



2050
Heat Roadmap Europe

A low-carbon heating and cooling strategy

2015 Final Heating & Cooling Demand in Hungary



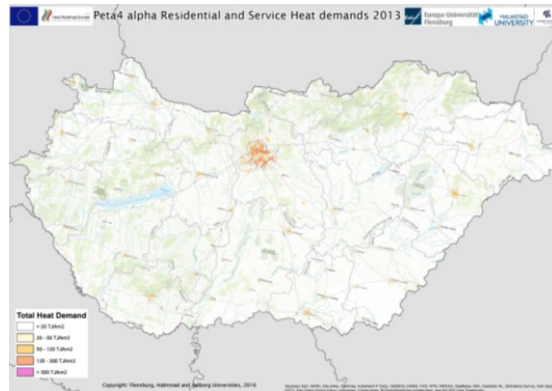
Country presentation
October 2017

Context of Hungary



General context

- **Population** ^[1]:
9.9 million
 - 2% of EU28
- **GDP** ^[1]:
104 billion EUR
 - 0.8% of EU28
- **Heating degree days** ^[2]:
2 597 HDDs/year
 - 10th coldest of the EU28
 - 4th warmest of the 14 HRE countries

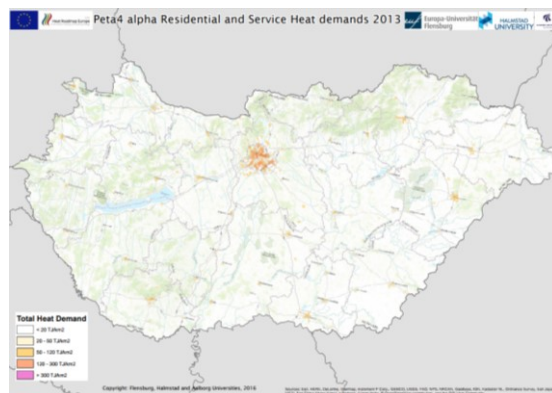


Heat Demand Atlas (major population centres are visible [HRE4, 2013])

1. DG Energy's 2014 data from the [Hungarian datasheet](#) (2016)
2. Eurostat's 2015 data on [HDDs](#) in in Hungary (2016)

General context – Energy intensity

- **Total final energy demand (FED)** ^[3]:
205 TWh
 - 1.6% of EU28
 - 13th highest of EU28 and HRE14
- **FED per capita** :
20.4 MWh/Capita
 - 19th highest of EU28
 - 11th highest of HRE14
- **Final energy from renewable sources** ^[4]:
29.1 TWh
 - 14.5% of total FED
 - 19th highest share of EU28
 - 10th highest share of HRE14
- **Final energy from renewable sources for H&C** ^[4]:
21.1 TWh
 - 21.3% of the total H&C
 - 15th highest share of EU28
 - 5th highest share of HRE14



Heat Demand Atlas (major population centres are visible [HRE4, 2013])

3. Eurostat's 2015 data on [annual energy quantities](#) in Hungary
4. Eurostat's RES [Shares 2015 results](#)



Climate and emissions

- Hungary has committed to a GHG emission increase of maximum 10% ^[5] of 2005 levels, by 2020, within the EU Climate and Energy Package

Carbon per capita [kg CO ₂ /person]	Carbon per GDP [ton CO ₂ /billion EUR]	Carbon Emission per tone of energy carrier (carbon intensity) [kg CO ₂ /toe]
4,463	425	1,936
2 nd lowest among the 14 HRE	4 th highest among the 14 HRE	5 th lowest among the 14 HRE
2014 data ^[2]		

1. DG Energy's 2014 data from the [Hungarian datasheet](#) (2016)
5. Official Journal of the European Union, [Decision No. 406](#) (2009)

