sEEnergies

sEEnergies – modelling approach linking different efficiency potentials

Quantification of synergies between Energy Efficiency first principle and renewable energy systems

TEP Energy

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Enefirst workshop

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Energy Efficiency First Principle

REGULATION (EU) 2018/1999

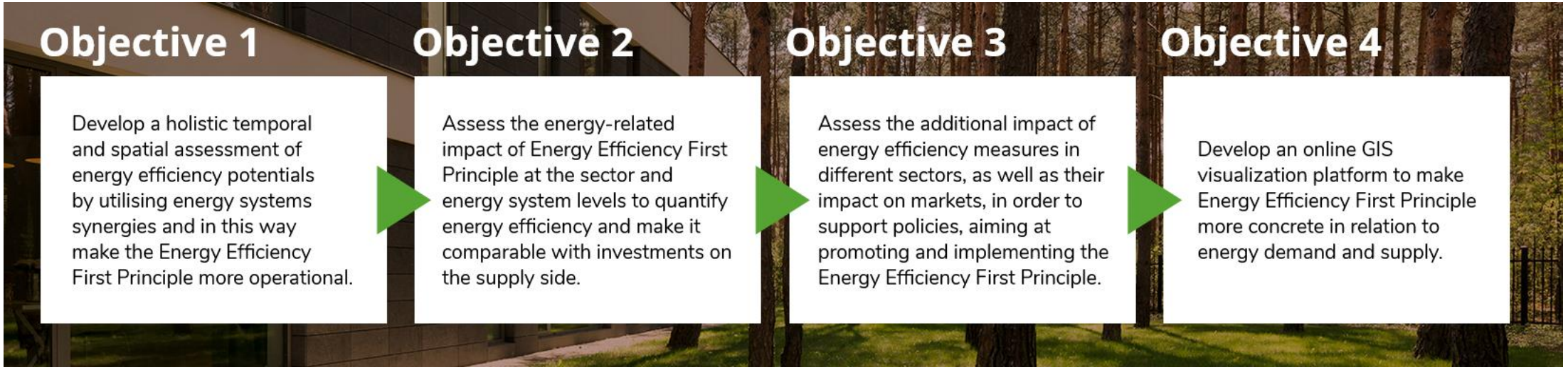
- **(64)** Member States should use the **energy efficiency first principle**, which means to consider, before taking energy planning, policy and investment decisions, whether cost-efficient, technically, economically and environmentally sound alternative energy efficiency measures could replace in whole or in part the envisaged planning, policy and investment measures, whilst still achieving the objectives of the respective decisions. This includes, in particular, the treatment of energy efficiency as a crucial element and a key consideration in future investment decisions on energy infrastructure in the Union. Such cost-efficient alternatives include measures to make energy demand and energy supply more efficient, in particular by means of cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy. Member States should also encourage the spread of that principle in regional and local government, as well as in the private sector.

