

# EU perspectives on energy efficiency policies and funding opportunities

13.10.16

Romanian Energy Efficiency Forum

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# Outline





## EUROHEAT & POWER

International network for district energy, promoting sustainable heating and cooling in Europe and beyond

Members from +30 countries: national DHC associations, utilities, manufacturers, universities, research institutes and consultancies

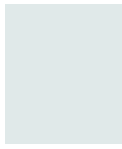
- *Advocacy and Representation*
- *Knowledge and Visibility*
- *Research and Innovation*
- *Partnerships and Coalitions*
- *Events and Communication*



No energy transition without sustainable cities.

No sustainable cities without sustainable heating and cooling.

No sustainable heating and cooling without district energy.



# Energy Efficiency throughout EU climate & energy policy framework

EU 2020 → Energy Efficiency Directive (EED) 2012/27/  
EU

EU 2030-2050 Framework / Global climate agreements

Energy Union strategy (2015)

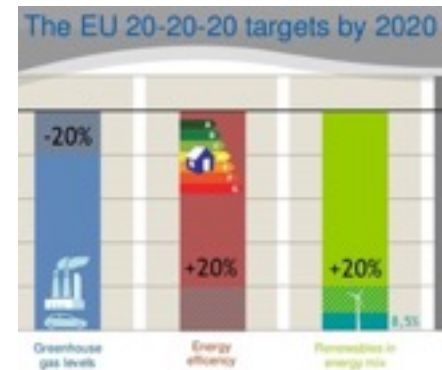
Heating & Cooling strategy (2016)

Reviews EED, EPBD, RES (expected end 2016)

Energy Security

Environment & Climate Action

Smart Cities / Urban Agenda





## EED Art. 14: Promotion of efficiency in heating and cooling

By end 2015: comprehensive assessment on high-efficiency cogeneration and efficient district heating and cooling

Cost-benefit analysis: identification of the most resource- and cost-efficient solutions to meeting heating and cooling needs



EU-funded projects to support policy-making  
Example: <http://stratego-project.eu>

