enefirst.

16.00 – 16.10

Take away's from the ENEFIRST partners

Tim Mandel
(Fraunhofer ISI)

Dr. Zsuzsanna Pato
(RAP)

Dr. Lukas Kranzl
(TU Wien)

Mariangiola Fabbri
(BPIE)

Eftim Popovski
(IREES)

Benigna Boza-Kiss
(CEU)

Dr. Jean-Sébastien Broc
(IEECP)

- **Energy systems modelling is key for policymakers and private actors to make informed decisions in the scope of EE1st.** Meanwhile, there is no time to wait for an all-encompassing model that properly factors in all relevant costs and benefits and thus provides ultimate evidence.

- **Making EE1st a reality requires a broad policy response that goes beyond the classic portfolio of energy efficiency policy.** To do so, the debate around EE1st should embrace policies that are often seen as “supply side”. This includes market design, network company regulation, carbon pricing, and others.

- **Short-term, myopic economic considerations are no good advisor for taking long-term strategic decisions.** Still, economic considerations and assessments are mentioned explicitly in the EPBD (cost-optimality calculations), the EED (comprehensive assessment of efficient heating and cooling) and also regarding the EE1st principle.
- Thus, following aspects (would) need to be considered: (1) **uncertainties** regarding key input parameters, in particular energy prices need to be considered. (2) **Multiple impacts** of energy efficiency. However, regarding both aspects, there are key limitations for explicit consideration in cost-benefit analyses.
- Thus, the process should be more driven by **long-term targets** and the objective to **build a resilient overall energy system**.

Eftim Popovski
(IREES)

Trade-offs between district heating and deep retrofits of buildings

- The improved **building efficiency** affects the boundaries of the **economic viability of the DH** networks in several ways (higher relative distribution costs, lower installed capacities, higher heat generation efficiencies)

- One of the major **strengths** of the **district heating** networks is the ability to combine many heat sources (fossil/ synthetic fuels and renewable heat) and balance the impact of high fuel prices

- Investment in buildings' envelope **energy efficiency measures** and connecting **more buildings to district heating** networks could act as a **safeguard** against high future prices and reduce the risk of **energy poverty**

- **Municipal heat planning** as a strategic approach can ensure a climate-neutral and affordable heat supply by **properly implementing** and monitoring the **efficiency first principle**

Eftim Popovski
(IREES)

Trade-offs between heat pumps and deep retrofits of buildings

- Depending on the building type, envelop, and geographical location between **18%** and **35%** of the **heat pump consumption** can provide **flexibility** to the **power** system

- Flexibility potential in the EU-27 in 2050 estimated to be between **26.9 TWh** and **32.01 TWh** of the **electricity consumption** providing **8.4 GW** to **10.03 GW** flexible **power capacity**

- **Some estimated cost saving** potential from **flexibility** in **residential heat pumps** is expected, although strongly depends on **fees, taxes**, and other additional investments in **local smart grid substations**

- Replacing **condensing natural gas boilers** with **air-water heat pumps** brings substantial **CO2 emissions savings** in most of the member states (CO2-intensity of electricity consumption in 2019)

The use of demand-side resources:

- **is commonsense but not going to happen automatically**

→ Need for carrots and sticks

- **essential to keep the cost and the social acceptability of the energy transitions**

→ Consumers are both the goals and the means

- **designing and mandating a CBA capturing a wide coverage of benefits is essential**

→ never be perfect but there is room for improvement

- **EE1st works if systemic approach is adopted: integrated planning and investment decisions** where supply-side and demand-side resources are considered jointly
- **EE1st is about addressing the complexity** of the building & energy systems not looking for 'one fits all' solutions
- **EE1st is a starting point to better manage available resources:** towards sufficiency first?
- **EE1st integrated in legislation & market practices will support optimal use of (scarce) material resources** (decrease waste and energy losses, better use of construction and renovation materials, land, urban space, etc...)

- **Energy demand solutions are / have been part of an energy system**

Even if not explicitly considered, all decisions have an impact on energy demand.

- **EE1st measures are rare, but systemic thinking has a bidirectional impact**

Mainstreaming EE1st decisions improves overall decision making (e.g. leading to more integrated and overall cheaper solutions, better cooperation), while more collaborative decision-making leads to more energy demand becoming part of the portfolio and more co-benefits being acknowledged.

- **EE1st cannot be mandated and one-sized**

Countries need to adjust the methods and requirements to their local specificities (in several areas, such as building sector and climate, governance systems, policy targets, etc.).

- **Key challenge: closing the gap between the individual and collective perspective**

→ The sum of decisions driven by individual investors' views will not deliver what is needed to face global challenges

- **EE1st can be about reversing the burden of proof**

→ Supply-side options should demonstrate they are more cost-effective / less impacting than demand-side options

- **The starting point should be "what is really needed"**

→ beyond EE1st, Sufficiency First