Why sEEnergies - objectives

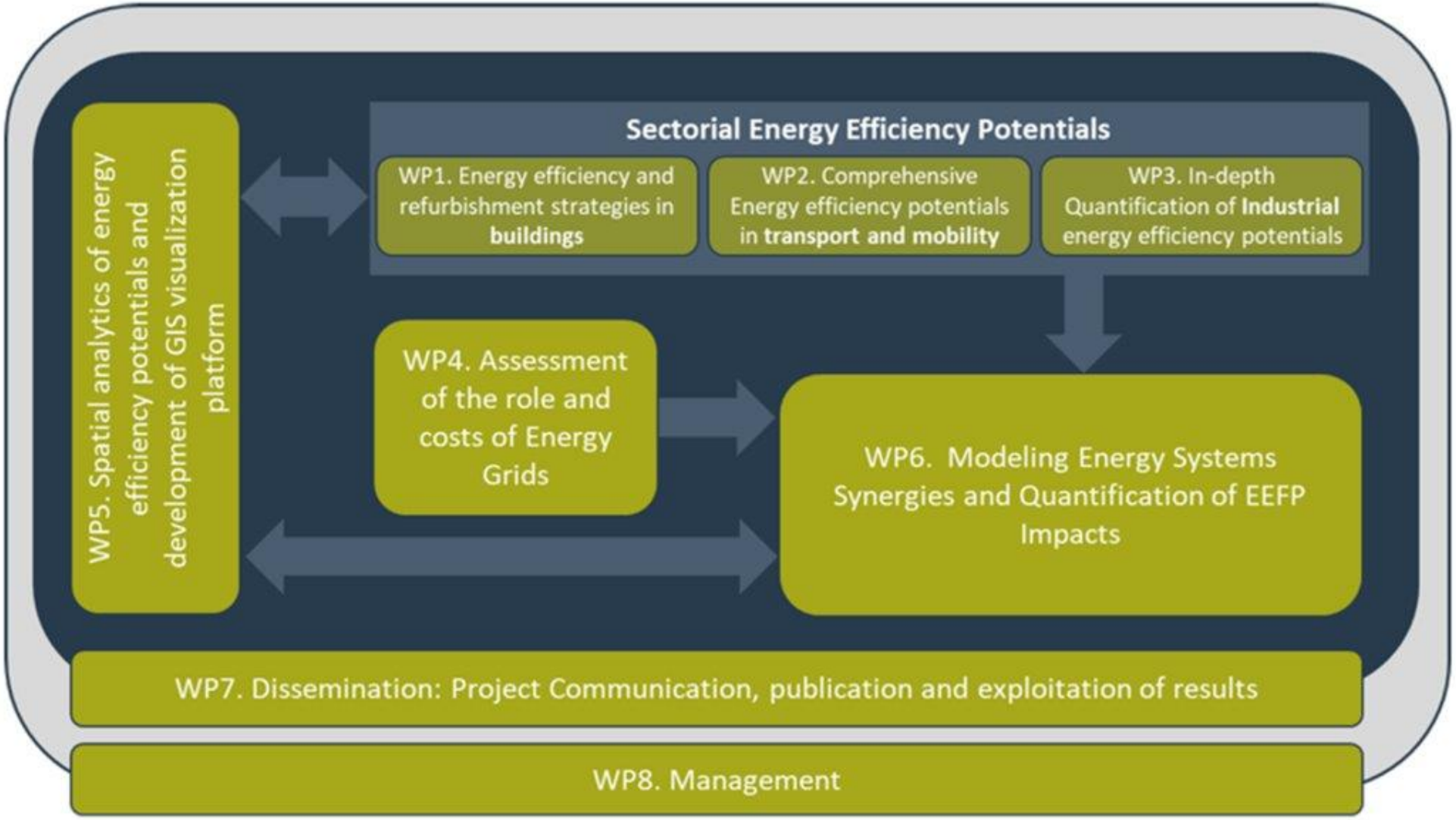
EASME – project consortium

- Clear need not only to define but also to operationalise the ENERGY EFFICIENCY PRINCIPLE both in qualitative and in quantitative terms – **sEEnergies pledges to combine and complement existing sector-dedicated models with temporal and spatial analyses** to develop a very analytical decision support tool.

- The bottom-up approach used in the sEEnergies project will have as starting point detailed analyses of EE matters in each sector. As a consequence, besides providing a general overview of the EE potentials from an energy systems perspective, sEEnergies will also provide advances on the state-of-the-art of the understanding of EEFP consequences for each sector. This will enable policy makers and other target groups to easily find the results concerning the sector they are more interested on.



