



2050

Heat Roadmap Europe

A low-carbon heating and cooling strategy

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ETIP SNET Workshop

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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.

www.heatroadmap.eu
@HeatRoadmapEU





Michael Liebreich

@MLiebreich

Following



Calling anyone who has ever thought we can decarbonise heating in the UK by electrifying it all. UK heat load this week must be at least 5x the electricity load. Think batteries will help? Maybe for a few minutes. So what do we really do? Tweeps, over to you - answers please!

9:25 AM - 2 Mar 2018

103 Retweets **222** Likes



169



103



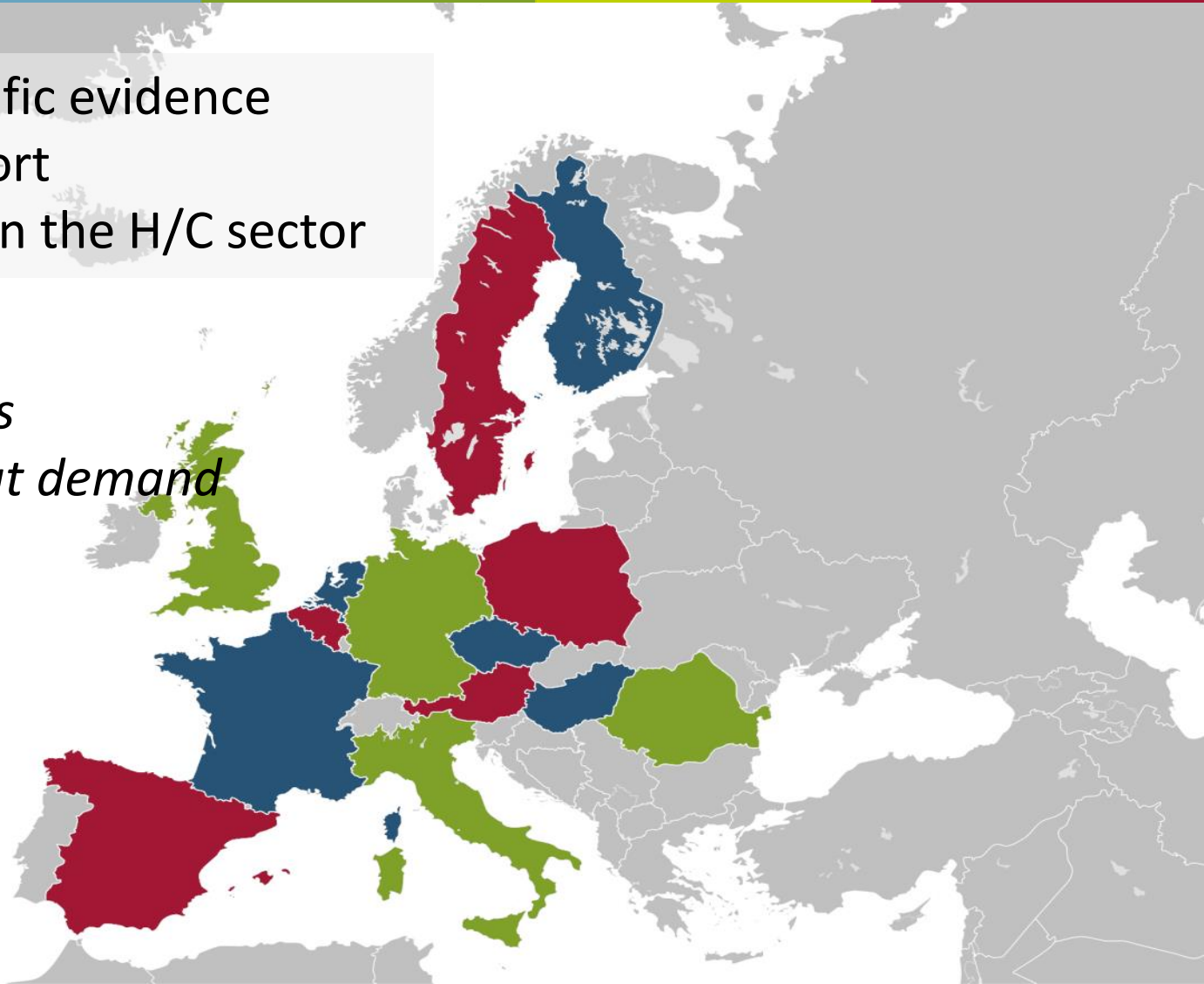
222



Heat Roadmap Europe Goal

Create the scientific evidence required to support decarbonisation in the H/C sector