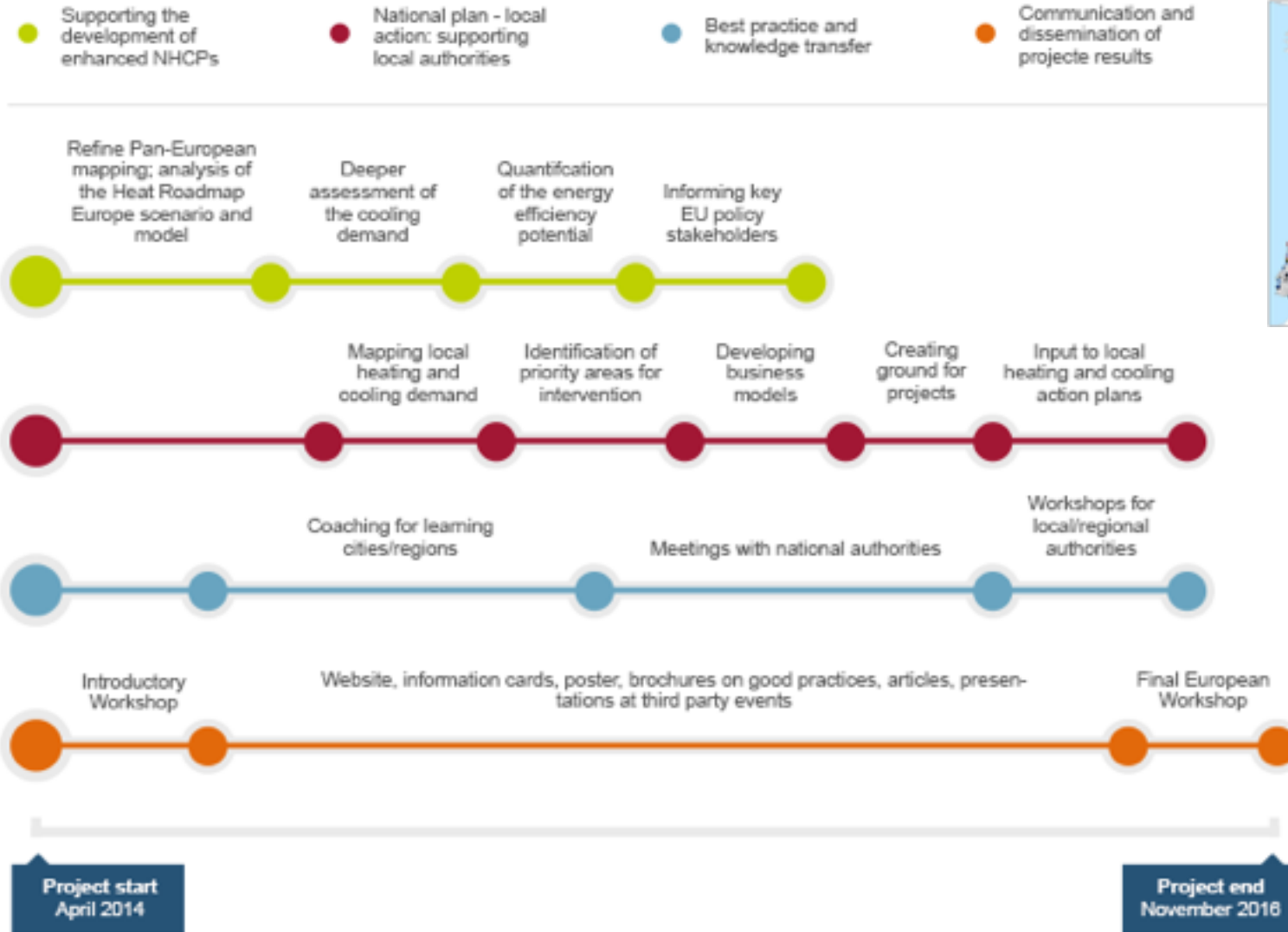


National reports  
Example: [Romania](#)



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

# STRATEGO: Multi level actions for enhanced Heating and Cooling plans



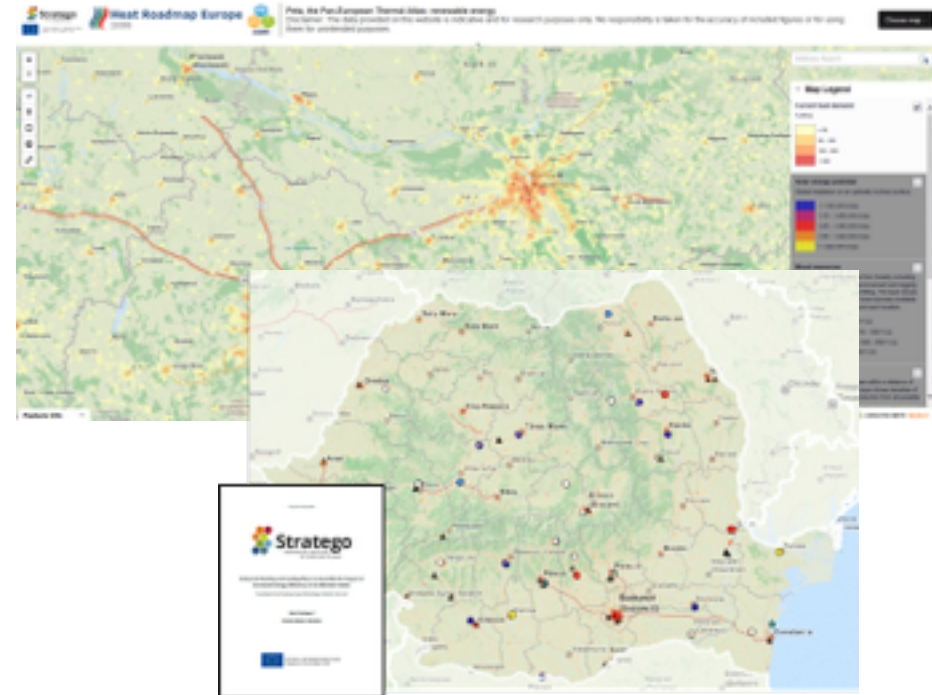
# From modelling & mapping to local heating & cooling plans

