



Possible synergies of heat planning processes across different cases in Europe?

Applying the Hotmaps Toolbox.

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DISTRICT ENERGY
IN CITIES
INITIATIVE

Innovation Fund Denmark





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- (1) Hotmaps – The project
- (2) Hotmaps – The database and toolbox
- (3) Hotmaps – The pilot areas
- (4) Differences and synergies between pilot areas
- (5) Conclusions and next steps



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Section 1

Hotmaps – The project



Hotmaps – What for?

*Hotmaps develops, demonstrates and disseminates **a toolbox to support public authorities, energy agencies and planners in strategic heating and cooling planning** at local, regional and national levels, and in line with EU policies.*



Hotmaps – The 3 pillars

- **User-driven**: developed in close collaboration with 7 European pilot areas
- **Open source**: *the developed tool and all related modules will run without requiring any other commercial tool or software. Use of and access to Source Code is subject to Open Source License*
- **EU-28 compatible and adaptable**: *the tool will be applicable for cities in all 28 EU Member States by default and users can upload their own data*

The experts behind the project

Scientific partners



Pilot areas for developing and testing the tool



Bistrita Municipality





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Section 2

Hotmaps – The database and toolbox



Live presentation of the toolbox

www.hotmaps.eu



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Section 3

Hotmaps – The pilot areas



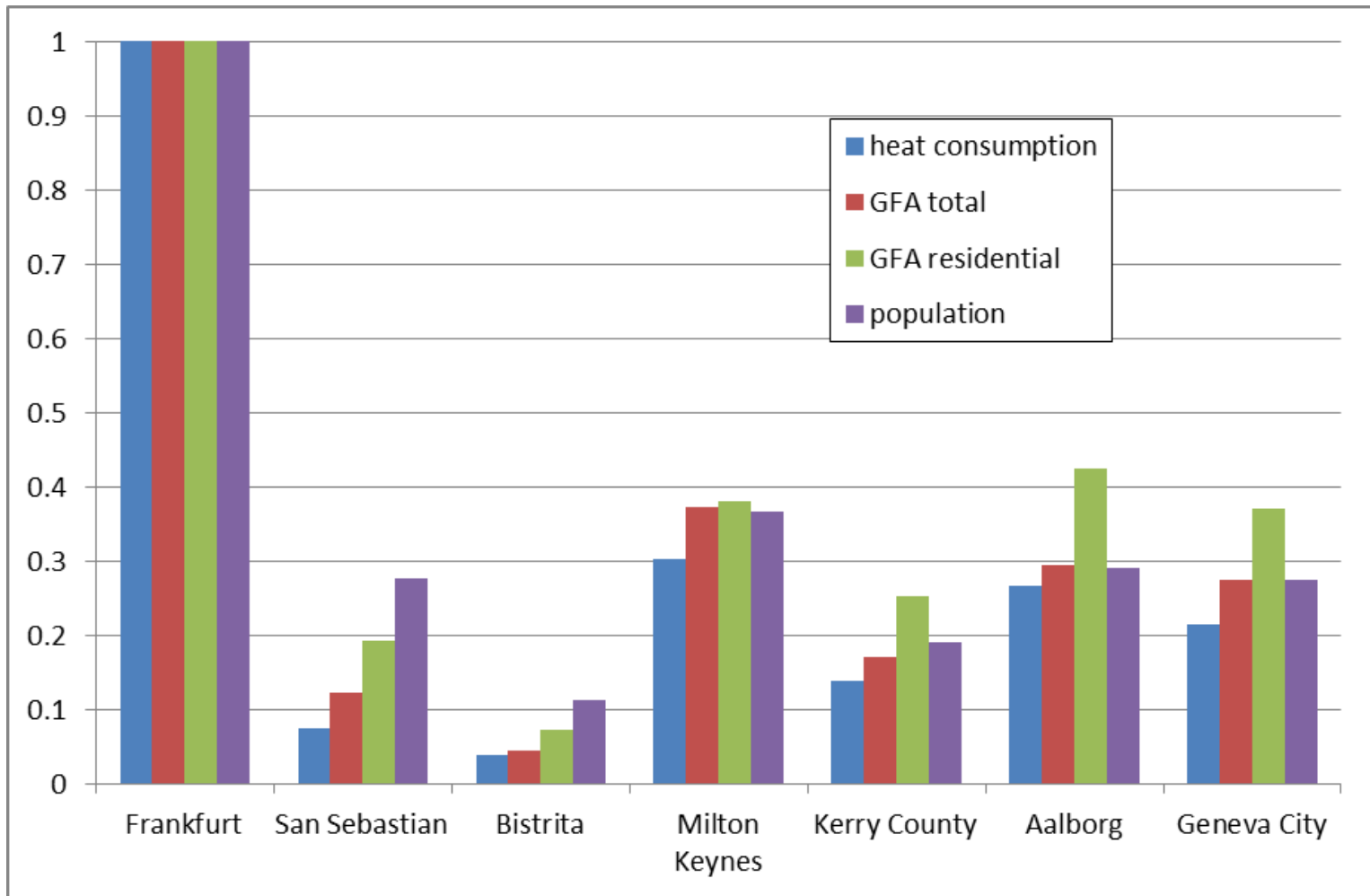
Overview of pilot areas





Overview of pilot areas

relative differences in key parameters for the pilot areas



Source: Hotmaps default data

GFA ... Gross Floor Area



Activities in the pilot areas

- Definition process of user-needs
- Testing
 - the data in the database
 - the usability of the toolbox
- Performance of a strategy development process
 - Analysis of current situation and potentials
 - Development of scenarios of possible future supply and demand systems
 - Local stakeholder process
- Dissemination



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Section 4

Differences and synergies between pilot areas



Differences and Synergies

- Differences:

- Dimensions
- Climate
- Potentials of RES and heat demand
- Questions important in the early stages of the heat planning process

- Frankfurt: large excess heat potentials, nearly no biomass;

- Bistrita: biomass available, less excess heat potentials

- San Sebastian: low demands and high costs lead to expensive potentials

- Bistrita: the other way round

e.g. use results from excess heat analysis from other city for first idea

- Synergies:

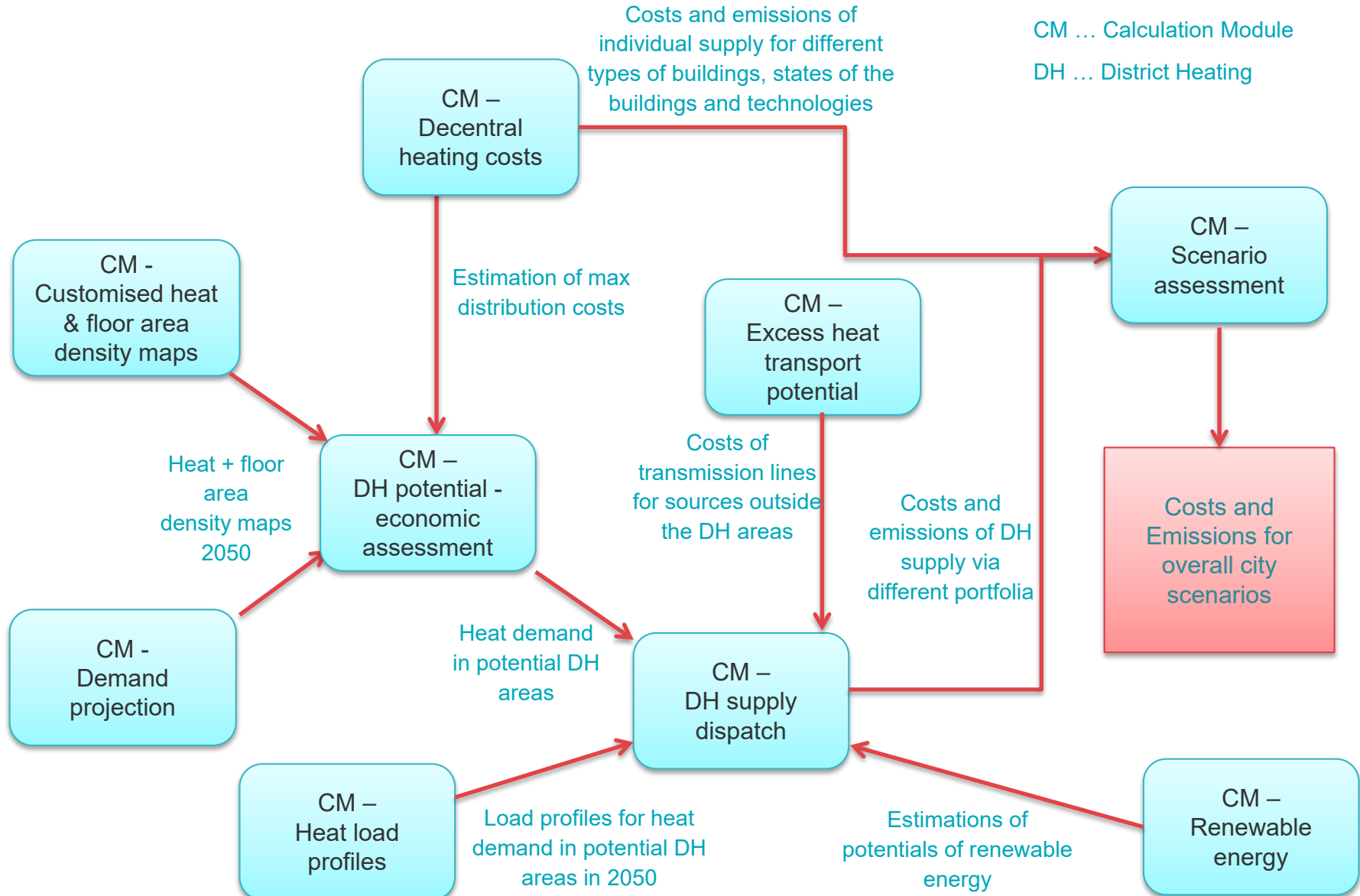
- Similar toolchains can be used
- Learnings from one city can be shared with others

