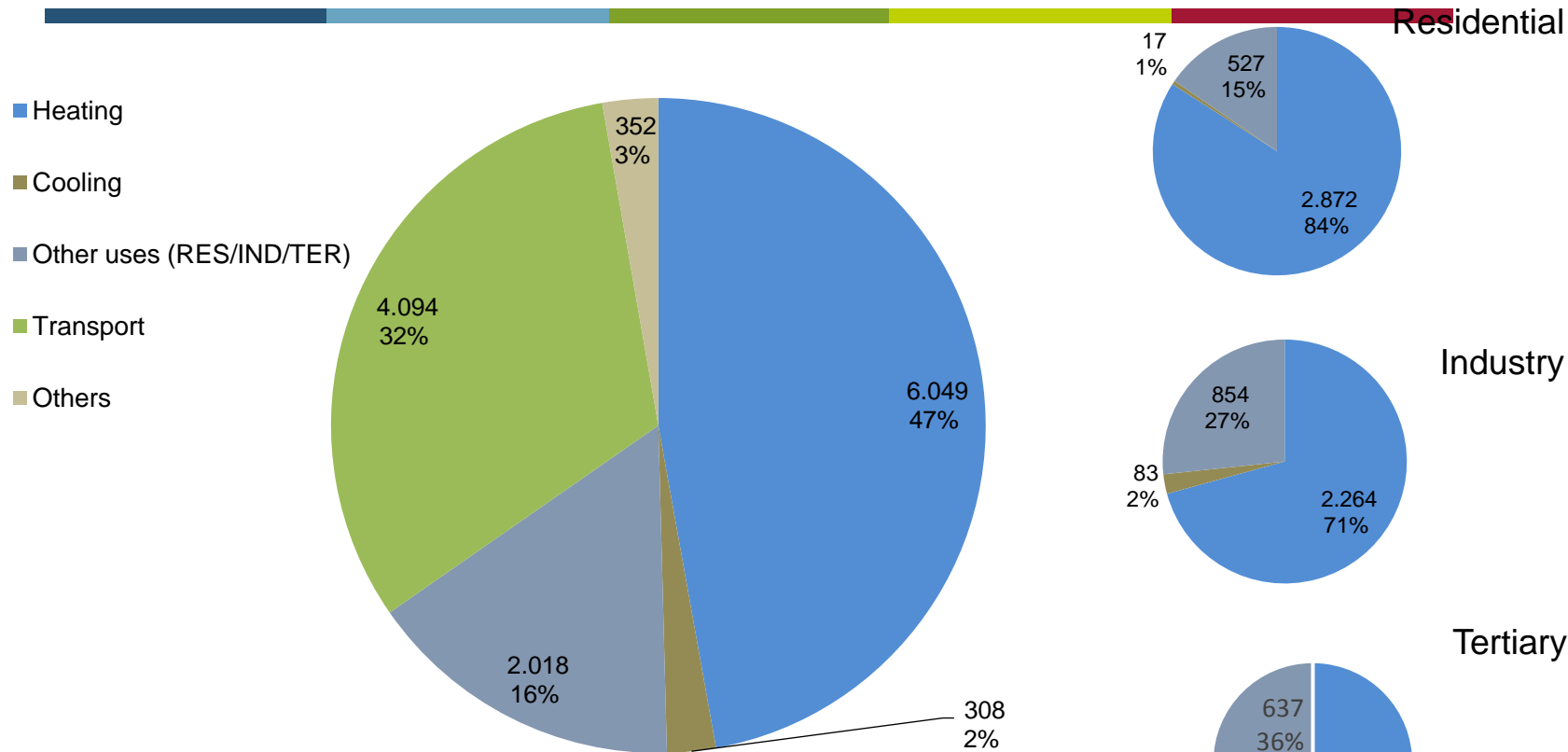
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# Final energy demand (TWh) in EU 28 by end-use