Overview of project setup and model approach



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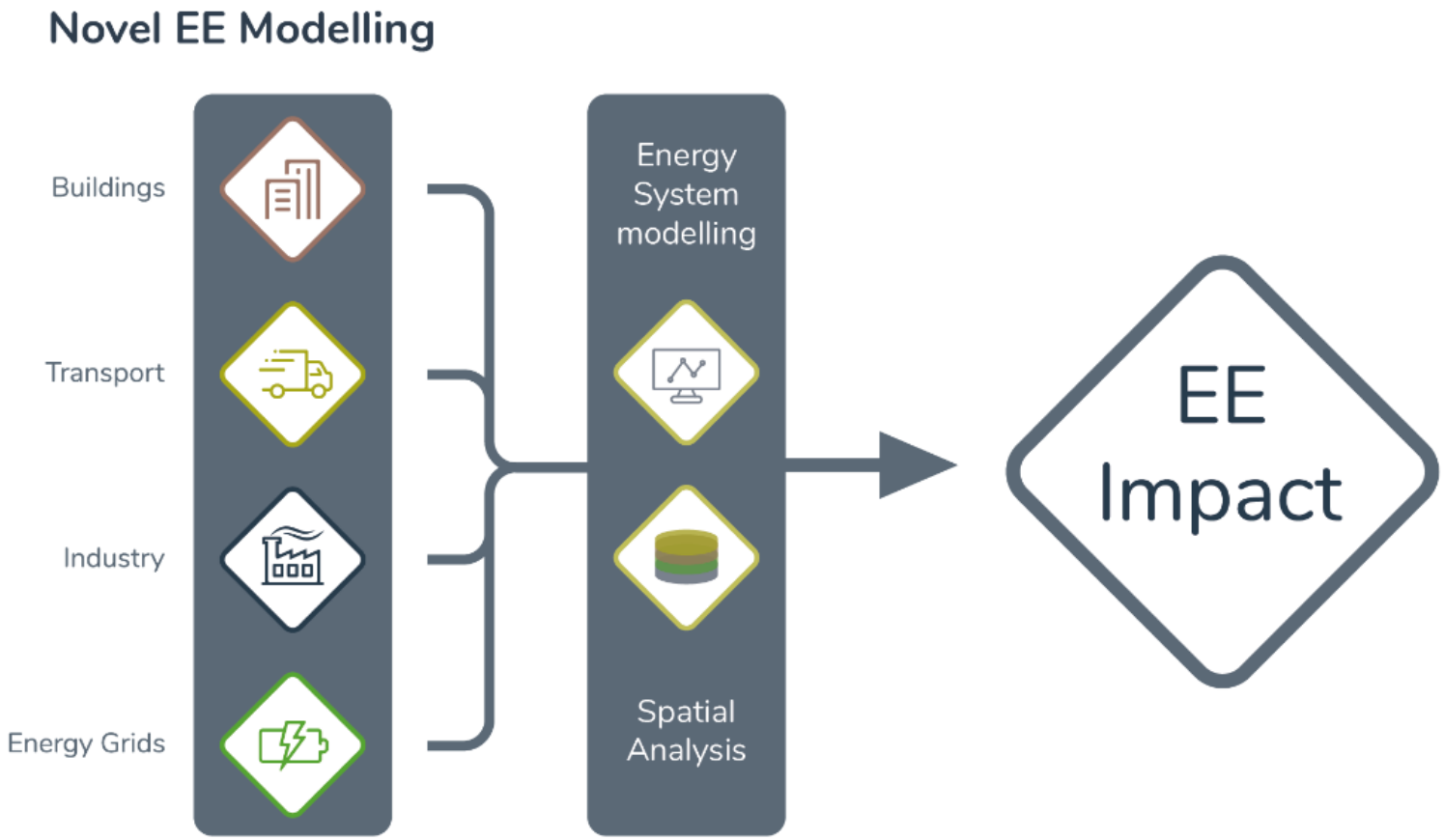


Energy efficiency potentials (WP1 – WP4)