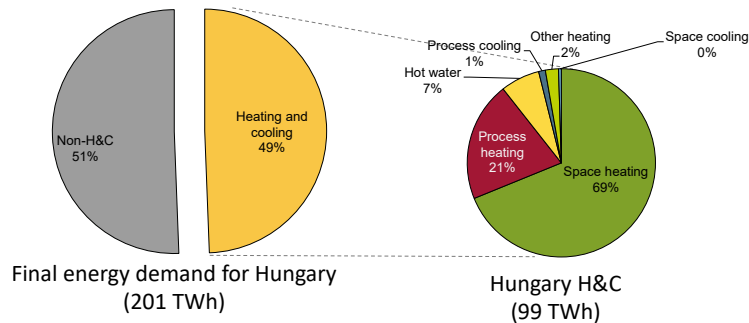
Current national energy situation





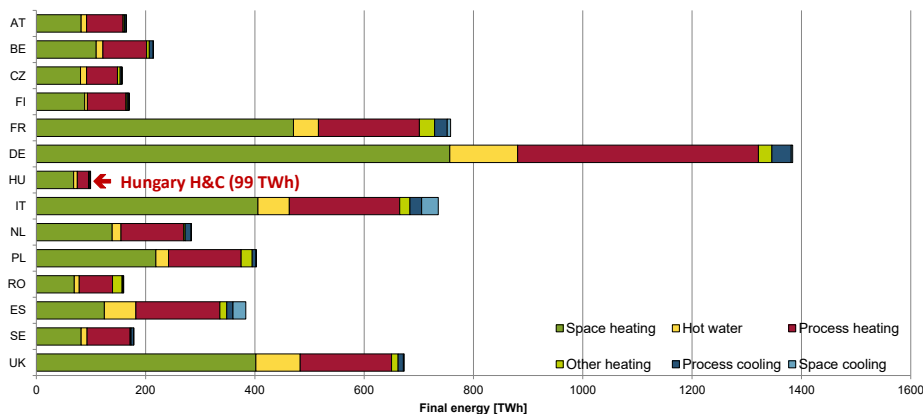
Hungary: H&C energy by purposes

- H&C comprises 49% of Hungary's final energy demand.
- Space and process heating account for 90% of the total H&C need.
- Hungary has almost no cooling need.



14 HRE: H&C energy by purposes

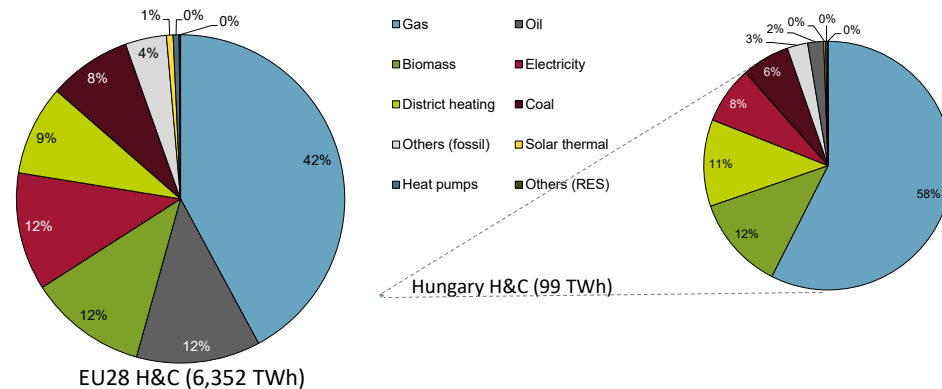
- Hungary has the lowest final energy demand for H&C among the 14 HRE countries.





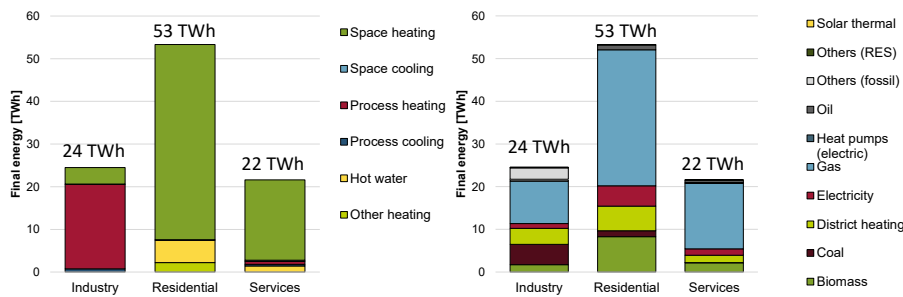
H&C energy by energy carriers

- Hungary accounts for 1.6% of the EU28's total delivered H&C demand.
- Compared to the EU28, Hungary uses more gas and a bit more district heating, while using a bit less electricity and coal.



Sectors by purposes and energy carriers

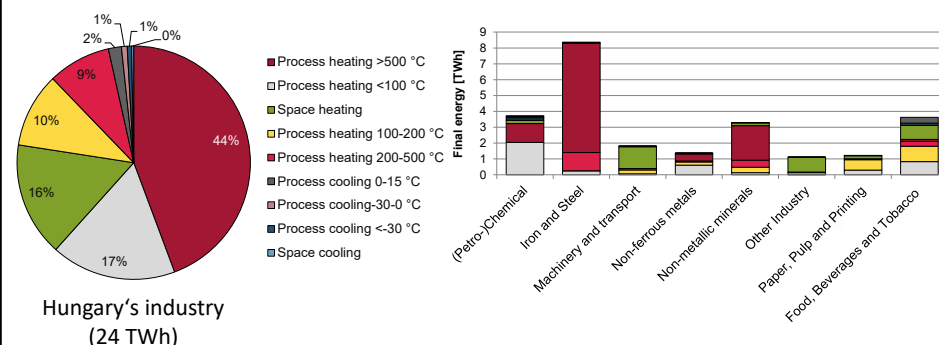
- Hungary's industries are overwhelmingly dominated by process heating, other sectors by space heating.
- Hungary's industry, households and services sectors use mainly gas, but they also use a wide range of other energy sources.