- *14 EU countries*
- *85-90% EU heat demand*



Project Participants

www.heatroadmap.eu/project-partners.php



european council for an energy efficient nomy



sustainable energy for everyone



City of Gothenburg



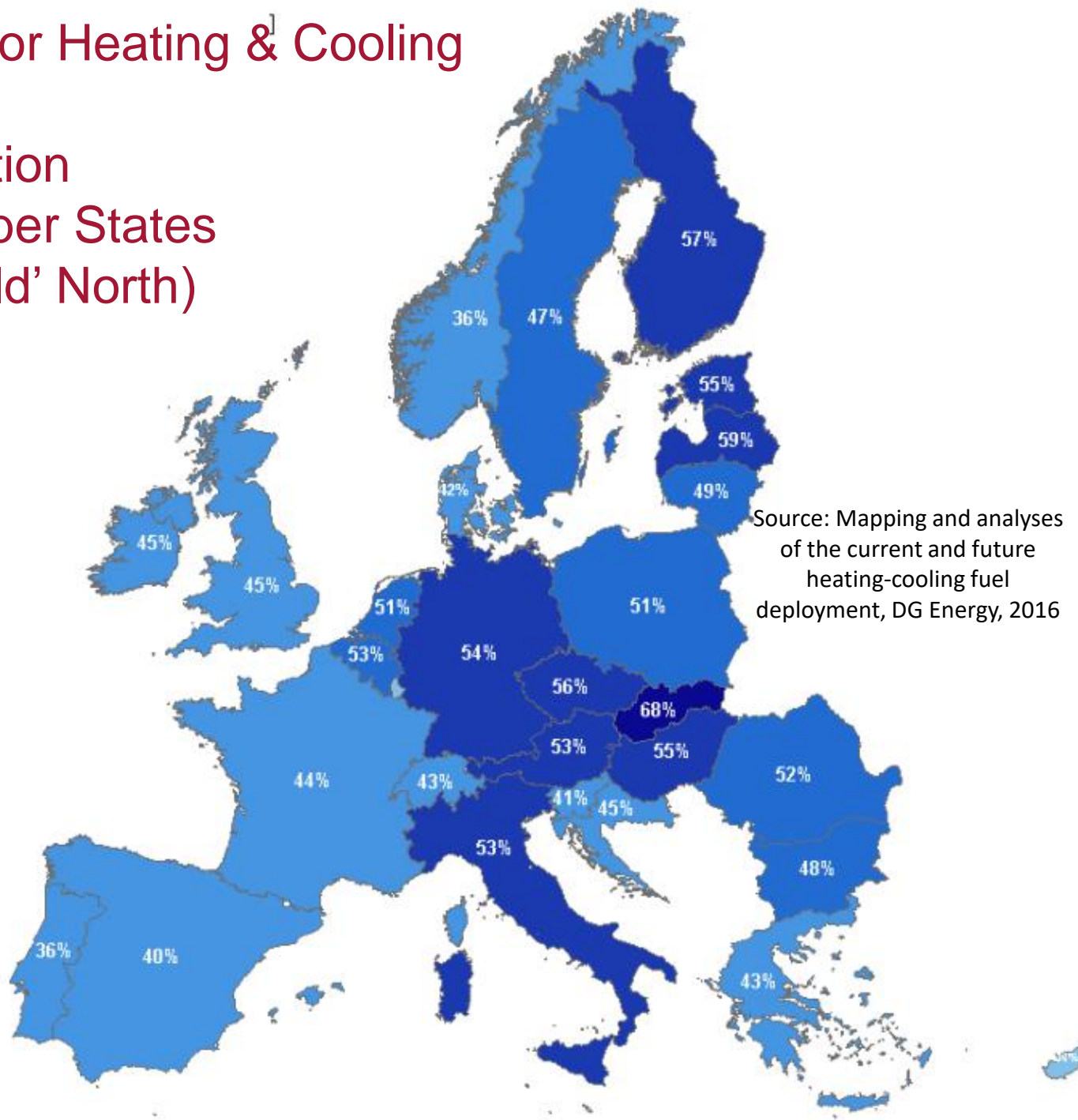
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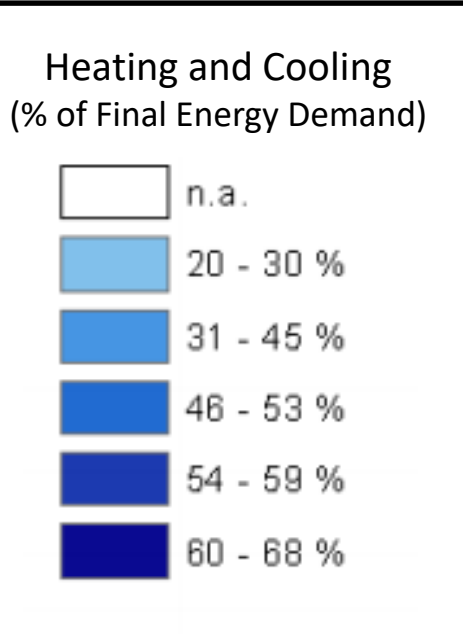