TEP Energy, NMBU, KU Leuven, AAU and UU

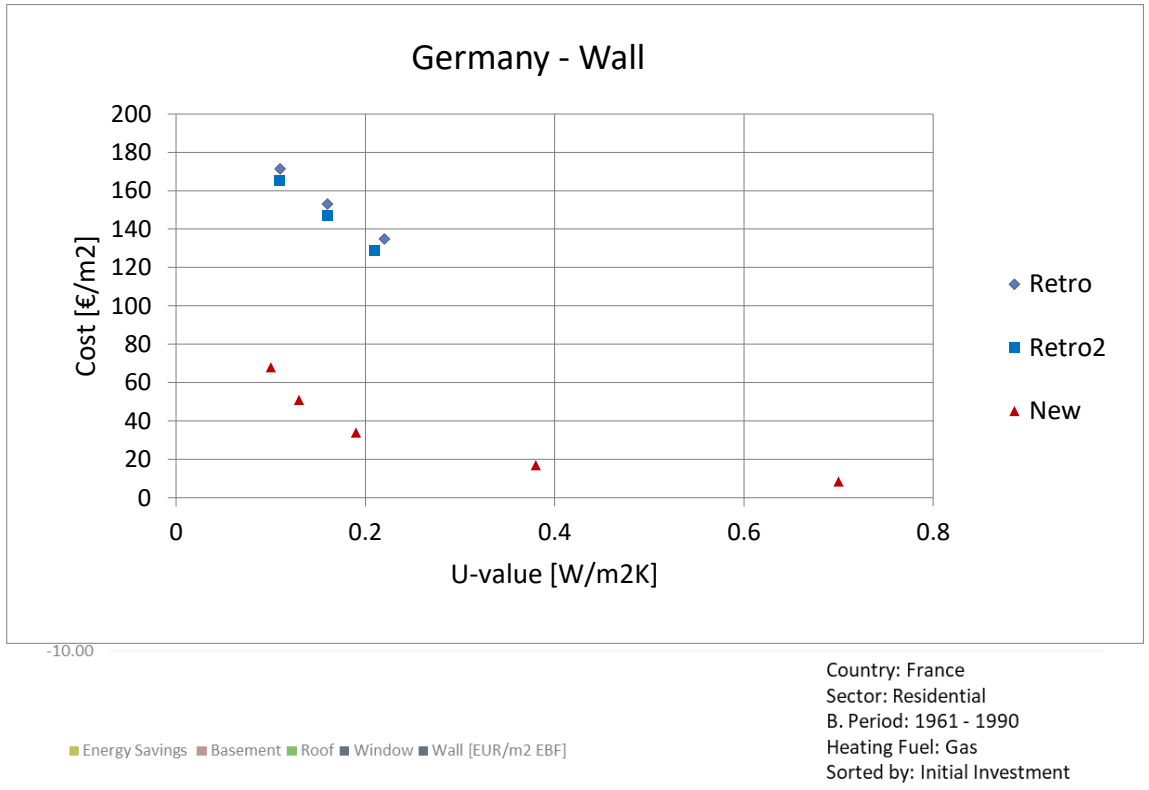
Bottom-up demand models

- Buildings (WP1)
- Transport (WP2)
- Industry (WP3)
- Grids (WP4)

- Detail rich, energy demand simulation models
- Focus on efficiency measures, potentials and costs
- Integrating user behaviour and decisions (e.g. preferences for heating systems, elasticities of transport modes, etc.)

-> Ouptut

- Cost curves for various efficiency measures (aggregated as well as on individual level)
- Efficiency potentials for different sectors
  - strategies for more efficient vehicles, modal shift, and transport demand measures
  - Use of state-of-the-art mobility and technology knowledge combined with GIS spatial analyses
  - Development of scenarios for the development in mobility and transport
  - EE potentials in the building envelope and electricity savings
  - Comprehensive analyses of the use of excess heat from industry and low temperature district heating
  - Development of scenarios for industry where each sub-sector can be analysed in depth considering EE potentials and potential structural industrial changes