Ranging from .. to ...

- What is the current amount and geographical distribution of heat demand?
- How could different excess heat sources supply high shares of the heat demand (time, temperature)



Scenario Toolchain Hotmaps





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Section 5

Conclusions and next steps



Conclusions and next steps

- Hotmaps ...
 - can be used for a variety of different locations across Europe
 - provides the opportunity to have a very quick overview and analysis of heat demand, potentials of heat savings, renewable heating and district heating
 - also provides the opportunity to go into more detail with own data and more detailed stand-alone (versions of) calculation modules to derive strategic insights
- Next steps:
 - Calculations for the heating strategies to be finished this month
 - Draft strategy documents to be formulated and discussed with local stakeholders
 - Targets and policy instruments + stakeholder analysis
 - Description of energy demand and supply + renewable potentials
 - Barriers and drivers
 - Assessment of scenarios for low carbon heating and cooling
 - Heating and cooling strategy roadmap
 - Trainings on the toolbox start in December



Explore Hotmaps

- Software:
www.hotmaps.eu
- Project:
www.hotmaps-project.eu
- Wiki:
https://github.com/HotMaps/hotmaps_wiki/wiki
- Open Source Data:
<https://github.com/HotMaps>



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Contact

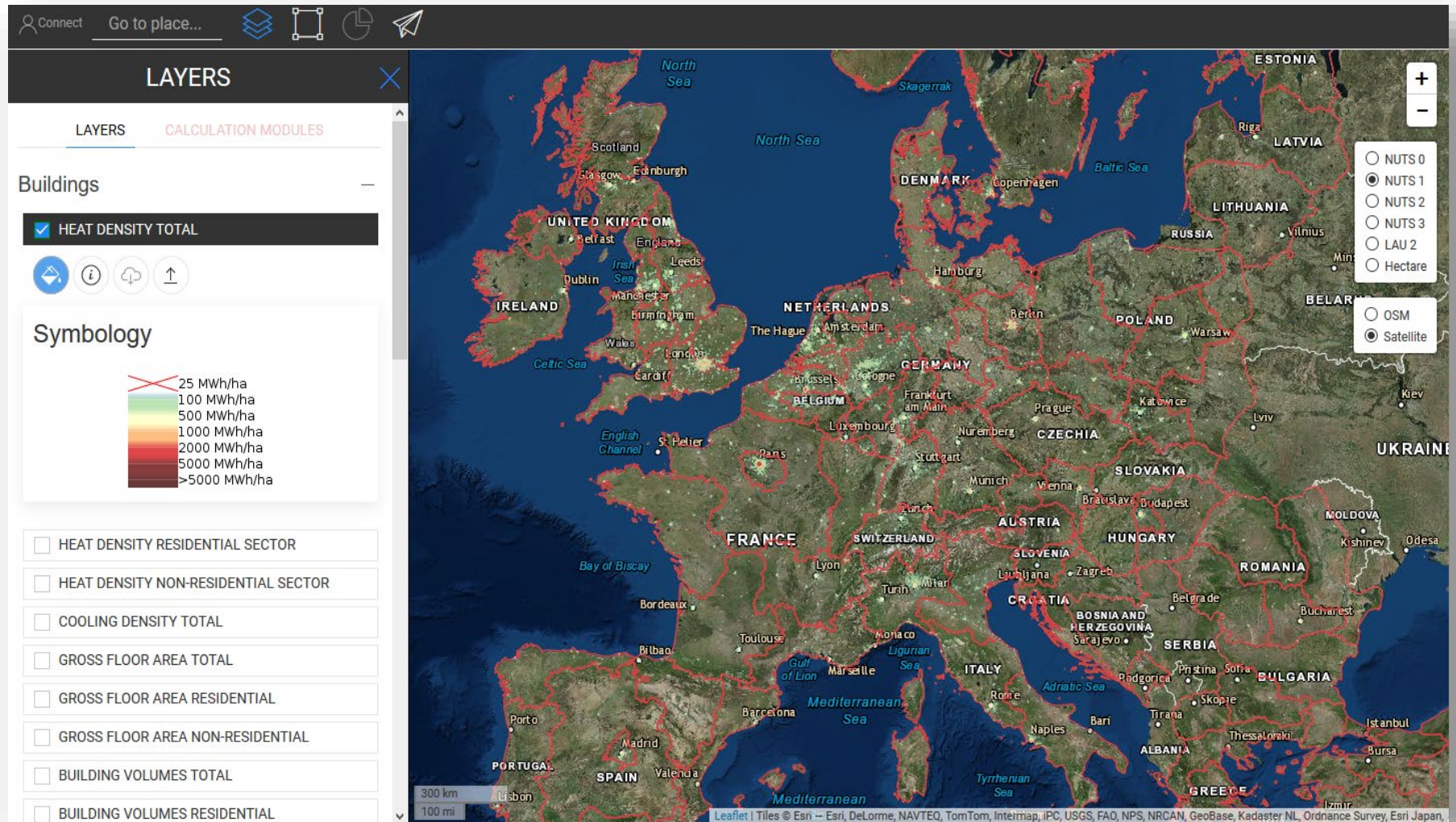
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Non-Live presentation of the toolbox