Current Situation for Heating & Cooling

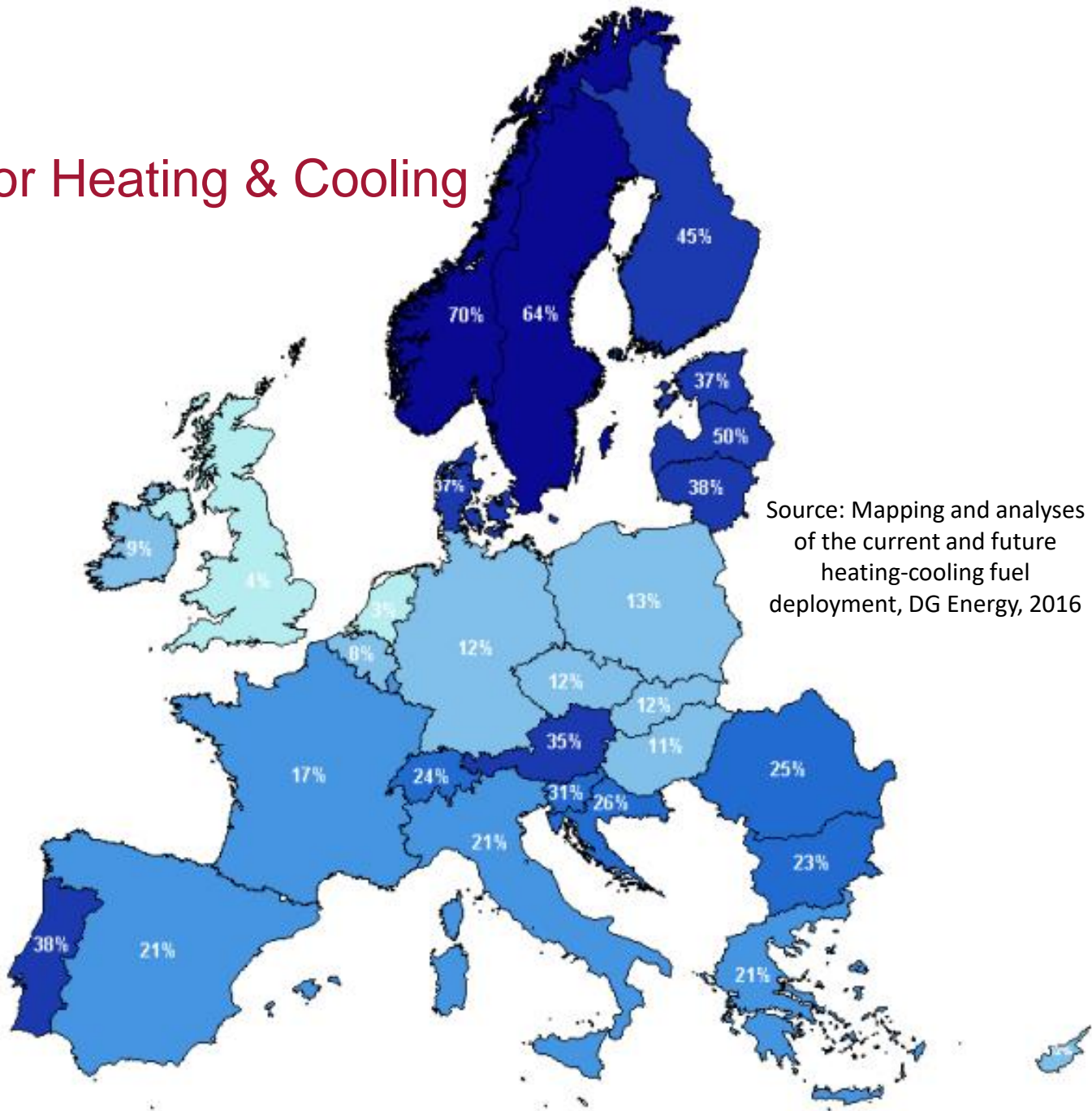
Largest Consumption
Large for All Member States
(not just the 'cold' North)



