efeu

Efficient Energy Use

Regional level approach for increasing energy efficiency

Novel approaches are needed to solve future environmental challenges. The proposed regional energy efficiency approach, combining the regional targets and available technologies/solutions, offers opportunities for novel sustainable business models supporting the regional development.

Regional Energy Efficiency Approach

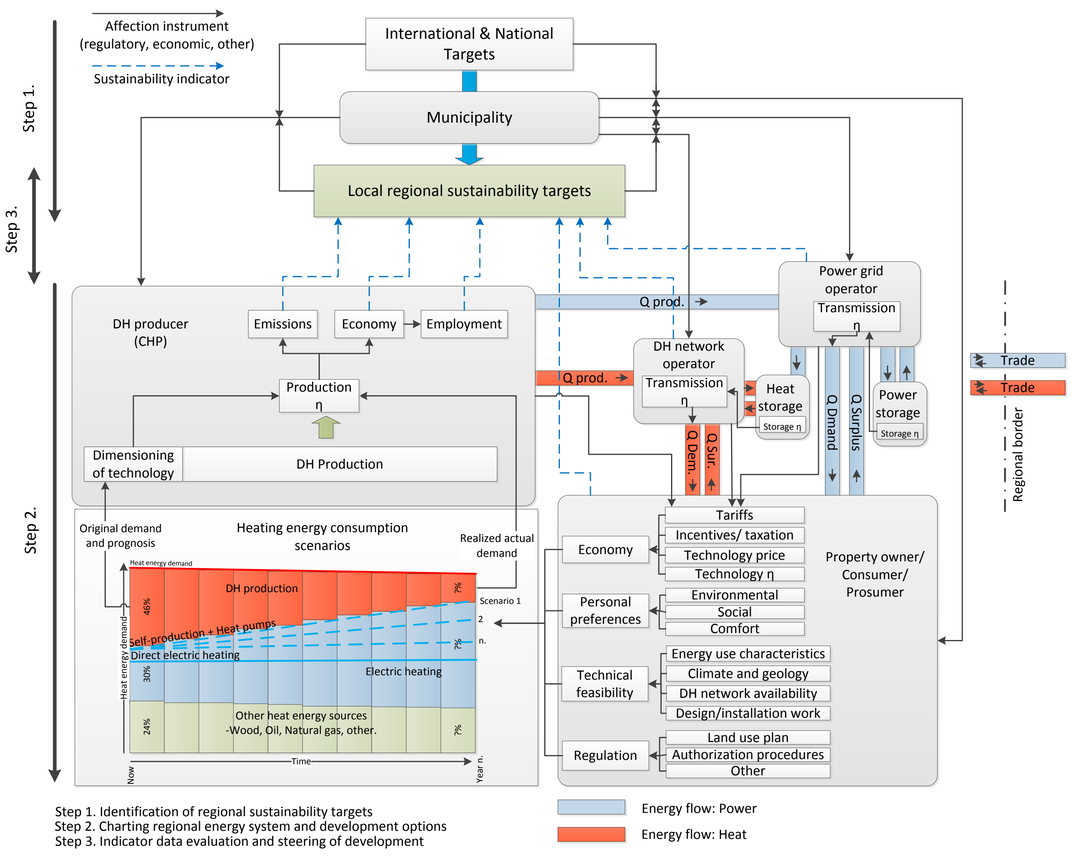
Decision making concerning development of a regional energy system is challenging. The result should meet several different (sometimes opposite to each other) requirements, such as:

- Affordable costs,
- Low environmental impacts,
- High level of renewable energy sources, and
- Other regional aspects, such as employment.

There is a strong demand for improved collaboration between the main actors/players in the region.

One of the aims in Task 3.3 was to introduce an approach for regional decision makers, to support the local energy planning and management. The approach can be seen as a solid framework for gathering the required data for energy efficiency analysis and also evaluating the energy system development, planned improvement actions, and the required energy services at the region. The approach (Fig. 1) includes:

- Regional balance model(s), including significant energy and mass flows; producing indicator values for decision makers.
- Discussion among major energy producers and consumers, in order to chart the possibilities for collaboration, benefitting all parties.
- Novel service business models to support regional energy efficiency development, for public and private sectors.



Step 1. Identification of regional sustainability targets
Step 2. Charting regional energy system and development options
Step 3. Indicator data evaluation and steering of development

Fig. 1. Regional Energy Efficiency Framework.

Services for improving regional energy efficiency

Energy efficiency related commercial service models are needed to support the regional development. These services can include different surveys, feasibility studies, construction projects etc. There is an increasing market for such services in both private and public sectors, as the requirements for energy efficiency and use of renewables are increasing.

As a good example of possible energy efficiency services, the six-stage energy and eco-efficiency services portfolio by Fortum Power Solutions, developed during EFEU program, is presented in Fig. 2.

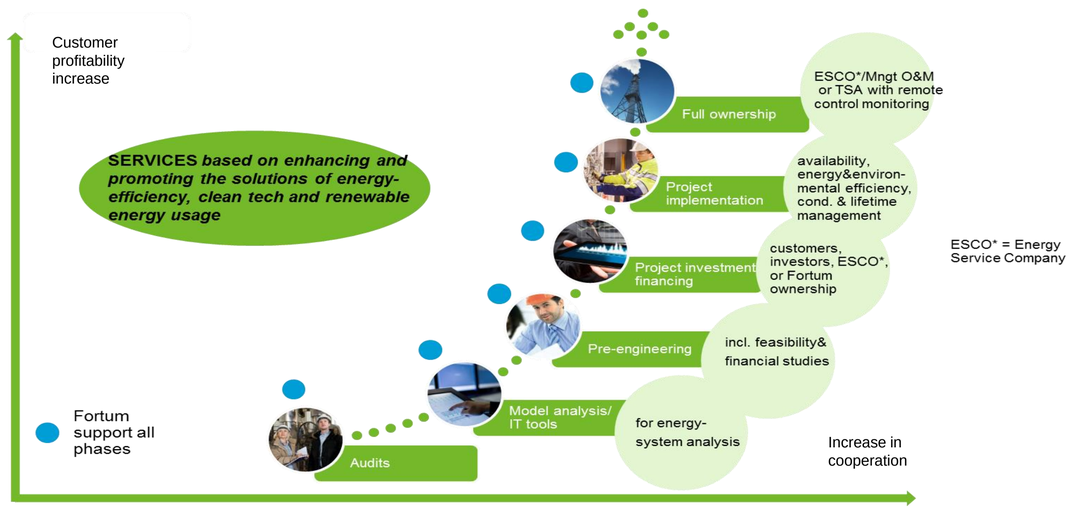


Fig. 2. Example of regional energy efficiency related services for public and private sectors.

Future steps – Beyond EFEU

After EFEU, development of the regional approach will continue in future research efforts, in collaboration with research institutes, as well as with regional and commercial operators. Further efforts are needed in different levels:

- Improved models for different regional layers:
  - Design layer (region balance models),
  - Operation layer (process balance models), and
  - Service layer (business models).
- Improved and continuous collaboration environment inside regions:
  - Workshops among the regional stakeholders.

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