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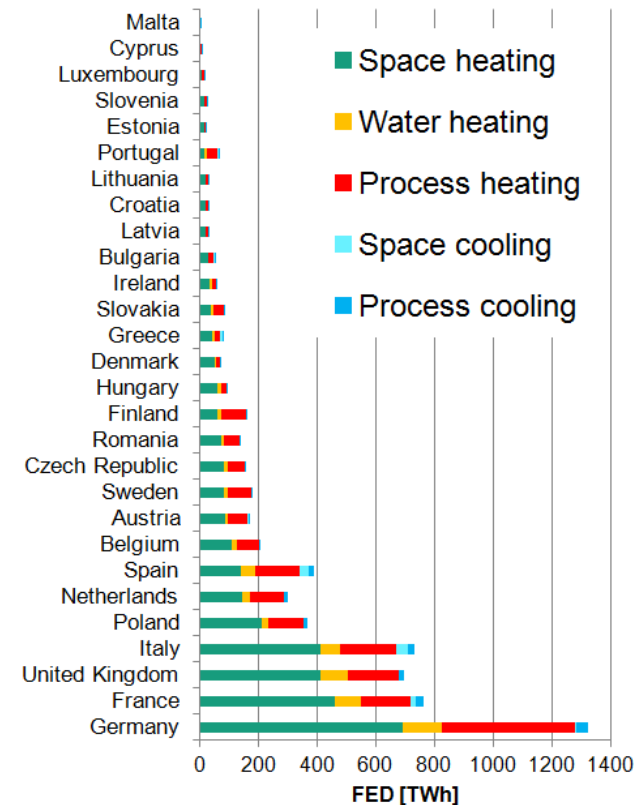
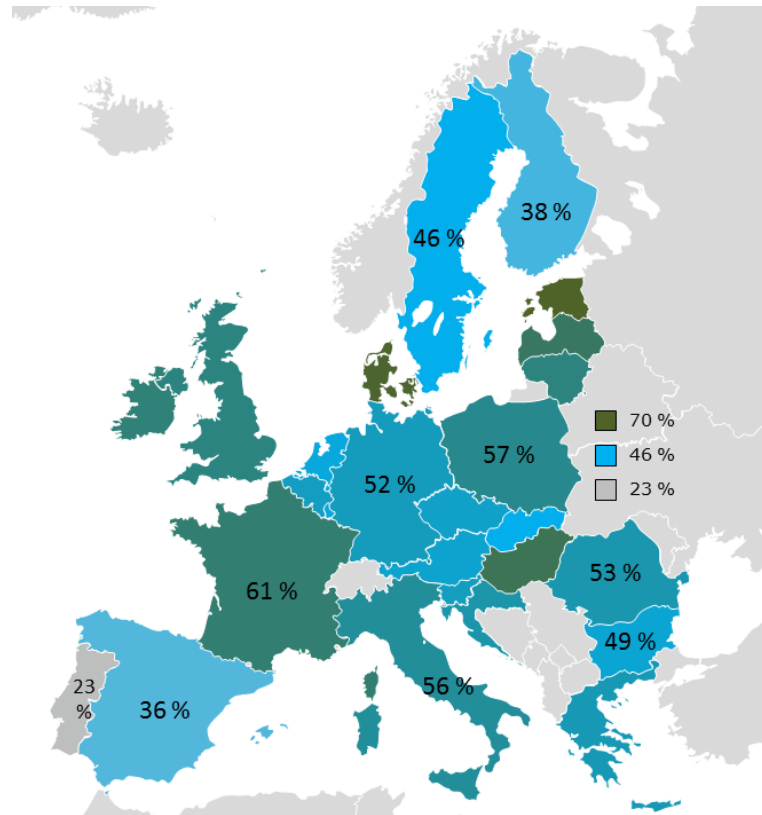
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Will be updated!