Source: Mapping and analyses of the current and future heating-cooling fuel deployment, DG Energy, 2016

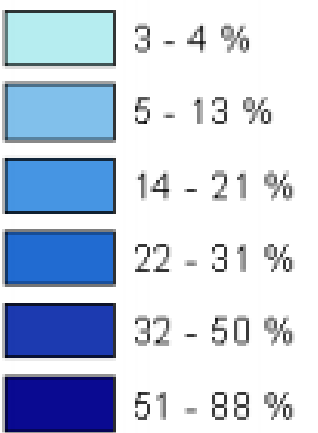


Current Situation for Heating & Cooling

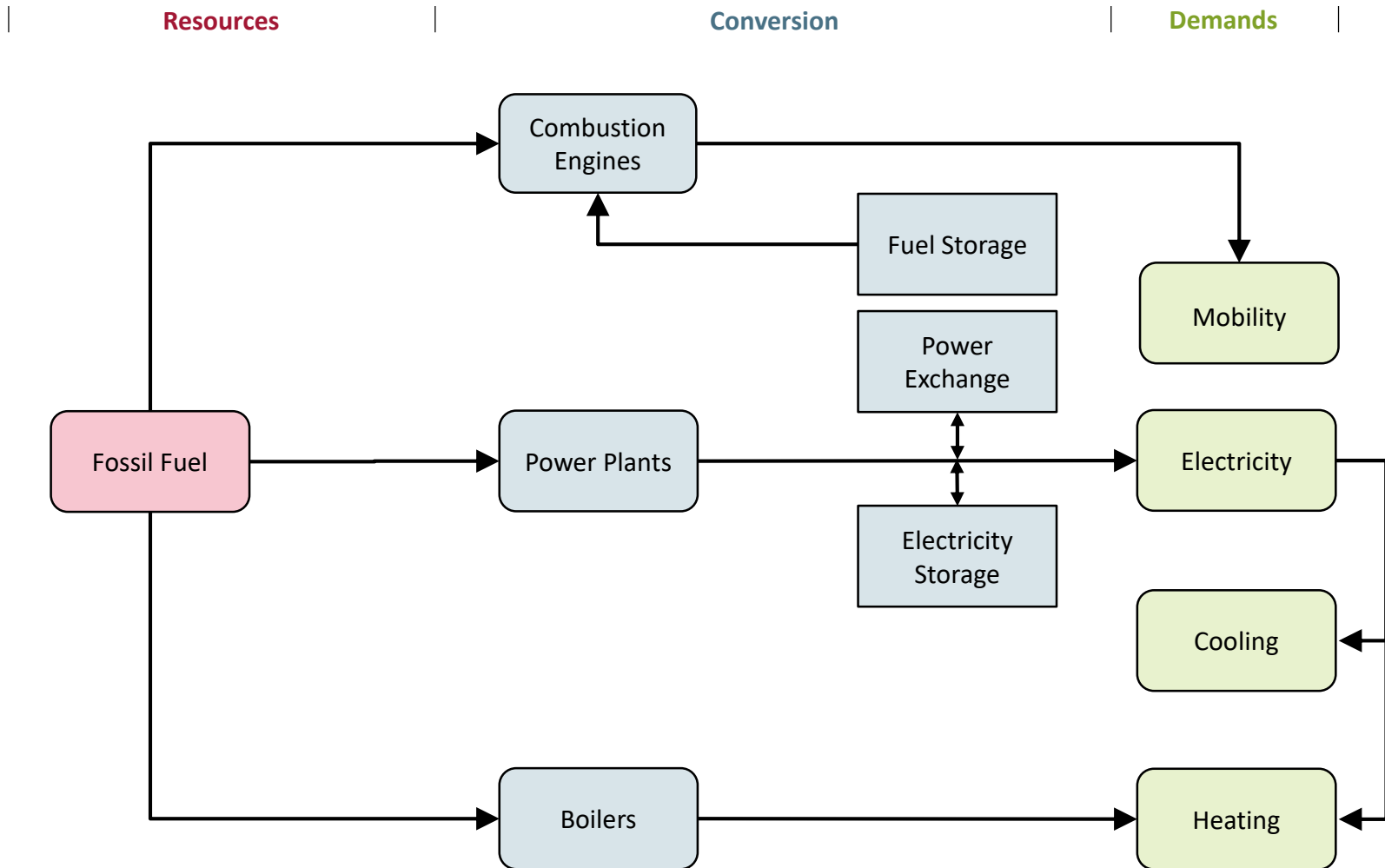


Source: Mapping and analyses of the current and future heating-cooling fuel deployment, DG Energy, 2016

Renewable Energy in Heating and Cooling (% of Primary Energy for H&C)