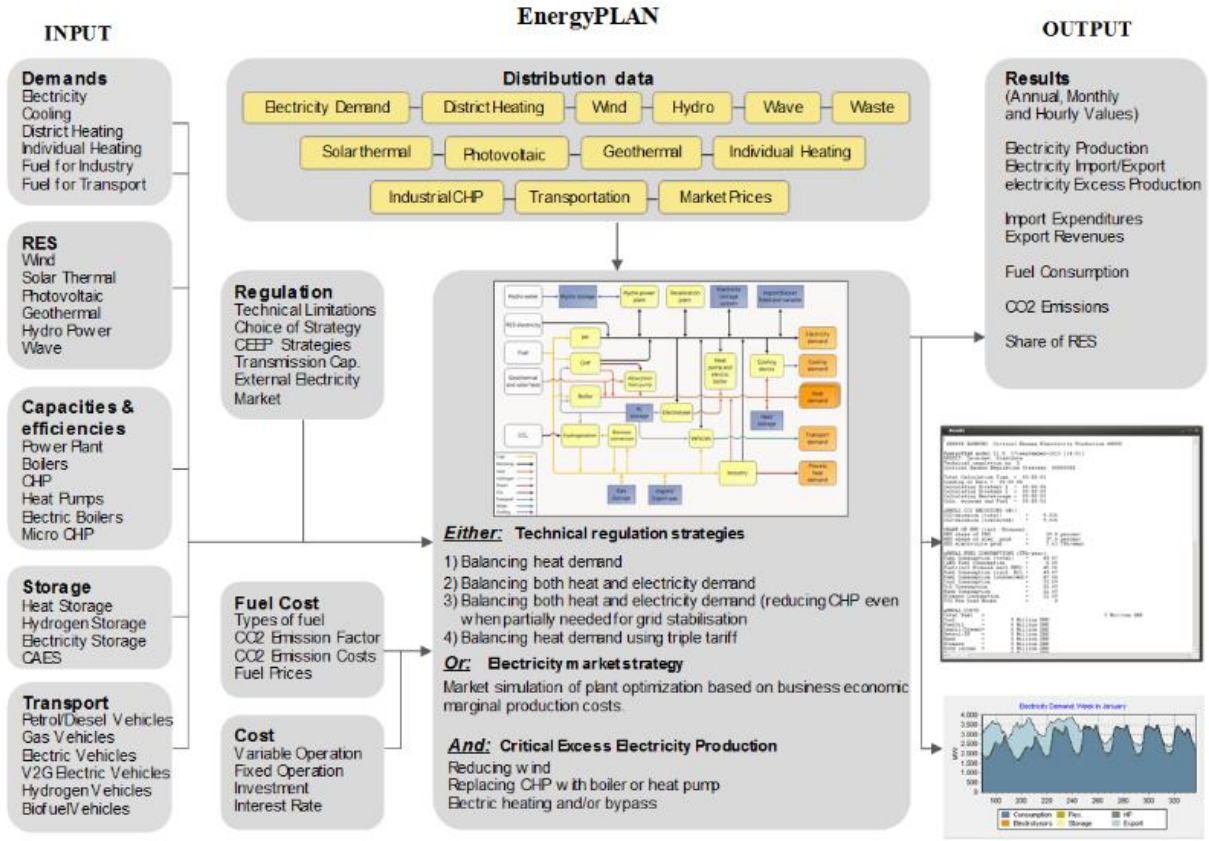


Energy system modelling (WP6)

AAU, all modelling groups

Modelling Energy Systems Synergies and Quantification of EEFP Impact (WP6)

- Model and **assess all relevant aspects linked to the EEFP** impacts
- Enable the creation and assessment of different scenarios, representing energy systems synergies with different levels of EE
- Develop an **investment strategy roadmap** based on the evaluation of the most critical EE improvements
- Build up sound scientific based knowledge to **support policy making**
- Investigate if the proposed EE measures fit the existing and planned policies, and where needed, suggest new policies instead