Aim: develop low-carbon heating and cooling strategies (Heat Roadmaps)

Pan European Thermal Atlas

Specific Map & Summary Report for each country ([CZ](#), [HR](#), [IT](#), [RO](#), [UK](#);

25-30% of EU H&C demand)





# STRATEGO recommendations, conclusions & follow-up

| Heat Roadmaps  | Heat Savings  | District Heating  | Individual Heating Technology   | District Heat Supply from Renewable Heat & Excess Heat* |
|----------------|---|---|---|---|
|                | Reduction as a Percentage of the BAU 2050 Heat Demand | % of Total Heat Demand after Heat Savings (vs. % today) | Primary Technology  | % of District Heat Production                           |
| Czech Republic | 40%   | 40% (25%)   | Heat pumps are recommended as the primary technology with small shares for biomass boilers, and solar thermal. The exact mix of each technology is not optimised. | 65%   |
| Croatia        | 40%   | 40% (15%)   |   | 45%   |
| Italy          | 30%   | 60% (<5%)   |   | 40%   |
| Romania        | 50%   | 40% (20%)   |   | 50%   |
| United Kingdom | 40%   | 70% (<5%)   |   | 45%   |

\*Doesn't include excess heat from thermal power plants or thermal boilers.

➤ 50% of the heat demand in Europe can be supplied with **district heating**

➤ There is more **excess heat** in Europe than all of the heat demand in buildings

➤ The heat sector is one of the cheapest options of **integrating renewables**

➤ Energy efficiency is required on both the **demand AND supply** side of the heat sector

[Heat Roadmap Europe 2050](#) - 14 countries, 85-90% EU heat demand

[Planheat](#): empowering public authorities in the development of sustainable plans for low carbon heating and cooling



# EED Art. 14: Romania report



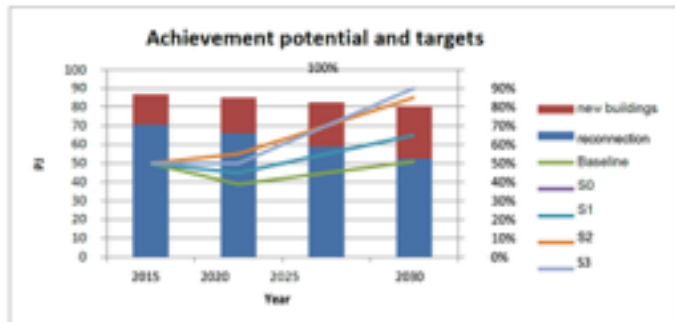
## Assessment:

- 20% population served by DH - continuous downward trend / disconnections
- 315 DH systems in 1989 → 70 in 2014
- 30% national average heat network losses in 2014 (target 15



## Potential:

- 30% energy efficiency improvement potential for DH infrastructure
- Great potential for cogeneration & district cooling
- Decrease in average consumption foreseen 2015: 600 MJ/m<sup>2</sup>/y → 2030: 440 MJ/m<sup>2</sup>/y
- Potential for transmission & distribution network refurbishment



\* *STRATEGO* is mentioned as source for report



# EU Heating & Cooling Strategy

## Key principles:

**Buildings** → renovation and deployment of efficient, sustainable supply (renewables, waste heat/cold).

**Industry** → energy efficiency and renewable energy, recovery of waste heat & cold.

### 3 key synergies :

- Linking energy savings with the deployment of sustainable (renewable-based, low carbon) supply;
- Linking heating & cooling with the electricity systems;
- Linking heating & cooling of buildings with industry for the use of waste heat and waste cold.



