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How to operationalise Energy Efficiency First (EE1st) in the EU?

Key recommendations to Member States

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1 INTRODUCTION

The recast of the Energy Efficiency Directive proposed by the European Commission as part of the Fit-for-55 package (July 2021) states, in its new Article 3, that the Energy Efficiency First (EE1st) principle should apply to planning, policy and major investment decisions related to energy systems as well as non-energy sectors, where those sectors have an impact on energy consumption and energy efficiency.

Planning practices, policies and investment frameworks shall consider energy systems as a whole, with resources available on both sides (supply and demand), and interactions between demand and supply. This means that policies and regulatory frameworks dealing with energy supply and infrastructures should consider demand-side options as alternatives to increasing supply, thereby valuing the contributions of energy savings and flexibility to energy systems and, where possible, other objectives (e.g. the reduction of greenhouse gas (GHG) emissions, improved health). On the other side, policies and regulatory frameworks dealing with energy end-use efficiency should consider their impact beyond the demand side, as they can also have an impact on supply (e.g. on the investments needed to deliver a specific level of energy services).

The Energy Union put EE1st at the core of the energy transition and has enshrined it in various pieces of legislation. The Governance Regulation of the Energy Union ((EU) 2018/1999) has defined EE1st (see Article 2 (18)) and made EE1st a guiding principle for energy policies: the regulation set requirements to ensure that national energy efficiency targets are defined as part of the overall planning exercise reported by Member States in their National Energy and Climate Plans (NECPs)[1].

However, the NECPs (submitted in 2019-2020) provided limited information on how the Member States define and plan to implement the principle[2]. The reported information was limited to:

- referring to EE1st as a principle that has been considered in the preparation of the NECP
- stressing the importance of energy efficiency policies and measures as "being the first pillar of the energy transition" or as the "key horizontal policy"
- referring to demand-side participation in energy markets
- a few countries linking energy efficiency with investment decisions or other decarbonisation measures in general (Cyprus, Ireland, Malta and Portugal)

Implementing the EE1st principle has proved to be a difficult task for Member States, at least partly because EE1st is still a relatively new concept. This report provides a set of recommendations for Member States (MS) to support the implementation of EE1st in their policies. The analysis builds on previous work done in the ENEFIRST project, where policy approaches for each main policy area (buildings, the power sector, district heating) were analysed in detail (ENEFIRST, 2021a and 2021b), providing the basis for guidelines for integrated approaches (ENEFIRST, 2021c). It takes the lessons learnt from the analysis of

[1] Provisions implementing EE1st have also been included in various energy-related legislations since then, such as the Electricity Directive and Electricity Regulation. However, these provisions are not currently consistently implemented by Member States. Several provisions for implementation are integrated in the proposals of the fit-for-55 package (see more details about these proposals in (ENEFIRST 2021c)).

[2] "*they set out limited details on the application of this principle* [EE1st principle]", highlighting that "*co-benefits and possible trade-offs between energy efficiency measures and climate adaptation remain unrecognised and untapped*" (European Commission, 2020).

three countries (Germany, Hungary and Spain) and translates them into recommendations that are applicable to all MS.

1.1 What is EE1st?

EE1st is a **decision principle** to **prioritise investments in energy efficiency and demand-side resources** whenever these options are more cost-effective than investments in elements of the energy supply chain from a **societal perspective** in meeting given policy objectives.

In practice, implementing EE1st means:

1) To **systematically consider energy efficiency and other demand-side resources** among the possible options when comparing, planning or deciding investments
2) To ensure that energy efficiency and demand-side resources are **assessed and valued on a fair basis** compared to supply-side investments (or other investment types)
3) To **prioritize** the choice of energy efficiency and demand-side resources when relevant, based on the assessment carried out in the previous steps

At EU level, EE1st is defined in general terms, and practical details are developing. Member States need clear **guidance on how to systematically implement EE1st in their policies** and ensure that:

- opportunities to value the options most beneficial to the society are not missed
- there are no lock-ins created for investors and citizens
- that today's decisions will not undermine the achievement of long-term climate goals

More resources are now available to Member States, with dedicated recommendation and guidelines published by the European Commission in September 2021. Several European projects have also developed resources related to EE1st, including sEEnegies, ENEFIRST, ODYSSEE-MURE and EERAdata.

2 WHERE TO START?

Most of the policies introduced in the last ten years are not designed around the EE1st principle. In some cases, they 'accidentally fit' (like the energy performance requirements included in the KfW programmes in Germany), but not as a result of consistent thinking. Renovation programmes tend to include criteria or requirements that favour projects achieving higher energy performance and/or combining other objectives (e.g. housing rehabilitation, social and economic recovery[3]). However, the impacts that the design of these programmes can have on energy supply systems are rarely explicitly considered in their rationale. This can be partly explained because EE1st is still a recent concept and the guidelines prepared by the European Commission were only published in September 2021.

Moreover, the current energy crisis in Europe urges policy makers to pursue greater short-term impacts, to counter the energy crisis and reduce fossil fuels' imports from Russia and speed up the reduction in GHG emissions. This can favour action types that are easier to scale up quickly and immediately boost security of supply, such as replacing heating systems using fossil fuels with renewable based technologies. While the switch to RES heat is necessary, this creates a dilemma vis-à-vis the EE1st principle which requires a more holistic approach (e.g. the switch should be accompanied by the renovation of the building envelope and resizing of the heating system).

There are no EE1st policies per se: all policies can be adapted to reflect EE1st/designed to consider the EE1st principle/energy system as a whole. Making EE1st a reality indeed requires a **systemic approach** to policy making that goes beyond the classic portfolio of energy efficiency policy, with integrated planning and investment decisions, so that **supply-side and demand-side** resources are **considered jointly**. To do so, the debate around EE1st should embrace policies usually related to 'supply-side': these include market design, regulations and incentives for network operators, heat roadmaps, and others (ENEFIRST, 2021c). Reciprocally, classic end-use energy efficiency policies (e.g. renovation programmes, building codes) should be designed with their potential impacts on the supply of energy in mind. This way they can achieve larger impacts and financing can be decided in line with these benefits to society.

2.1 Key recommendations to operationalise EE1st

As shown by the analysis of Germany, Hungary and Spain[3], **introducing EE1st as an overarching principle is not sufficient** to secure its execution: its implementation needs to be carefully planned, and adjustments to decision-making, governance structures and investment frameworks need to be introduced **across all areas**, including building policies, the power sector, climate action, governance systems, policy targets, etc. Most often, implementing 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**.

Germany is a good example of this: despite a variety of strategic documents and processes that recognise EE1st as a core principle (i.e. the Energy Efficiency Strategy for Buildings prepared for the introduction of the energy efficiency first principle in the governance structure in Germany in 2015), the principle is not fully operationalised yet. While the role of energy efficiency is well acknowledged in the overall strategies, the policy discussions on decarbonisation tend to focus on or prioritise fuel switching. Most policies remain

[3] See (ENEFIRST 2022d) Fit for Energy Efficiency First (EE1st)? An in-depth analysis of how to implement the EE1st principle in Germany, Hungary, and Spain

developed with sectoral approaches, without considering the interactions in a whole system perspective. This reduces the scope of costs and benefits considered.

National and local specificities, including **complex governance structures** (like in Spain and Germany), must be taken into consideration to avoid unsuitable 'one-fits-all' approaches that will not grasp and address the complexity of a system originally designed to serve different needs and secure supply first. Whatever the governance structure in the country, a **clear definition of the main roles** according to jurisdiction levels seems essential to enable cooperation, and thereby integrated approaches.

While an initial effort is required to **map gaps and areas of intervention**, mainstreaming EE1st decisions could improve overall decision making (e.g. more integrated and cheaper solutions, better cooperation and higher levels of optimisations). More **collaborative decision-making** can also lead to better integration of demand-side management, the inclusion of its co-benefits into investment decisions and policy portfolios and to an **increased legitimacy** of the energy transition policies in the long term.

To facilitate the introduction and operationalisation of the EE1st in national policies, ENEFIRST advises MS and stakeholders involved in energy policies to consider the recommendations below.

2.2 Review whether current policies are in line with EE1st

The first step to secure a proper operationalisation of the EE1st principle is to review existing policies and assess if they are in line with the EE1st principle, or at least **do not inhibit the implementation of EE1st**. This inventory helps to identify policies designed with features that may create barriers to EE1st and possible inconsistencies, for example conflicting objectives (e.g. the short-term reduction in GHG emissions and the long-term goal of carbon neutrality; increase the rate of renovation projects vs. increase the depth of renovation).

The next step is then screening whether any policies would go against the EE1st principle. **Some existing incentives might indeed be opposed to or limit the implementation of EE1st**. For example, revenues received by municipalities when they award gas concessions in Germany, or energy prices strongly subsidised in Hungary for a large share of consumers.

A more general example is the case of planning and regulations for gas networks. The consequence of implementing EE1st should mean that public authorities should anticipate the need for decommissioning gas infrastructures, instead of investing in expanding existing ones (ENEFIRST 2022a)[4].

The analyses of Germany and Spain also showed the importance of the indicator(s) used to set the main energy requirements, either in building regulations or in the design of financial incentives. **Prioritising indicators set in primary energy or carbon contents might create a bias** favouring fuel switching over reducing the final energy demand. This can result in higher total energy system costs and higher challenges in achieving a 100% RES supply, as it would have to meet a higher demand.

[4] On this topic, see also: Anderson, M., Rosenow, J. Bürger, V., Braungardt, S. (2022). Fossil gas infrastructure first, energy efficiency never? Proceedings of the ECEEE 2022 Summer Study.

The main areas to be considered in this assessment are building policies, power markets/networks, gas markets/networks, district heating, energy efficiency, climate, and the use of EU funds. Some examples of questions that can guide the assessment include:

- Are there policies that would provide incentives to invest in energy infrastructures without considering possible downward evolutions in energy demand or increased flexibility?
- Are there policies that would lead demand-side options to be disregarded by stakeholders?
- Are there policies that would decrease the cost-effectiveness of energy efficiency investments or favour energy consumption (e.g. subsidised energy prices, unfair taxation)?
- Are there provisions in existing regulations or incentive schemes that would favour investments in energy supply options over demand-side options?

Policies beyond energy regulations are also relevant and need to be integrated into an EE1st approach. For example, tax relief and building renovation/construction grants in Hungary are considered economic and/or social policies. While families are eligible for public grants, energy requirements are not incorporated, and the impact on the energy supply system and thus the whole energy system is not factored in[5].

2.3 Ensure that demand-side resources and interactions between demand and supply are fairly considered in energy planning

A starting point is to ensure 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. This timeframe should be in line with **long-term decisions** about the major energy infrastructures. The main energy policies should then be examined to make sure they are in line with the pathway(s) defined from overall energy planning, looking at their possible impacts on both sides (supply and demand), and considering a broad range of costs and benefits.

The **National Energy and Climate Plans**, and their successive updates, can be an opportunity for this overall integrated energy planning, as it requires the Member States to provide a planning for 10-year periods for all sectors (supply and demand). The **coordination** between the various public departments (usually structured around the classical energy policy silos) and stakeholders can be challenging. The process should include **cross-cutting exchanges**, and enough time for **iterations**, so that every area can consider inputs from other areas.

Ideally, the process should **start by defining the levels of energy service demand** per end-use sector and then determine a portfolio of demand- and supply-side resources that best meets this demand. This should then be the common ground for policy design, as well as planning the needs in energy infrastructures. The National Regulatory Authority can have a major role in using general targets to define the framework that regulated entities and market actors should comply with.

In practice, this integrated energy planning can be a complex exercise that usually requires **detailed energy modelling**. This modelling should be integrated as well, which often means **combining a series of models** that can provide the details needed for each sector (about the supply and the demand). This can

[5] See (ENEFIRST 2022d) Fit for Energy Efficiency First (EE1st)? An in-depth analysis of how to implement the EE1st principle in Germany, Hungary, and Spain

make the various complexities and uncertainties of energy systems more tangible by providing a range of quantitative scenarios. These scenarios, in turn, can enable decision-makers to make informed decisions on policy design, technology investment and system operation[6].

2.4 Review the main planning processes to identify opportunities for integration

As seen in Germany, Hungary and Spain, the **increase in the share of RES** in the energy supply could represent an **opportunity for more integration** in energy planning, policies and investment decisions. It will require (or has already required) major changes in the way to plan and operate the energy systems, implying very large investments. A pitfall would be to continue the practices considering that security of supply means investments in energy infrastructures, only expanding their usual scope (generation, transmission and distribution) to include storage. The opportunity to implement EE1st is to **make demand-side resources recognised as part of the solution to secure that energy supply can meet a manageable** demand.

The development of pilot projects testing the potential for **demand-side flexibility**, as done in Germany and Spain, shows that such opportunities are currently explored. Going further from pilots to wide implementation will require revising the regulatory frameworks, cost allocations as well as the incentives to network and market operators. **Energy regulators** thus have a **major role**. This is also true in countries like Hungary where the development of RES is not yet integrated into an overall system perspective. The regulators can take advantage of the experience from the front-runners to set the right frameworks and conditions for demand-side flexibility to compete as an alternative to the increased use of or investments in flexible fossil generators, network or storage.

Pricing electricity use is also key in mobilising the flexibility of users. A challenge today is to balance the need for reducing the price risk for consumers and price energy based on system conditions. Spain has for example adopted a new grid tariff in June 2021 to reflect this. However, due to the energy crises occurring soon after this, the differences between the prices per time period were limited, thereby reducing the price signals.

Another opportunity for more integration can be found in the adaptation, the upgrade or development of **district heating and cooling:** a reduced and more flexible heat demand can **make it easier to increase their share of RES supply**, or to develop these networks directly with 100% RES supply (as promoted in Spain). This can overcome the initial barrier that a lower heat demand means less revenue for the district heating companies. Another approach is to compensate the lower heat demand from already connected buildings with the **extension of the network** to newly connected buildings (as done in Germany). 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.

Local front-runner projects can show the way forward, as in the city of Kecskemét in Hungary where a combined modernisation of the buildings and the district heating was possible thanks to close cooperation of the district heating company and the local government. This could happen while the existing national regulatory framework is mostly focused on short term price control, which usually leads to under-

[6] The approach of integrated energy modelling is briefly introduced in section 1.1 of (ENEFIRST, 2021c) and a detailed example of integrated energy modelling can be found in (ENEFIRST 2022b).

investment. This barrier could be overcome thanks to the use of EU funding. This example shows that municipal heat planning used as a strategic approach can ensure a climate-neutral and affordable heat supply by properly implementing the EE1st principle. This is easier when the regulatory responsibilities allow the municipality (or other public body) to ask the district heating company to be part of the coordinated planning.

The examples illustrate how important it is to **align national, regional and municipal energy planning**. **Consultation processes** increasingly offer opportunities for multi-level and multi-stakeholder coordination. However, this remains challenging in practice. For example, due to differences in the decision timelines (related to the various political mandates involved), in the priorities, or due to imbalances in power relations.

Similarly, the **coordination between different fields of intervention** (e.g. heat planning and building renovation programmes) at the same governance level can be challenging for similar reasons (differences in the timelines, imbalances in power relations) or for other reasons (e.g. difficulties or lack of communication between units working on different fields). The progressive harmonisation and integration of planning timelines (like with the NECP process at national level), the development of joint data management and processing facilities and the increasing necessity to consider the interactions between demand and supply when the share of RES increases can help to go forward on the way to multi-level and cross-cutting integrated planning[7].

2.5 Reverse the burden of proof where 'no-regret' opportunities are identified

Energy efficiency investments are most often 'no-regret' options from a society's perspective. As shown in (ENEFIRST 2022b), modelling can be used to compare demand-side and supply-side options, thereby assessing the level of energy efficiency that is beneficial to the society, considering at least the benefits of reduced energy system costs and possibly other benefits (e.g. reduced GHG emissions, improved health). Energy efficiency investments indeed come along with many additional benefits. When proved beneficial to the society, they should then be the **default option** for investment decisions and be prioritised by public policies.

The 'no-regret' options for the society might not always be the most cost-effective option for the individual investors: part of the benefits may occur at societal level (e.g. reduced GHG emissions), whereas all costs would be at the investor's level in the absence of public policies. Designing policies in line with EE1st then also means **reducing the possible gaps between the individual investors' and the society's perspectives**.

At the opposite end, when investors or decision-makers would like to give priority to a supply-side alternative, they would have to demonstrate that this alternative is more cost-effective than energy efficiency investments or other demand-side resources, or at least that it is in line with national energy planning and targets. When assessing requests to build new capacities, national regulatory authorities (NRAs) should require proof that the investment is needed and that is it the best option. Reversing the burden of proof would 'force' competent NRAs and investors to seriously consider demand-side resources and investment as an alternative and use it to determine the composition of the demand-supply portfolio.

[7] For more details about integrated energy planning, see sections 1.2 and 1.3 of (ENEFIRST, 2021c).

The role of NRAs to safeguard public interest over individual investors' interest is essential in defining mandates of regulated entities (e.g. TSOs and DSOs) and approval processes for investments.

If Member States would have prioritised investments in energy efficiency since the 2000s, they would be less vulnerable to the current energy crisis. The delays in renovating building stocks, and especially in going beyond shallow renovations, will now represent a much higher cost for Europe than what it would have represented if the ambition of the EPBD adopted in 2010 and EED adopted in 2012 would have been fully met.

Likewise, the delays in developing flexibility in power markets mean that less options are available now to face the current skyrocketing prices and even the risks of shortages considered for the winter 2022/2023.

2.6 Broaden the practices of cost-benefit analysis

Quantitative assessments are the basis for planning and major investment decisions. Quantitative modelling outcomes help make different scenarios under uncertain variables more tangible and help determine if and to what extent demand-side resources turn out to be more cost-effective for society than supply-side alternatives. This requires **integrated energy system models** or chains of models which can assess the various demand-side and supply-side options on an equal basis and reflect their interactions at the required level of detail. Levelling the playing field between supply-side and demand-side options then implies a **fair comparison** that is **not limited to direct financial costs and benefits**, but also factors in intangible socio-environmental effects in the form of various **multiple impacts**.

Broadening the practices of cost-benefit analysis (CBA) should thus be understood in two ways:

1) **Use more systematic assessments** to facilitate informed decisions
2) **Broaden the scope** of assessments for the results to provide a fair, and not short-sighted, picture

This is the rationale of the new Article 3 included in the EED recast as proposed by the European Commission in July 2021.

In this context, energy systems modelling is key for policymakers and private actors to make **informed decisions** in the scope of EE1st. While it may take time and effort to develop an all-encompassing model that properly factors in all relevant costs and benefits and provides ultimate evidence, complexity cannot be used as an excuse for stalling. There are already models and tools that can capture the most relevant impacts and more will be available with time[8]. The literature is also providing a **growing body of evidence** that can serve as benchmarks.

Economic considerations and assessments are mentioned explicitly in the EPBD (cost-optimality calculations), the EED (comprehensive assessment of efficient heating and cooling) and regarding the EE1st principle. In any case, it is essential to **avoid short-term, myopic economic considerations** that would bias decisions that should be made with long-term and strategic thinking. It is necessary to consider multiple impacts, and to assess the uncertainties from key input parameters, in particular energy prices.

[8] See for example the European projects COMBI, ODYSSEE-MURE, EERAdata, MICAT, REFEREE, or M-Benefits.

Regarding both aspects for enhanced CBA (considering multiple impacts and key uncertainties), there are key limitations for explicit consideration in cost-benefit analyses. The more impacts and uncertainties are considered in the modelling, the more it becomes complex, data- and time-intensive, with results difficult to analyse and summarize in a concise way as needed by the decision-makers.

The practice should thus aim at **finding the right balance** between the depth of analysis, the time and resources available, and providing timely and clear results that decision makers can appropriate. This implies **prioritising the assessments and analyses**. Any quantitative assessments or scenarios developed in the scope of the EE1st principle should be substantiated with quantitative and qualitative estimates of the most relevant impacts to ensure a fair comparison of demand- and supply-side resources and thus to enable informed decisions on technology investment and operation. Meanwhile, the multiple impacts' framing is still under development as an area of research and practice in the context of the EE1st principle, but important changes are becoming apparent. As the new Article 3 included in the EED recast that explicitly refers to the consideration of "*wider benefits of energy efficiency solutions from the societal perspective*" as a key component of CBA methodologies. Also, the cost-optimality calculations as part of the EPBD could be reformed to be simplified, guided by climate policy targets and better take into account the wider benefits of energy efficiency investments in the building sector.

Better understanding of the societal benefits of investment into supply or demand options should not be limited to quantitative assessments. A **qualitative understanding** of what impacts are relevant in a particular context of each decision is also essential. For example, understanding the broader impacts on public budgets (e.g. on public sector health systems and finance departments) could be important in building a cross-governmental consensus for supporting energy efficiency. Similarly, when considering the individual investors' perspective, some private benefits can be major drivers (e.g. increased asset value).[9]

[9] For more details about the issue of multiple impacts, see (ENEFIRST 2022c).

3 WALKING THE TALK OF EE1ST

Implementing EE1st cannot be simply mandated to bring about impact: it requires dedicated design, capacity building and cross-cutting cooperation. While EE1st is an overarching principle of the EU energy policy, to be effective it must be implemented at the national and local level. Implementing EE1st needs complementary policies and soft measures, such as capacity building and cooperation, and an increasing awareness of the benefits and potentials of EE1st. As demonstrated by the integrated perspectives across sectors highlighted by the project (ENEFIRST, 2021c), cooperation and exchange between policymaking and implementation also needs to improve. Silo-thinking in interconnected energy sectors is still widespread, creating barriers to integrated and cost-effective decarbonisation plans and impeding a full application of EE1st principles across sectors.

To achieve the transition towards an integrated approach to EE1st, Member States have to adopt a few adjustments to the way they design and finance policies. They have a key responsibility to establish the conditions and require the coordination between public authorities, regulated entities and market players for their activities to be in line with the overall integrated planning.

3.1 Invest in capacity building and cross-cutting cooperation

New institutional capacity to implement and administer EE1st is necessary. The additional efforts to assess supply and demand-side options on a level playing field or to check for compliance with EE1st criteria often require additional human and financial resources as well as tailored guidance on practical implementation. The latter is also important at the regional and local level where a lot of the transformation of the heating and building sectors is taking place. Local authorities require increased capacity and expertise regarding suitable cost-benefit assessments and decision-making procedures considering EE1st investments. The implementation of the EE1st principle in national and regional planning as well as policy and investment decisions must be covered in the NECP progress reports which will help increase awareness about the concept among policymakers. In the context of the EED negotiation, currently ongoing, Member states, national regulatory authorities and transmission and distribution system operators are also likely to get increased obligations to improve the energy-efficient operation of energy networks and to remove regulatory, technical and non-regulatory barriers for the implementation of EE1st.

In its proposal to amend the EED, the COM affirms the obligation of Member States, national regulatory authorities and transmission and distribution system operators to improve the energy-efficient operation of energy networks and to remove regulatory, technical and non-regulatory barriers for the implementation of EE1st. Article 25 enhances the role of National Regulatory Authorities (NRAs) to implement EE1st and includes the obligation to monitor progress, building on EU-level actors (ENTSO-E, ENTSOG and the EU DSO Entity).

The development of energy efficiency and RES already implies plans to ensure that each sector will have enough skilled professionals. The implementation of EE1st also calls for careful planning to anticipate the jobs and skills needed, especially cross-cutting skills: from the capacity to combine different models (for integrated energy modelling) to the capacity to coordinate building trades (for comprehensive renovations, dealing with both, building envelopes and heating systems).

The Member States should make sure that enough resources are available to support capacity building in public bodies, and especially for local authorities. The public policies should also provide clear signals to the market actors, for them to engage in training schemes and in developing cross-cutting cooperation.

The cooperation can also occur through data platforms, where public bodies and stakeholders can put together the data needed by all to develop integrated planning or to prepare assessments that can compare all relevant options on the supply-side and demand-side.

3.2 Appoint an authority responsible for the operationalisation of EE1st

In its guidelines and recommendations for the implementation of EE1st, the European Commission recommends Member States to, '*Ensure that the application of the energy efficiency first principle is verified by the relevant entities in those cases where policy, planning and investment decisions are subject to approval and monitoring requirements. Identify and define competences of these relevant entities and set modalities for monitoring the impacts of policy and investment decisions on energy consumption.*'[10] This aspect was also one of the new provisions introduced in the new Article 3 of the EED recast as proposed by the European Commission.

Without clearly assigned responsibilities, tasks and resources to promote an integrated approach to EE1st, there is a risk that most efforts would yield little or no results. At the moment, across Member States it is very difficult to identify the entity responsible for operationalising EE1st. While this is understandable, especially because the principle must be applied across multiple sectors and policies, the lack of a clear contact point which functions as the **EE1st hub**, facilitates the exchange of information and creates opportunities to exchange ideas about how to implement EE1st across the board has a negative impact on the effectiveness of Member States. Under which department/ministry or other organisation the EE1st hub should be created and how many people should be assigned to it remains a decision for Member States, based on their governance structure and capacity. Furthermore, **specifying a clear contact point** is also essential to **facilitate the cross-cutting cooperation** between all of the administrations and other public bodies involved. Along with the exchanges with stakeholders, concerns have been raised about the increasing level of bureaucracy due to an additional layer of the decision-making process. Yet the function of the hub should be to simplify the process. In that sense the EE1st hub could be a facilitator that has skills and knowledge, both to integrate the principle and to ensure fair comparison.

3.3 Better integrating EE1st in the updates of the NECPs

According to Article 14 of the Governance Regulation, the Member States need to prepare a draft update of their National Energy and Climate Plans (NECPs) by 30 June 2023 (and then a final update by 30 June 2024). The first NECPs submitted at the end of 2019 included limited information about the implementation of EE1st, as the principle was still a new concept. Now that the Commission has published a dedicated recommendation and guidelines in September 2021[11], and that further resources are available (including from the ENEFIRST project), it is expected that updates of the NECPs will provide more details about how

[10] https://ec.europa.eu/energy/sites/default/files/eef_recommendation_ref_tbc.pdf
[11] DG ENER also plans to develop guidance about the update of NECPs as well as sectoral guidelines for the implementation of EE1st.

the Member States implement EE1st in their energy planning and policies. It is also important for the Commission to regularly assess whether their guidelines provide sufficient guidance to Member State and update them accordingly.

Likewise, the assessment by the Commission of the NECP updates should analyse in detail how the Member States implement the EE1st principle, and then highlight the missing elements or misinterpretations about EE1st in its recommendations to the Member States.

This document includes suggestions that can support a better integration of EE1st in the NECPs. In addition, examples of policy approaches to implement EE1st can be found in (ENEFIRST 2021b) and (ENEFIRST, 2021c), where barriers and success factors for their implementation are identified. These policy approaches may not fit all national contexts and might thus require adaptations to local specificities. They can be seen as sources of inspiration. Nine of these policy approaches are also available as stand-alone implementation maps. Other sources of inspiration can be found in the 'real-life' examples analysed in (ENEFIRST 2020b), also available separately as stand-alone documents.

4 CONCLUSION

Most of the current policies are not designed around the EE1st principle, but **they can be adapted to reflect EE1st, and new policies can be designed to integrate it.** EE1st, however, cannot be simply mandated: its implementation requires dedicated effort from the Members States and stakeholders involved in policy design, capacity building and cross-cutting cooperation. To be effective, EE1st must be constantly considered when implementing policies at national and local level. Member States, national and local authorities need to adjust their practices and increase **capacity building** to secure its integration and avoid silo-thinking. Only by investing time and resources to continuously integrate EE1st in day-to-day practices, would it be possible to achieve the benefits of adopting a **systemic approach** to policy making that embraces EE1st and goes beyond the classic portfolio of energy efficiency policy and supply side measures.

The adoption of the fit-for-55 package constitutes a distinctive opportunity to further enhance EE1st in EU legislation (e.g. Energy Efficiency Directive, Energy Performance of Buildings Directive, Electricity Directive). A full implementation of this and existing energy legislation would considerably help move the EE1st principle further, even if it is not sufficient to get it systematically implemented across all areas. The European Commission's sectoral guidelines will still be needed.

Finally, adopting EE1st as a decision and planning principle contributes to better decision-making beyond climate and energy policies: if embraced, it can improve how policies are designed and how investment decisions are assessed and made. It can also serve as a delivery mechanism of societal benefits, such as the reduction of inequalities, poverty alleviation and lowering adaptation pressures. Systematically implementing EE1st would bring benefits across all areas and enable a better management of existing resources.

TO GO FURTHER

ENEFIRST (2020a). Defining and contextualizing the E1st principle. Deliverable D2.1 of the ENEFIRST project, funded by the H2020 programme, February 2020.

ENEFIRST (2020b). Report on international experiences with E1st. Deliverable D2.2 of the ENEFIRST project, funded by the H2020 programme, June 2020.

ENEFIRST (2020c). Report on barriers to implementing E1st in the EU-28. Deliverable D2.4 of the ENEFIRST project, funded by the H2020 programme, August 2020.

ENEFIRST (2020d). Analysis of transferability of global experience to the EU. Deliverable D2.3 of the ENEFIRST project, funded by the H2020 programme, November 2020.

ENEFIRST (2021a). Priority areas of implementation of the Efficiency First principle in buildings and related energy systems. Deliverable D4.1 of the ENEFIRST project, funded by the H2020 programme, March 2021.

ENEFIRST (2021b). Implementation map on barriers and success factors for E1st in buildings. Deliverable D4.2 of the ENEFIRST project, funded by the H2020 programme, June 2021.

ENEFIRST (2021c). Guidelines on policy design options for implementation of E1st in buildings and the related energy systems. Deliverable D4.3 of the ENEFIRST project, funded by the H2020 programme.

ENEFIRST (2022a). Energy Efficiency First for system decarbonisation. ENEFIRST policy brief.

ENEFIRST (2022b). Quantifying Energy Efficiency First in EU scenarios: implications for buildings and energy supply. Deliverable D3.3 of the ENEFIRST project, funded by the H2020 programme.

ENEFIRST (2022c). Energy Efficiency First and Multiple Impacts: integrating two concepts for decision-making in the EU energy system. Deliverable D3.4 of the ENEFIRST project, funded by the H2020 programme.

ENEFIRST (2022d). Fit to Energy Efficiency First (EE1st)? An in-depth analysis to understand how the EE1st principle can be implemented. The case of Germany, Hungary and Spain. Deliverable D5.1 of the ENEFIRST project, funded by the H2020 programme. Fit for Energy Efficiency First (EE1st)? An in-depth analysis of how to implement the EE1st principle in Germany, Hungary, and Spain