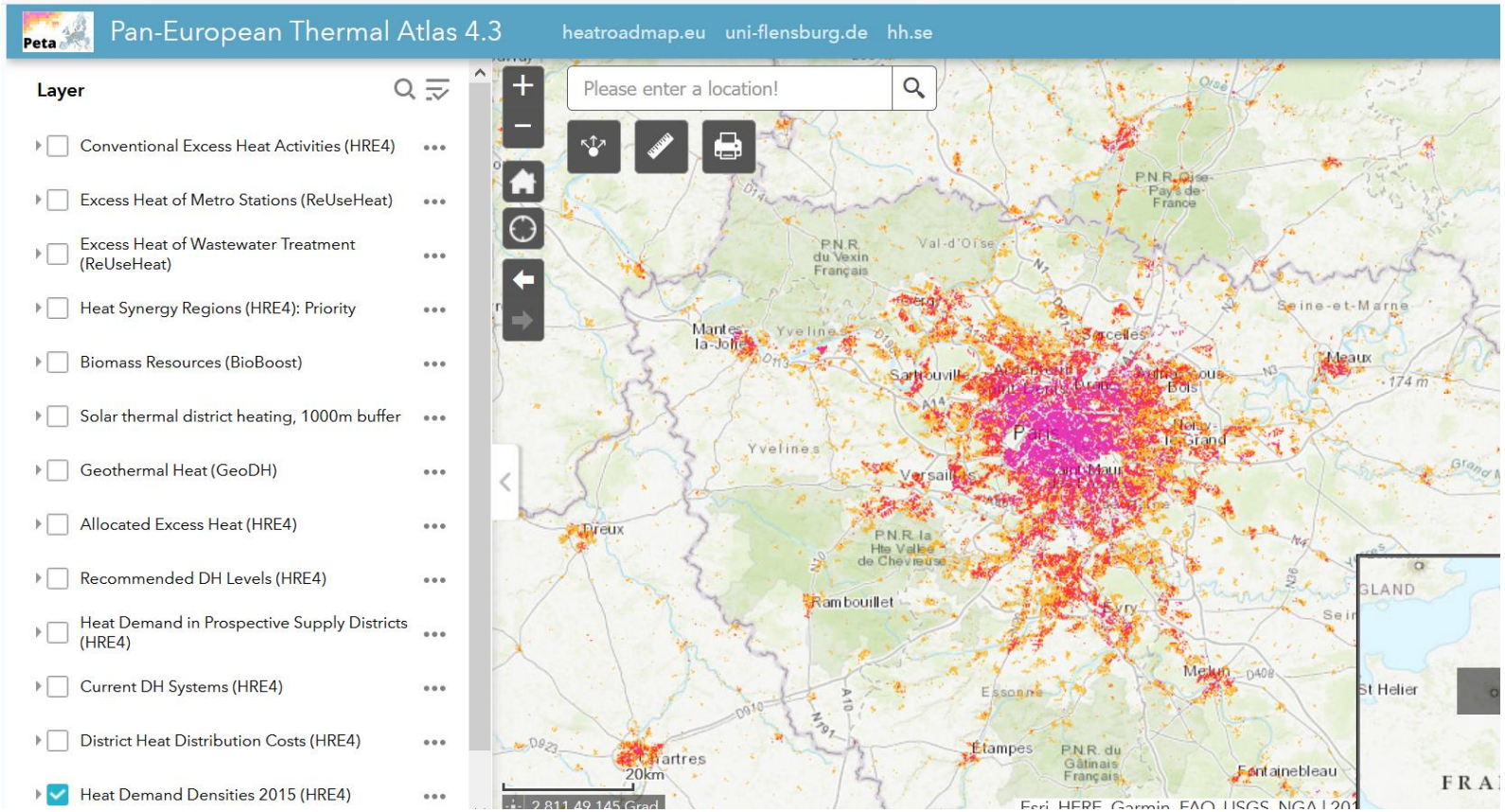


Spatial analysis (WP5)

Halmstad and Flensburg Universities

Spatial model (WP5)

- Spatial distribution of supply and demand, incl. efficiency potentials
  - Uptake of energy demand data and efficiency potentials
  - Spatial disaggregation from country level to hectares



Open tasks

All WP's

Demand side

- Definition of scenarios in relation to Primes
- Finalizing set of efficiency measures
- Calculate aggregated cost curves

Supply side

- Definition of scenarios in relation to Primes
- Analysis of efficiency vs. supply

Spatial analysis

- Integration of new demand and supply data
- Spatial distribution update

Discussion


THANK
YOU
GRAZIE
MULTUMESC
MERCI
MAAKE
ASANTE
KIITOS
VINAKA
WELALIN
MATONDO
SPASIBO
ARIGATO
OBRIGADO
DANK JE
TERMA KASIH
RAIBH MAITH AGAT
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