# Share of space heating demand of total H/C demand by country (final energy)



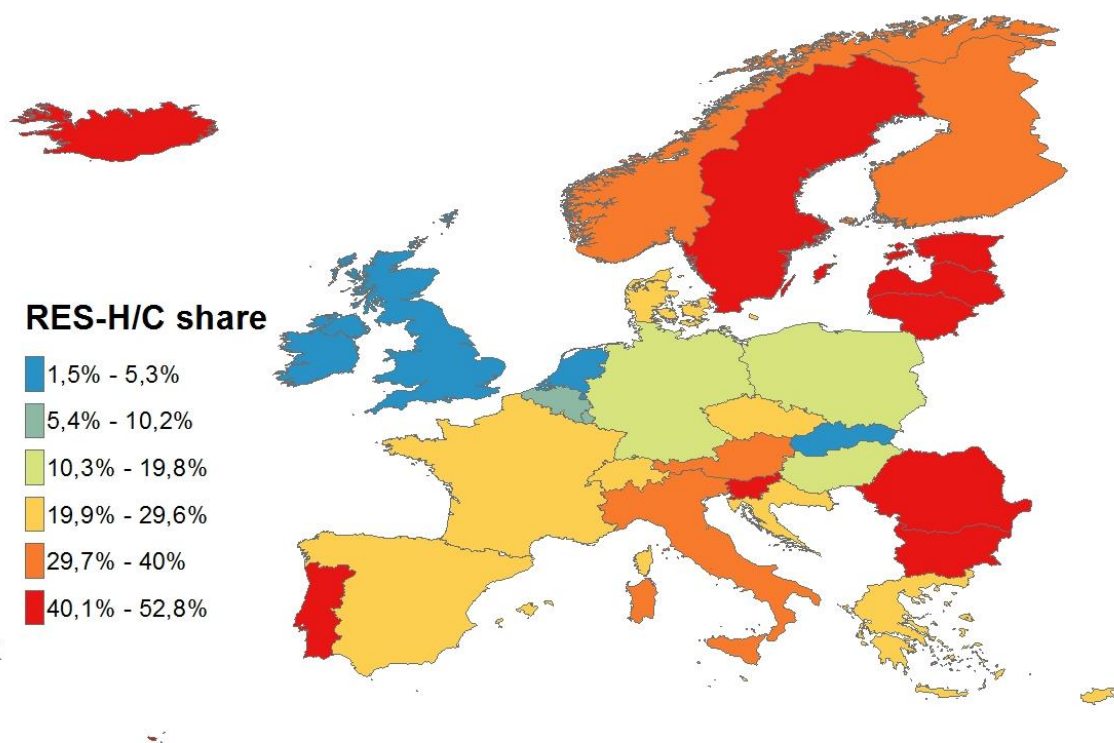
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Will be updated!

# Example residential sector: Share of RES on final heating demand



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# Summary

- H/C is highly relevant → 50% of EU28 FED
- Heating is dominant over cooling → 95%
- Space heating is responsible for half / more of the H/C demand
- RES to provide H/C have minority share → 12%
- District heating to provide H/C → 7%



# Spatial analysis of heat demands

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- Distribution of heat demands
  - Boundaries and costs of district heating infrastructure
- Pan-European Thermal Atlas (Peta)



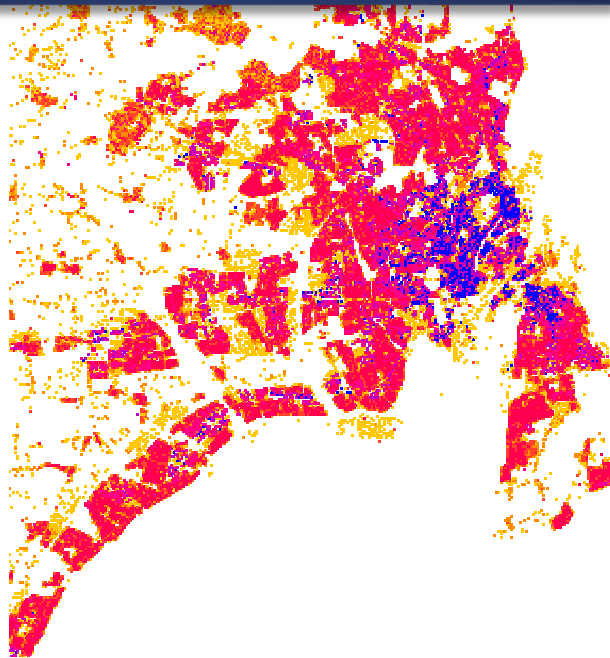
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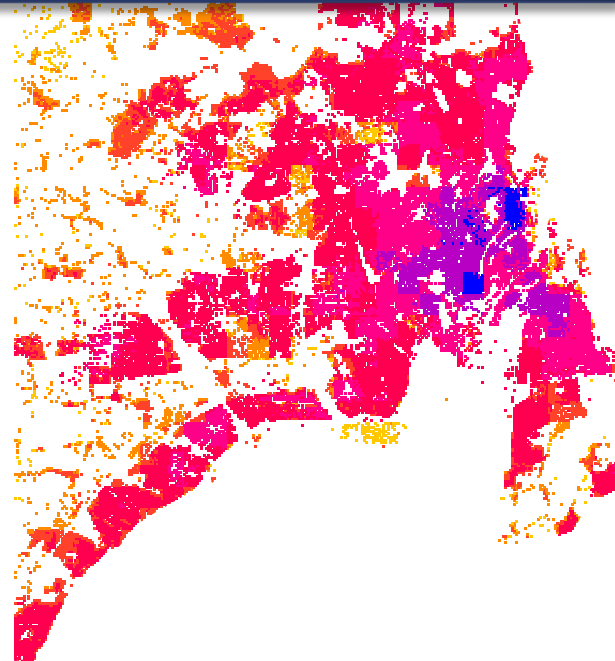