Today's Energy System

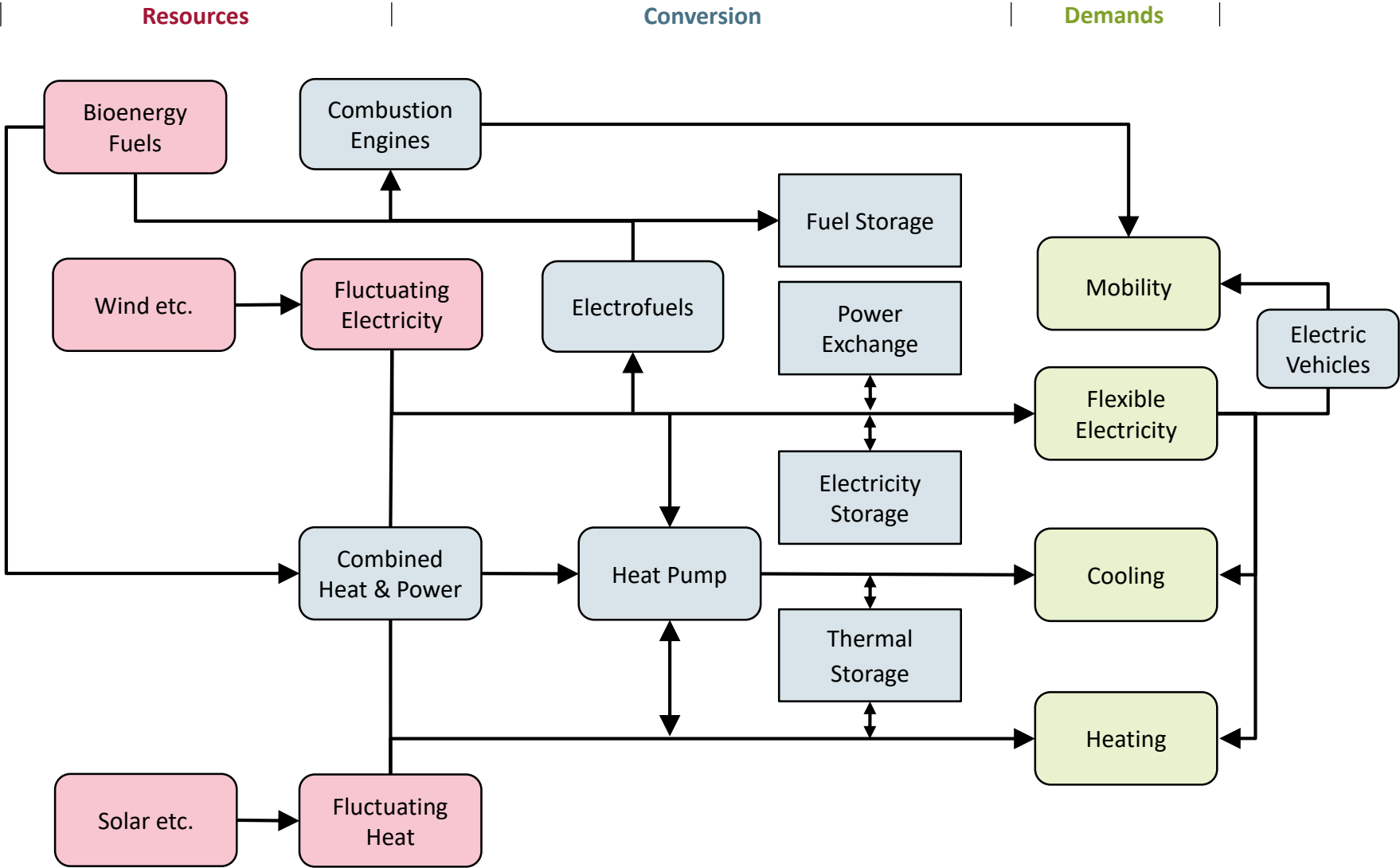


Smart Energy System

(www.SmartEnergySystem.eu)