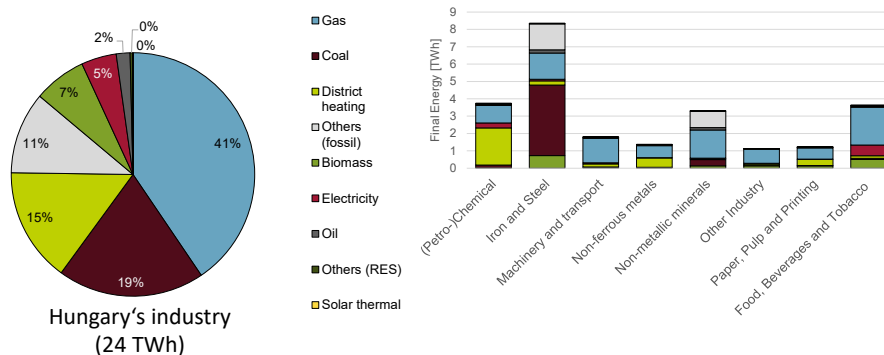
Industry sub-sectors by H&C purposes

- Hungary's industry uses mostly high temperature process heating, but also lower temperature process heating and space heating.
- Most of the high temperature process heating is used for the '(Petro-)Chemical', 'Iron and steel' and 'Non-metallic minerals' sectors, while the space heating is divided among all sub-sectors



Industry sub-sectors by energy carriers

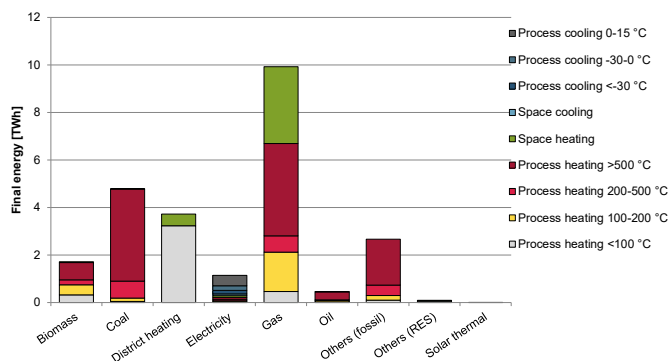
- To attain this heating, Hungary's industry uses mostly natural gas and coal, and to a smaller extent district heating.





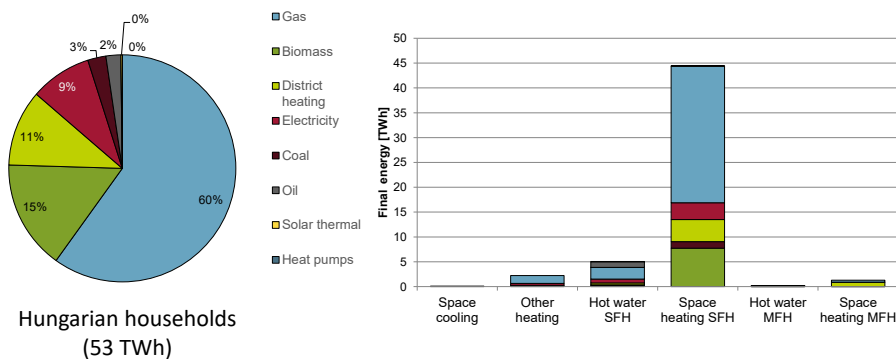
Industry Space Heating

- Hungary's Industry uses mostly gas for space heating, although there is some district heating too



Residential sub-sectors by energy carriers

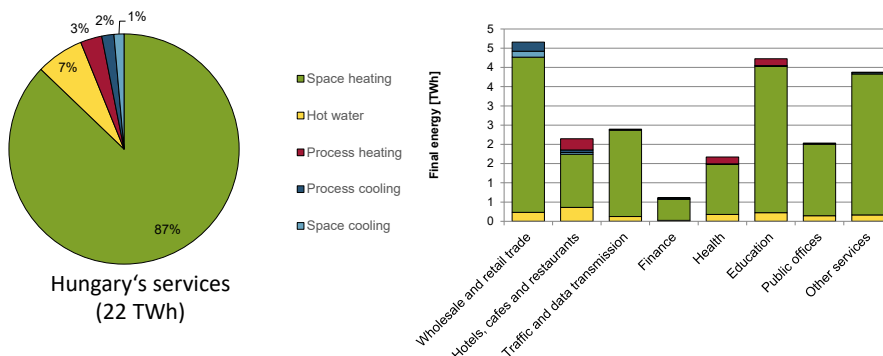
- Hungarian households use primarily gas for heating, most of which goes to space heating of single-family homes.
- Single-family homes also use some biomass, district heating and electricity.