## Implications:

Heating and cooling will remain the biggest demand in 2050

Current reliance on ‘obsolete fossil-fuel boilers’ is unsustainable

A shift to renewable energy and surplus heat is possible and necessary

District heating will have a vital role to play in supplying green heat and enabling integration of energy system

*\* STRATEGO & HRE were basis for EC assessment & strategy*



## Next steps: Energy Efficiency policy

### Energy Efficiency Directive review:

- Scope: Art. 3 (Energy Efficiency target), 6 (purchasing by public bodies), 7 (energy efficiency obligations), 9-11 (billing and metering) and 20 (Energy Efficiency National Fund , Financing and technical support) - [EC presentation](#)
- Timeline: expected EC proposal 7 December 2016

### Other ongoing reviews:

- Energy Performance of Buildings Directive
- Renewable Energy Sources Directive
- Electricity Market Design
- EU Emissions Trading Scheme



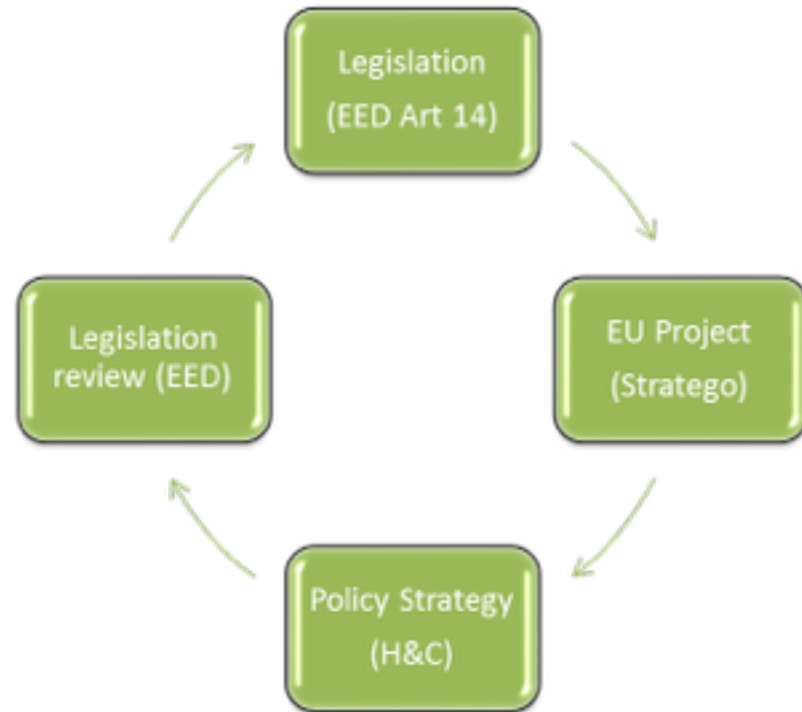
## Next steps: Energy Efficiency funding

| Topic           | Activity  | Budget (€)        |
|-----------------|---|-------------------|
| EE-03-2016      | Standardised installation packages integrating EE and RES H/C               | 4,000,000         |
| EE-04-2016      | New heating and cooling solutions using low grade sources of thermal energy | 4,000,000         |
| EE-05-2016      | Models and tools for H/C mapping and planning                               | 3,000,000         |
| EE-01-2017      | Waste heat recovery in urban areas  | 4,000,000         |
| EE-02-2017      | Improving efficiency of DH schemes  | 2,000,000         |
| EE-04-2016-2017 | Low temperature DH for high energy performance buildings                    | 4,000,000         |
| EE-09-2016-2017 | Engaging and activating public authorities                                  | 2,000,000         |
| EE-17-2016-2017 | Valorisation of waste heat in industrial systems                            | 5,000,000         |
| EE-22-2016-2017 | PDA on Retrofitting of existing DHC   | 1,500,000         |
|                 | <b>Total</b>  | <b>29,500,000</b> |



# Final thoughts

-  Energy efficiency is required on both the **demand AND supply** side
-  Heat and district heating are **finally on the EU agenda**
-  Virtuous circle between **EU projects & policy**
-  **National lobbying** can make an impact at all levels!