# How closely can current final energy demand be approximated?

Observed plot density,  
Copenhagen



Modelled plot density,  
Copenhagen



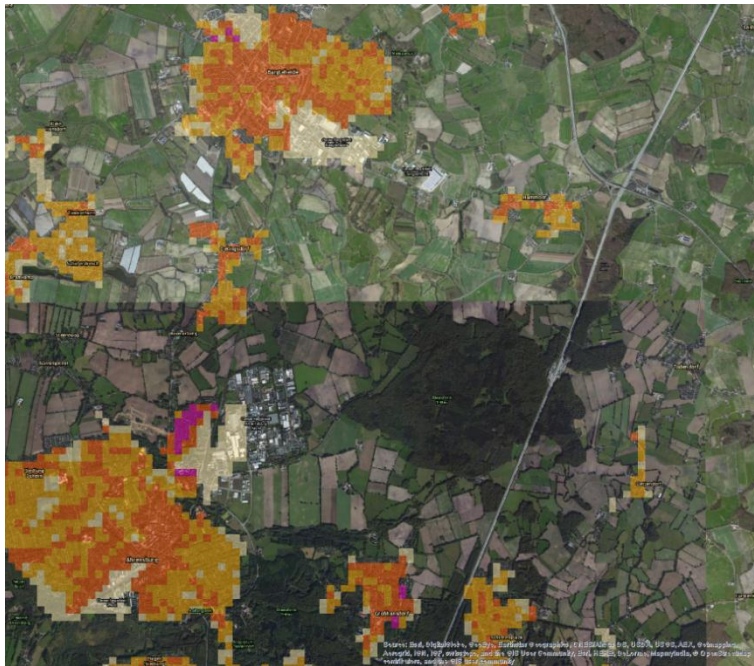
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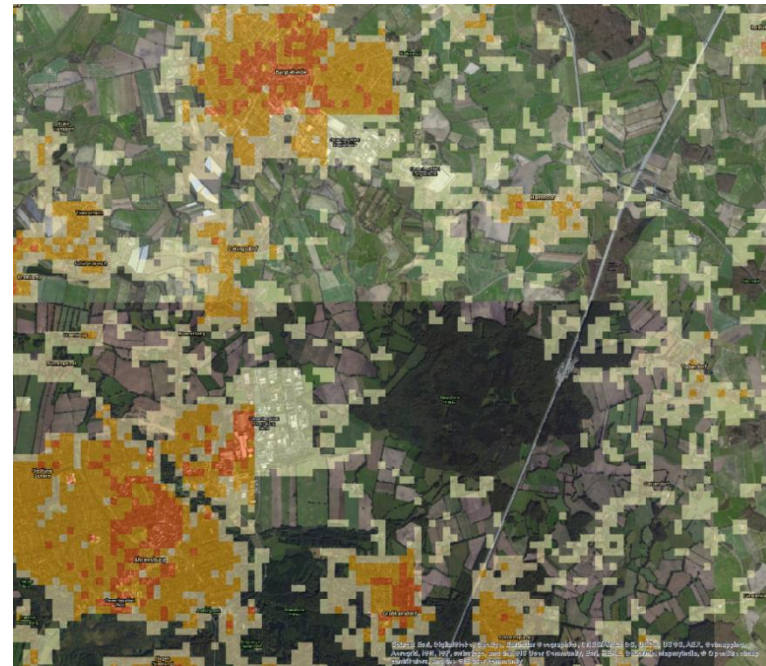


# Continuous improvement of modelling instruments

Peta 3



Peta 4 alpha



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# Upcoming work

- Coupling of various energy system models
- GIS Mapping of Heating and Cooling
- Development and evaluation of Heating and Cooling scenarios



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