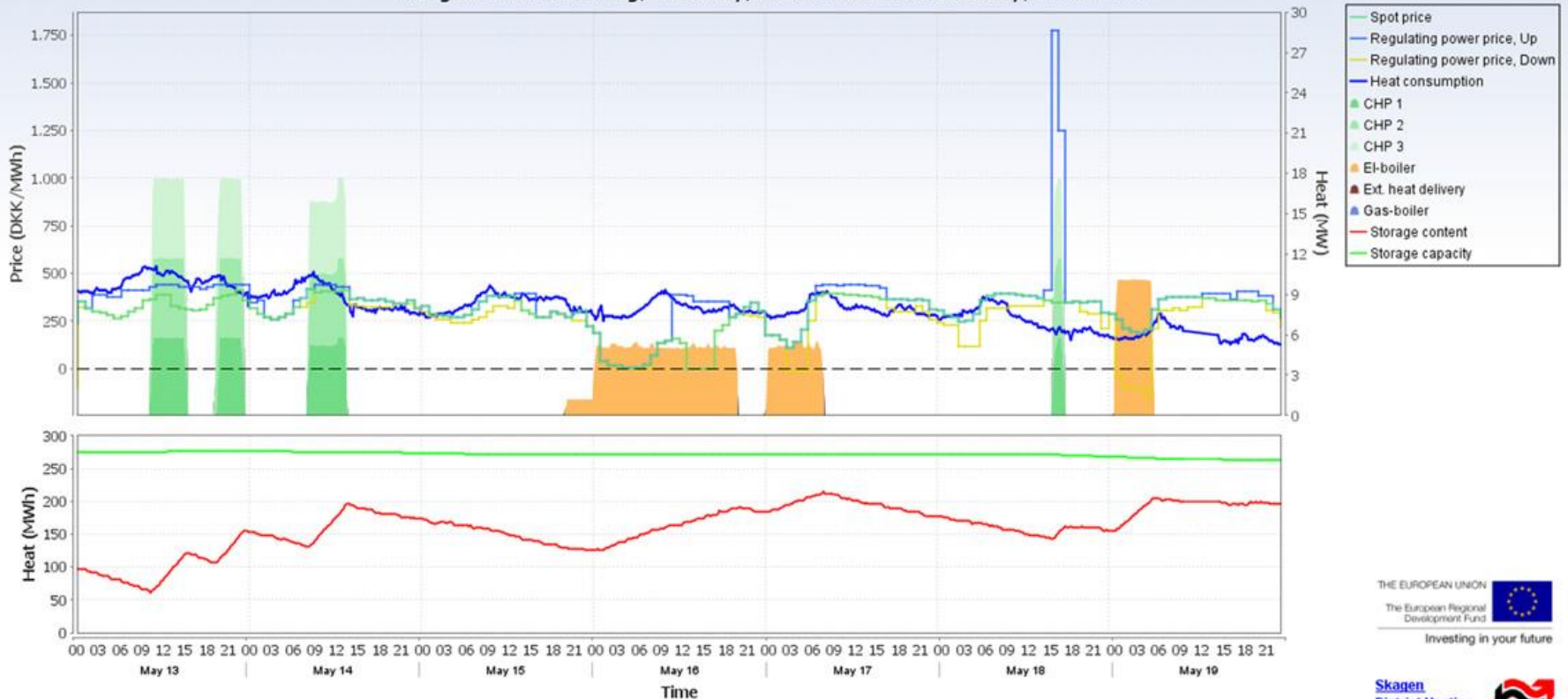


AALBORG UNIVERSITY
DENMARK



Example from Denmark: 50% Wind for December 2013

Skagen District Heating, Thursday, 2010-05-13 to Wednesday, 2010-05-19



THE EUROPEAN UNION
The European Regional Development Fund
Investing in your future

Skagen District Heating



EMD International A/S
www.emd.dk

Key Recommendations for the Heat Sector



Everywhere

Heat Savings

Balance Savings vs. Supply

30-50% Total Reduction

Urban Areas

District Heating Networks

High Heat Density Areas