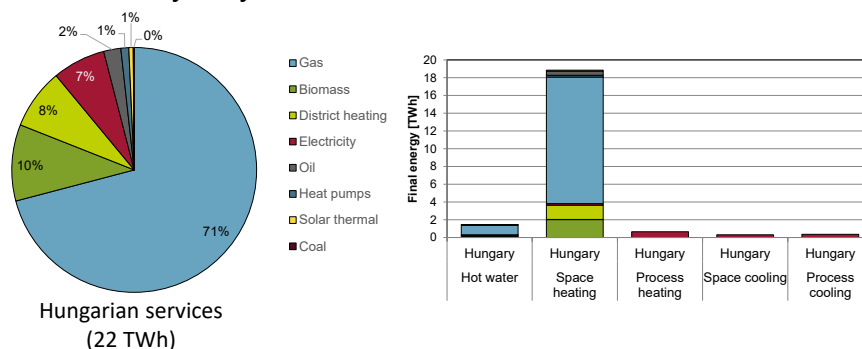
Service sub-sectors by H&C purposes

- Space heating is definitely the main concern for Hungary's service sector.
- Hungary's service sector has very little demand for cooling. The only sub-sector using cooling are the 'wholesale and retail trade' and the 'hotels, cafes and restaurants' sub-sectors.



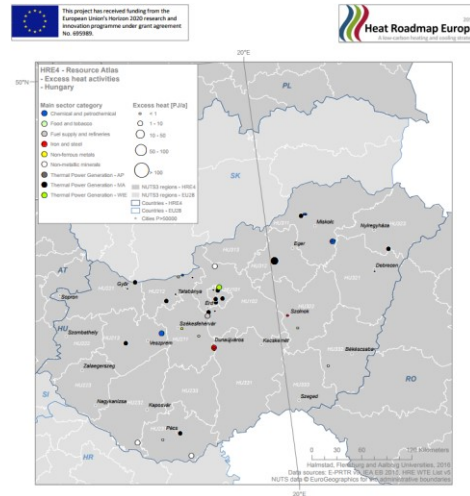
Service sectors by energy carriers

- Hungary's service sector uses mainly gas, most of which goes to space heating.
- All cooling and process heating are powered by electricity only.



Excess heat sources

- **Excess Heat:**
At least 29 Twh*
 - Would cover 39% of the final energy demand for Space heating and Hot water in Hungary
- The biggest concentration of excess heat sources are located in the North-central region of Hungary.

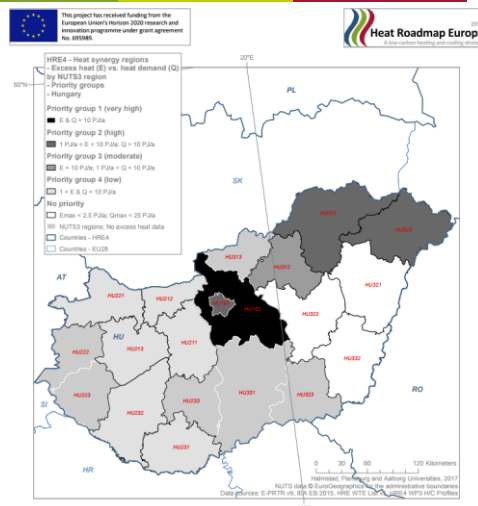


Excess Heat Atlas [HRE4, 2013]

* Calculated from the 46 biggest facilities in Hungary, using [Peta 4.2](#)

Heat Synergy Regions

- 1 region presents a very high potential for district heating
- 3 other regions present a high potential for district heating



Excess Heat Atlas [HRE4, 2013]



Main references cited

1. DG Energy's 2014 data from the [Hungarian datasheet](#) (2016)
2. Eurostat's 2015 data on [HDDs](#) (2016)
3. Eurostat's 2015 data on [annual energy quantities](#)
4. Eurostat's RES [Shares 2015 results](#)
5. Official Journal of the European Union, [Decision No. 406](#) (2009)