THANK YOU



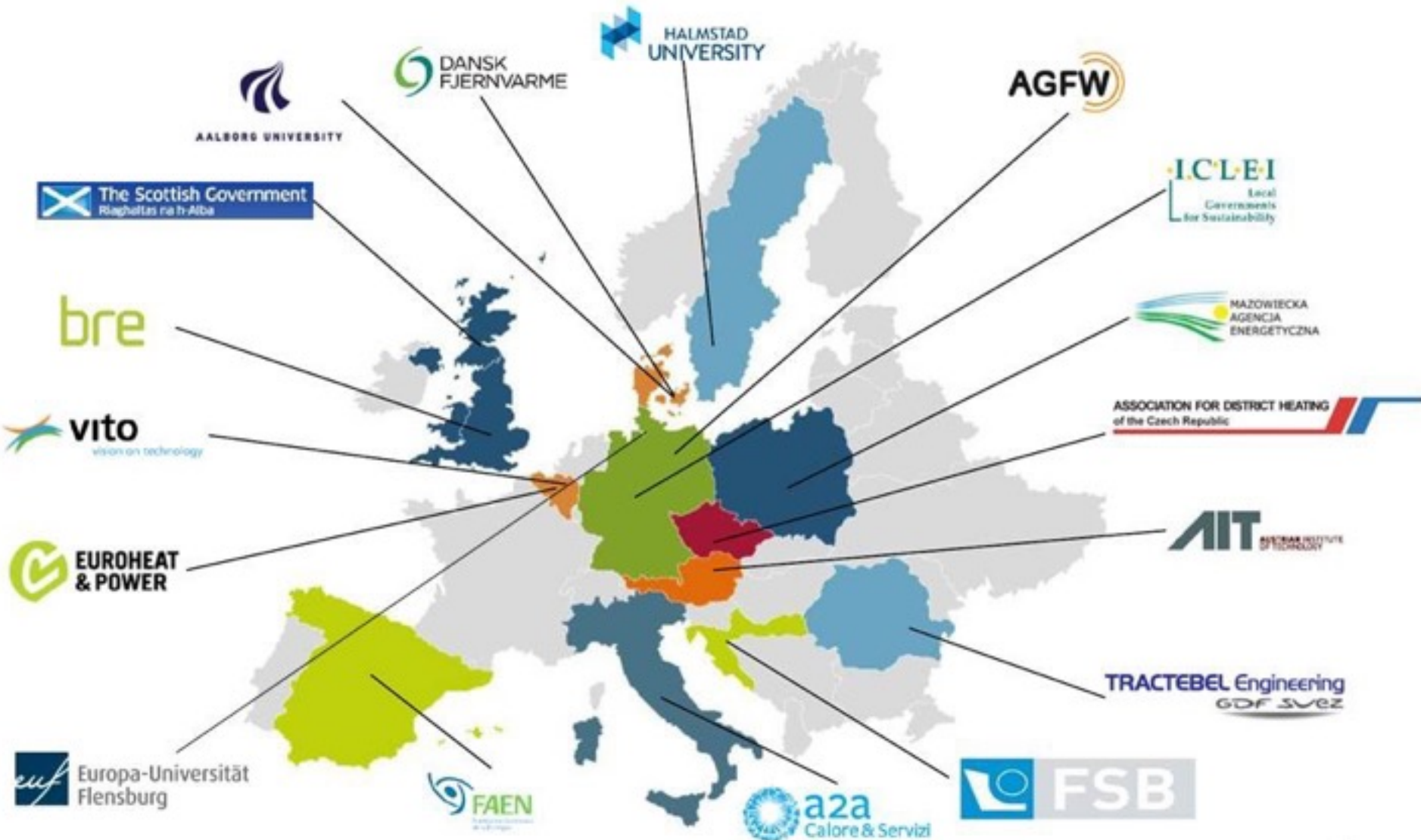
[www.euroheat.org](http://www.euroheat.org)



[dp@euroheat.org](mailto:dp@euroheat.org)



