

HEAT ROADMAP EUROPE 3 OUT NOW

The Heat Roadmap Europe 3 (STRATEGO) study outlines how energy efficiency on the demand and supply side of the heat sector can simultaneously reduce energy demand, carbon dioxide emissions, and energy costs in five EU Member States:



Czech Republic, Croatia, Italy, Romania, and the United Kingdom. All three countries will require more heat savings in the buildings, an expansion of district heating in the cities, and more electric heat pumps in the rural areas. In total over €1 trillion of investment is required across all five countries, but these investments will result in a net reduction in energy costs. The final reports and maps are available here: www.heatroadmap.eu.



AUTHORS



SUMMARY

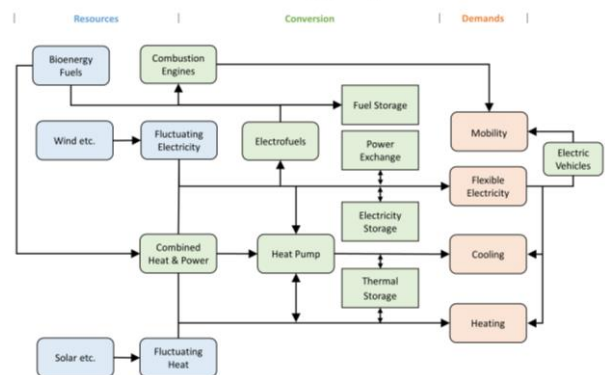
Heat Plan Denmark was the first ever study that combined local mapping of the heat demand with national energy planning to create a holistic heat strategy for an EU Member State. It outlined how various solutions could be combined in the heating sector of Denmark, to simultaneously reduce energy costs and decarbonise the Danish heating sector. It was first published in 2008, with a follow-up study in 2010, both of which were instrumental in defining Danish policies for the heating sector.



In 2012, the first Heat Roadmap Europe study was published (HRE1), where the Heat Plan Denmark methodology was applied to the EU energy system. In this study, Europe was modelled as one energy system, since the primary objective was to establish if the Heat Plan Denmark methodology was relevant in an EU context, rather than to define an 'optimum' heating solution. During HRE1 it became apparent that some crucial knowledge was missing to adequately design and analyse the heating sector in Europe, including suitable data, tools, methodologies, and results. To begin addressing this issue, HRE1 was the first study ever to:

- Model the electricity, heating, cooling, industry, and transport sectors of Europe on a one-hour time resolution, using the EnergyPLAN tool (www.EnergyPLAN.eu) based on the Smart Energy System concept (www.SmartEnergySystem.eu)
- Develop a 1 km² thermal atlas of the heat demand in Europe, currently known as the Pan-European Thermal Atlas (Peta)
- Quantify the amount of excess heat available from power plants, industry, and waste incineration in Europe

Smart Energy System



Using the new data, tools, and methodologies in HRE1, it was possible to demonstrate that district heating is extremely relevant for the decarbonisation of the EU heat sector. The heat demand is sufficiently high in cities across all of Europe to economically develop district heating and there is currently more excess heat in Europe than is required to heat all of the buildings in Europe.



Heat Roadmap Europe 2 (HRE2) built on this work in 2013 by analysing the demand side of the heat sector as well as the supply side. HRE2 quantified the cost of implementing heat savings in the buildings in Europe, thus demonstrating how there is an economic balance between reducing the heat demand and supplying heat. In other words, it is essential to both reduce the heat demand and simultaneously improve the sustainability of the heat supply. In line with this, the key recommendations from HRE2 are:

