Putting Energy Efficiency First into practice | Insights from ENEFIRST

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Concerted Action EED
Working Group 2.1 | EE1st
and EED in practice

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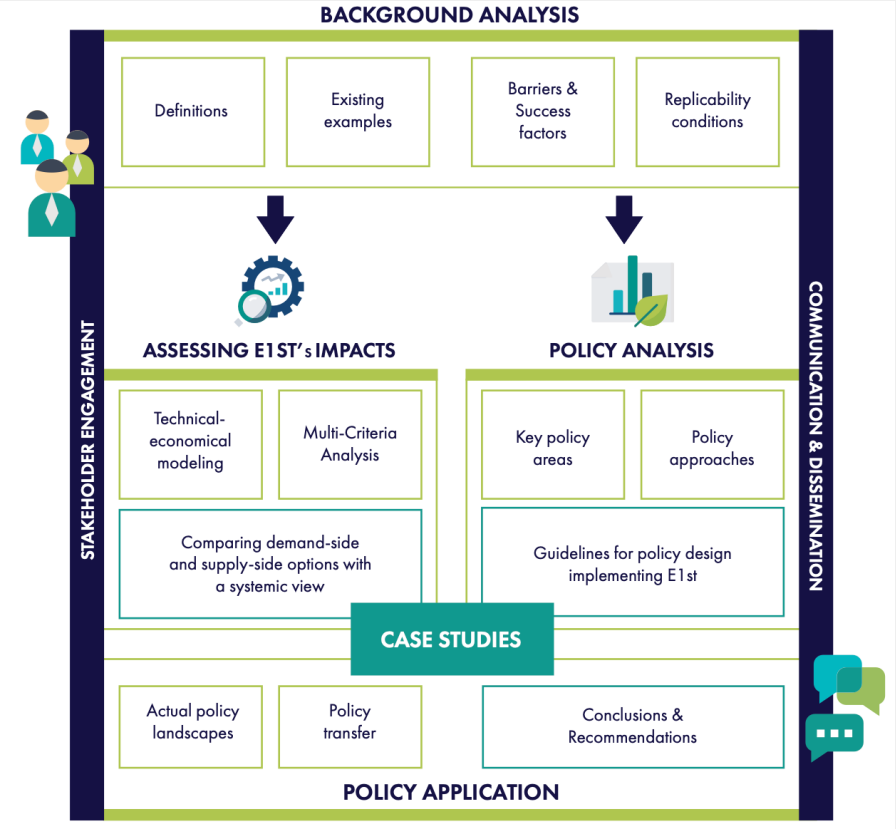


The Horizon 2020 project ENEFIRST contributed to provide policy makers, stakeholders, researchers and analysts with resources to make the EE1st principle operational. It was focused on buildings and their energy supply (especially the power sector and district heating). The project combined policy analysis and quantitative assessments about the implementation of EE1st with a process of continuous exchange with stakeholders.

Team:

IEECP

Fraunhofer ISI

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

IREES research for future.

CEU CENTRAL EUROPEAN UNIVERSITY

RAP®

BPIE BUILDINGS PERFORMANCE INSTITUTE EUROPE

Definition of EE1st

Governance Regulation 2018/1999 **(Article 2(18))**

energy efficiency first means taking utmost account in energy planning, and in policy and investment decisions, of alternative cost-efficient energy efficiency 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, whilst still achieving the objectives of those decisions.

In other words: **ensuring a level-playing field** between **supply-side** and **demand-side** options in decisions impacting energy use

However, the EE1st principle may look easier said than done (?)

Where to start? – Point 1: EE1st is about changing the mindset

EE1st is **not a new area** of policy intervention:
it is an **overarching principle for decision processes to comply with**.
Implementing EE1st is also about **promoting more integrated approaches**.

Map gaps and areas of intervention: what are the most crucial decision processes related to energy?

Collaborative decision-making

Can the processes related to energy supply and energy demand be better integrated?

Considering the multiple impacts of energy transition policies → increased legitimacy

See the infographic on integrated approaches

Where to start? Point 2 – Is the energy planning in line with EE1st?

Ensuring that the overall national energy planning clearly acknowledges the **interactions between supply and demand**, fairly considering the **potential on the demand-side** with a **long-term perspective**

Starting point = defining the levels of energy service demand → then considering the various options to meet this demand (including demand-side options)

Breaking the silos:
Cross-cutting working group?
Coordination between the various units and departments involved?

Integrating energy planning = combining a series of models

Development of facilities for joint data management and processing

See guidelines on integrated approaches (part 1 on integrated energy planning)

Where to start? Point 3 – What are the key planning processes?

Increase in the share of RES = opportunity for more integration in energy planning, policies and investment decisions

It requires major changes in the way to plan and operate the energy systems, and very large investments → these decision processes clearly fall in the scope of EE1st

Heating and cooling plans

Major role of energy regulators and network operators

NECP process

Aligning national, regional and municipal energy planning

NECPlatform

(BG, HR, FR, IT, RO & PT)

See guidelines on integrated approaches (examples in section 1.2 and 1.3)

Where to start? Point 4 – Screening existing policies

EE1st is not necessarily about adopting new policies. This is firstly about **ensuring that the existing policies and regulations are in line with the EE1st principle**

Any **bias favouring supply-side options** in incentive schemes?

Are policies for the supply-side **coherent** with the ones for the demand-side?

Will the outputs of the current policies be in line with the long term goals: no risk of **stranded assets** or **lock-in effects**?

Any policy that would favour **inefficient uses of energy** (e.g. subsidised energy prices, unfair taxation)?

See priority policy areas to implement EE1st (screening of EU policies ; focus on building-relevant policies)

Where to start? Point 5 – Broaden the practices of cost-benefit analysis

EE1st implies a **fair comparison** that is not limited to direct financial costs and benefits, but also factors in socio-environmental effects in the form of various **multiple impacts**

Use of **quantitative assessments** whenever possible, to inform the decision process

Consider the **uncertainties** from key input parameters, in particular energy prices!!

Broaden the scope to avoid short-sighted picture

Prioritising the **assessments** and **analyses**

Info Session INFO2.5 (tomorrow | 9.00-10.30) Horizon 2020. Beyond saving CO2 and energy costs – what is in it for society? The multiple impacts of energy efficiency and their role for consumers.

MICAT
Multiple Impacts Calculation Tool

See ENEFIRST example of whole energy system cost assessment + the report on EE1st & multiple impacts

Where to start? Point 6 – Reverse the burden of proof

When already proved beneficial to the society, energy efficiency investments should then be the default (**no-regret**) option for investment decisions and be prioritised by public policies

Reducing the possible **viewpoint gap** between the individual investors' and the society's perspectives

Requiring supply-side investments to demonstrate they are most beneficial to the society

Check-list for implementing EE1st

1) Are demand-side resources **considered** in the decision process?
(*especially when planning / deciding investments in energy infrastructure*)

2) Are demand-side resources **assessed and valued** on a fair basis compared to supply-side investments (or other investment types)?

3) What is the ultimate decision-making rule once the assessment is done? Is a **priority** given to demand-side resources **when relevant**?

   Or is an **incentive** in place when the demand-side options are **more beneficial from a society's perspective**?

4) Are today's decisions in line with long term goals? (= **avoiding lock-ins**)

See 'real-life' examples on the website

Step 1: ensuring demand-side resources are considered whenever relevant

Are the **data** on potentials for energy efficiency and demand-response regularly **updated**?

Are TSOs and DSOs required to consider whether there can be **alternatives to grid investments**?

Does the process for national energy planning include at least 1 scenario with **high energy efficiency ambition**?

Is it easy for investors / consumers to **find information about what options would be possible** for them?

Can **providers of demand-side resources compete** on energy markets?

Step 1 / Examples

The ENEFIRST scenarios were built to compare different level of EE ambition in buildings

Enabling rules for Demand Response (DR) aggregators (DE)

Transmission and distribution utility provisions

Catalogue of EE actions in the EEOS

Power market rules / see the example of the NEBEF (Block Exchange Notification of Demand Response) mechanism that opens the participation of demand response in wholesale electricity markets in France

Step 2: Are demand-side resources assessed and valued on a fair basis compared to supply-side investments (or other investment types)?

Are there **guidelines** to enlarge the scope of Cost-Benefit Analysis?

When relevant, is there a **consultation process** allowing stakeholders to provide complementary data / make comments?

Are there indicative values or **simplified calculation tools** to easily get first estimates about multiple impacts?

Do the information provided to investors / consumers include **information beyond energy costs**?

Do the information provided to investors / consumers **favour lifecycle cost analysis**?

Step 2 / Examples

ConEd's BCA (Benefit-Cost Analysis) Handbook

Deferring T&D (Transmission & Distribution) infrastructure investments through local end-use efficiency measures (US)

Planning instruments for building renovation investments (example: Woningpas in Flanders)

Water heaters as multiple grid resources (Hawai)

Integrated district heating planning and operation

MICATool
EERAdata tool

Step 3: What is the ultimate decision-making rule once the assessment is done?

Any **bias favouring supply-side** investments in the decision making?

Do public or regulated decisions **prioritize demand-side options** when relevant?

Are incentives designed in line with the **society's perspective**?

Can the energy regulator **refuse** a TSO or DSO's investment plan if not justified in line with the EE1st principle?

Step 3 / Examples

Fabric First approach
(see SEAI's scheme and presentation at CA EED in October 2020)

Transmission and distribution incentives
(example: decoupling utility sales and revenues in the US)

Financial incentives for renewable energy systems linked to energy performance (see example about heat pumps in Ireland)

Social Constraint Management Zones to harvest demand flexibility (UK)

Passive-level building code
(Brussels' region)

Step 4: Are today's decisions in line with long term goals?

Are short-term measures to **reduce imports of Russian fossil fuels** compatible with achieving carbon neutrality by 2050?

What measures help a structural reduction of **energy poverty**?

How are possible **lock-in effects** considered in the design of the national long-term renovation strategy?

How are the **risks of stranded assets** considered in the national energy planning?

Step 4 / Examples

Replacing a polluting power plant with behind-the-meter resources (California)

Updating distribution system planning rules in Colorado and Nevada

New LNG terminals?

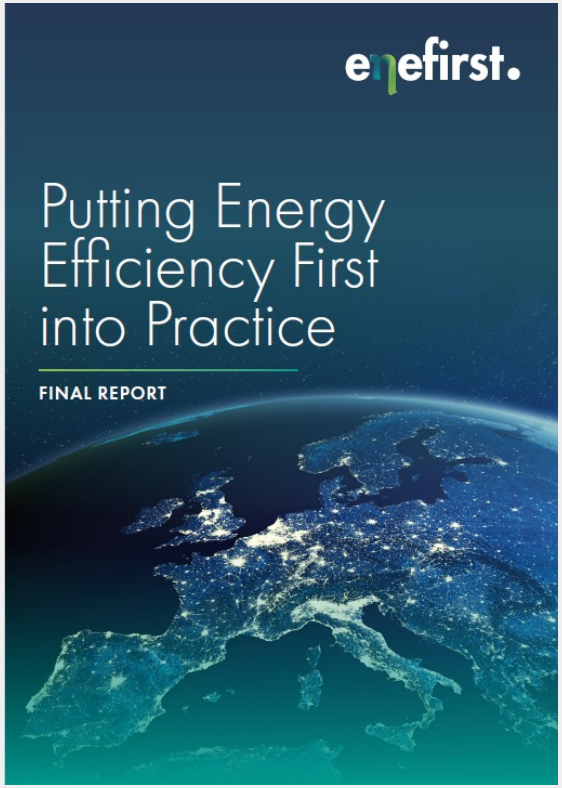
New extensions of the gas grid?

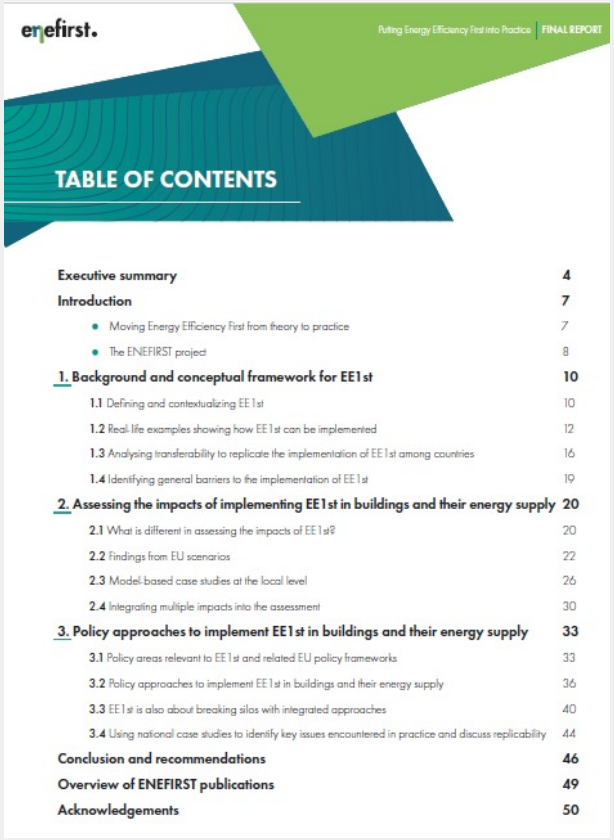
Nord Stream 2?

Trade-off at building level:

- Prioritizing quick roll-out of solar PV or massive insulation of roofs?
- Prioritizing quick roll-out of heat pumps or first making buildings heat-pump-ready?

ENEFIRST final report = entry point to all the resources





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Main ENEFIRST resources at a glance:

Real life examples

Implementation maps
(examples of policy approaches to implement EE1st)

ENEFIRST scenarios for EE1st in buildings with a Scenario Explorer

Guidelines for integrated approaches

Detailed analysis about implementing EE1st in three countries (Germany, Hungary and Spain)

ENEFIRST recommendations

+ special issue on EE1st in the Energy Efficiency journal
(most papers are available in open access)

Website:
https://enefirst.eu/

Thank you

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