Non-Live presentation of the toolbox

Connect5, Rue de la Lc

LAYERS

CALCULATION MODULES

Buildings

HEAT DENSITY TOTAL

Symbology

25 MWh/ha

100 MWh/ha

500 MWh/ha

1000 MWh/ha

2000 MWh/ha

5000 MWh/ha

>5000 MWh/ha

HEAT DENSITY RESIDENTIAL SECTOR

HEAT DENSITY NON-RESIDENTIAL SECTOR

COOLING DENSITY TOTAL

GROSS FLOOR AREA TOTAL

GROSS FLOOR AREA RESIDENTIAL

GROSS FLOOR AREA NON-RESIDENTIAL

BUILDING VOLUMES TOTAL

BUILDING VOLUMES RESIDENTIAL

Elements selected2

ScaleNUTS 2

LOAD RESULTS

CLEAR 2 ZONES

NUTS 0

NUTS 1

NUTS 2

NUTS 3

LAU 2

Hectare

OSM

Satellite

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RESULTS

Overall

INDICATORS

GRAPHICS

INFORMATION

VALUE

HEAT DENSITY TOTAL

Heat demand total25 901.54 GWh

Counted Cells82 721 cells

Heat density min0.28 MWh/ha

Heat density max12 155.77 MWh/ha

Average heat density1 440.81 MWh/ha

EXPORT



Non-Live presentation of the toolbox

Connect 5, Rue de la Lc

Map navigation icons: Home, Layers, Full Screen, Print, Share

District Heating Potential

Name of calculation module session

This computation module calculates district heating potential within the selected region. As output, a layer for the potential areas are shown. Click on the regions to get their corresponding potential. Within the indicator/graph window, relevant indicators and charts regarding DH potential within the selected zone and potentials in sub-zones are illustrated.

INPUTS

Min. heat demand in hectare - (value: 300MWh/ha)

300

Min: 0MWh/ha; Max: 1000MWh/ha;

Min. heat demand in a DH area - (value: 30GWh/year)

30

Min: 0GWh/year; Max: 500GWh/year;

Map showing district heating potential with a selected zone (NUTS 2) highlighted in pink.

Elements selected: 2
Scale: NUTS 2

LOAD RESULTS
CLEAR 2 ZONES

Legend:
☐ NUTS 0
☐ NUTS 1
☒ NUTS 2
☐ NUTS 3
☐ LAU 2
☐ Hectare

☐ OSM
☒ Satellite

INDICATORS

INFORMATION	VALUE
HEAT DENSITY TOTAL	
Heat demand total	25 901.54 GWh
Counted Cells	82 721 cells
Heat density min	0.28 MWh/ha
Heat density max	12 155.77 MWh/ha
Average heat density	1 440.81 MWh/ha
DISTRICT HEATING POTENTIAL	
Total heat demand in GWh within the selected zone	25 901.54 GWh
Total district heating potential in GWh within the selected zone	18 534.32 GWh
Potential share of district heating from total demand in selected zone	71.56 %

EXPORT