Supply ~50% of the Heat Demand

Rural Areas

Primarily Electric Heat Pumps

Smaller Shares of Solar Thermal & Biomass Boilers

Remaining ~50% of the Heat Demand



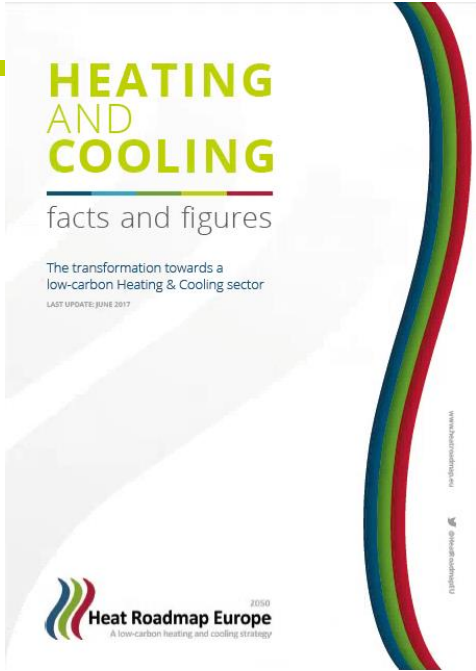
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Main results so far

Maps with specific and realistic data on the location, plus scale of heat demand and excess heat



Profile of heating and cooling demand in 2015

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DHC+
TECHNOLOGY PLATFORM

under the umbrella of



**EUROHEAT
& POWER**