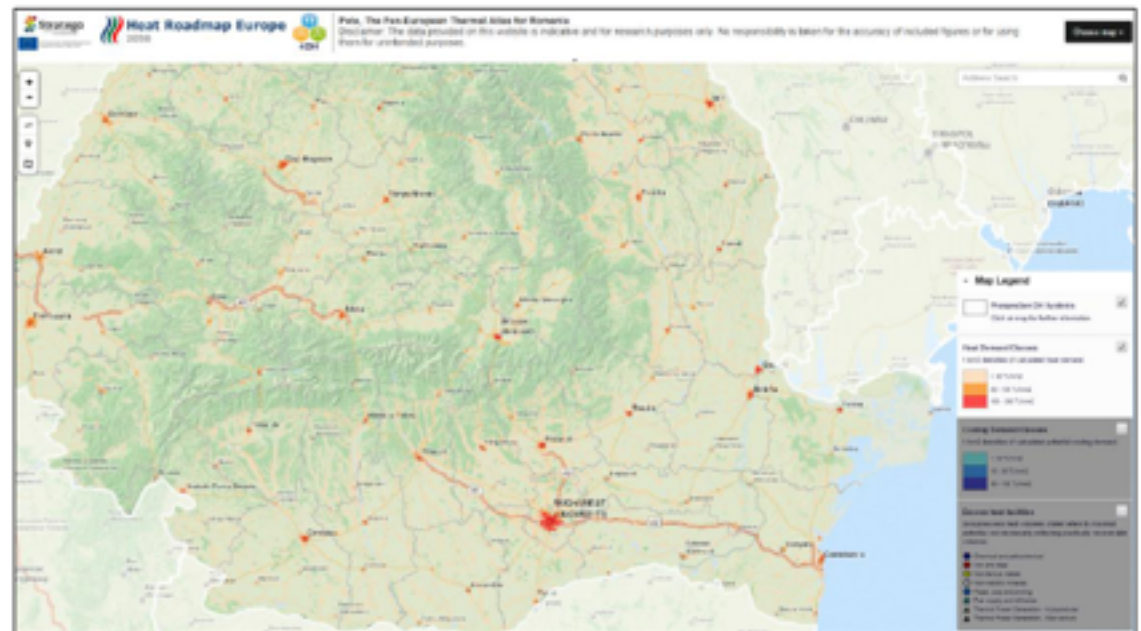
[@EuroheatPower](https://twitter.com/EuroheatPower) [@DanaPoppEU](https://twitter.com/DanaPoppEU)



- 81 TWh: Total heat demand in buildings (city & rural)
- 70 TWh: Potential Excess Heat Available (excluding nuclear)
- 39 TWh: Renewable Heat Potential in DH areas (excluding biomass)
- Heat Savings can cost-effectively reduce the demand by 50%
- District heating can provide 40% of the heat demand vs 20% today
- Can reduce total energy:

- Cost: -10%
- Demand: -25%
- CO<sub>2</sub>: -35%

- Can Increase:
- Renewables
- Jobs







## H2020 Low-Carbon Energy calls

| Topic            | Activity   | Budget (€)        |
|------------------|--|-------------------|
| LCE-05-2017      | Development of technologies, tools and systems to support synergies between electricity, gas and heat networks | 4,000,000         |
| LCE-07-2016-2017 | Developing the next generation technologies of <b>renewable</b> electricity and <b>heating/cooling</b>         | 2,000,000         |
| LCE-12-2017      | Near-to-market solutions for the use of <b>solar heat in industrial processes</b>                              | 8,000,000         |
| LCE-18-2017      | Enhanced geothermal systems in different geological conditions   | 10,000,000        |
| LCE-21-2017      | <b>Market uptake of renewable energy technologies</b>  | 3,000,000         |
| Horizon prize    | Combined Heat and Power (CHP) installation in a hospital using <b>100% renewable energy sources</b>            | 1,000,000         |
|                  | <b>Total</b>   | <b>28,000,000</b> |

\*Other financing opportunities:

- Other H2020 actions (Tenders, Horizon prizes...)
- Smart Cities and Communities
- Cross-cutting activities
- Energy-efficient buildings