



## The case for an evaluation requirement in the EU Energy Efficiency Directive

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### EXTENDED ABSTRACT

In this extended abstract I make the case for an evaluation requirement in the [EU Energy Efficiency Directive](#) (EED). The requirement would relate to the national energy efficiency policy measures reported by Member States that must deliver energy savings to meet their energy savings obligation, under Article 7 in the EED (Article 8 in the [EU Commission's proposed recast](#))<sup>1</sup>.

### Background

Energy efficiency has the capacity to deliver private and public benefits across the economic, social and environmental dimensions and is a vital part of the EU's Green Deal, which aims for a just and fair energy transition to a low carbon economy. The EU recognizes that policy measures are needed to overcome market failures and barriers hindering its implementation. The EED energy savings obligation, which requires Member States to make energy savings from energy efficiency policy measures, is a crucial element in the EU's climate and energy policy framework. Meanwhile, the EU has made the Energy Efficiency First principle a central pillar of that framework, meaning that cost-efficient energy efficiency measures should be accounted for when making policy and investment decisions. At the same time, energy savings, a key performance indicator of most energy efficiency actions, cannot be directly observed, meaning that they must be estimated, adding more uncertainty to policy impacts<sup>2</sup> and risks to investors, reliant on data from previous projects on which to base decisions. The [H2020 SENSEI](#) project<sup>3</sup> provides EU policy makers with tools to help them reduce the uncertainty associated with energy efficiency policy measures, through the use of meter data in estimating energy savings and the application of a policy model that rewards participants with subsidies based on those savings.

<sup>1</sup> The EED Article 7 energy savings obligation requires Member States to make cumulative energy savings attributable to energy efficiency policy measures, equal to 44% of baseline final energy consumption (FEC), averaged over the period 2017-2019, over the course of the obligation period (2021-2030). A Member State with a policy portfolio delivering energy efficiency actions with lifetimes until at least 2030 could meet its obligation by achieving new annual energy savings of 0.8% of baseline FEC each year. The Article 7 EED energy savings obligations are different to the Article 4 EED energy efficiency targets, which require Member States to set indicative energy efficiency targets for their economies, in line with the EU's overall targets for reducing energy consumption (as defined in Article 3 EED). Member States Article 4 EED targets tend to be much more straightforward to measure, as they usually relate to levels or changes to items contained in the energy balances, such as FEC, primary energy consumption, or ratios of energy consumption and economic output.

<sup>2</sup> Policy impacts are subject to uncertainty, owing to phenomena such as autonomous movements in market conditions and free-rider effects. The unobservable nature of energy efficiency improvements adds uncertainty compared to other policy interventions.

<sup>3</sup> The H2020 SENSEI project has received funding from the European Union's Horizon 2020 Research and Innovation program under Grant Agreement No 847066. <https://senseih2020.eu>

## Argument

The increasing importance of energy efficiency, allied with the need for impact estimation, should put a premium on independent, transparent and reliable policy evaluation, measurement and verification (EM&V). Policy makers, tasked with implementing the Energy Efficiency First principle and delivering increasingly ambitious climate targets, need dependable estimates of the costs, benefits and distributional implications of their policy measures in order to adapt their policy portfolios to most cost-effectively meet societal goals.

Unfortunately, the EED does not sufficiently encourage better EM&V. Indeed, the censorial nature of the relationship between the EU Commission and Member States actively discourages Member States from improving their EM&V practices. Member States must report the energy savings from their policy measures to the European Commission and risk infringement procedures if they do not meet their obligations. The standard rationale for carrying out impact evaluations – improving policy outcomes and value for money by feeding results into future policy making – is weakened, given that evaluation results could undermine Member States' efforts to comply with the EED. Without impact evaluation information, the Commission has less evidence upon which to base assessments of Member States' compliance.

This fundamental misalignment of incentives is baked into the design of Article 7 EED and cannot be removed – Member States must report energy savings from their policy measures. Instead, the EED could be amended to require Member States to undertake independent evaluations of all their reported policy measures, with a focus on key impacts, including energy savings. This would also help to normalize energy efficiency policy evaluation and enable policy makers to make more informed policy design and implementation decisions.

Since this extended abstract was first proposed, the EU Parliament (the body directly elected by EU citizens) and Council (the body representing Member State governments) have developed positions ahead of the trilogues (negotiations between Parliament, Council and Commission) beginning in September 2022. The concept of an evaluation requirement was raised in Parliament and an amendment (AM 674) to the EU Commission proposal was debated.<sup>4</sup> The amendment was not included in the Parliament's negotiation position, but the idea could come back during the trilogues. Indeed, the need for such a requirement may become more pressing owing to the revisions to the Commission proposal put forward by the Council, which would allow Member States to carry over excess energy savings from one obligation period to the next<sup>5</sup>.

## Discussion

A study for the EU Commission during the first phase of the EED energy savings obligation (2014-2020) found that a significant proportion of the energy savings notified by Member States did not fully satisfy the requirements of the Directive, putting the delivery of energy efficiency and climate targets at risk.<sup>6</sup> As little as 43% of the energy savings were assessed as “fully additional”, while only 57% of savings had a “low risk of under-

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<sup>4</sup> Parliament Amendment 674 was drafted as follows: “Member States shall carry out transparent ex-post evaluations of the energy savings from all policy measures under Article 8 at least once every five years. A representative and statistically significant sample of energy efficiency actions from each policy measure shall be evaluated using ex-post energy consumption data in accordance with Annex V paragraph 6 of this Directive.” An amendment to Annex V EED specified the requirement in more detail.

<sup>5</sup> Council Revision to paragraph 13 of the Commission Proposal is drafted as follows: “Where a Member State has not achieved the required cumulative end-use energy savings by the end of each obligation period set out in paragraph 1 of this Article, it shall achieve the outstanding energy savings in addition to the cumulative end-use energy savings required by the end of the following obligation period. **Alternatively, where a Member State has achieved cumulative end-use energy savings above the required level by the end of each obligation period set out in paragraph 1 of this Article, it shall be entitled to carry the eligible amount of no more than 10% of such surplus into the following obligation period without having the target commitment being increased.**”

<sup>6</sup> Forster et al. (2016). [Study evaluating progress in the implementation of Article 7 of the Energy Efficiency Directive](#). Study for the European Commission.

delivery” and 81% of savings had a “low risk of double-counting”. A subsequent study for the EU Commission (as yet unpublished) found that, while Member States had made improvements to their monitoring and verification regimes and their accounting of additionality to EU law, major concerns remain over the ways in which the energy savings from many policy measures are reported. In particular, the lack of policy evaluation, means that, in most cases, the assumptions used to estimate the gross energy savings (before taking into account additionality) are not tested. The “deemed savings” method used to estimate energy savings in the buildings sector (the dominant sector for energy savings reported under the EED) relies on assumptions about energy consumption both before and after a policy intervention. Energy consumption data are very rarely used, either to estimate energy savings (the “metered savings” approach), or to verify the accuracy of “deemed savings”.

An evaluation requirement, designed primarily to provide more certainty for the EU and its Member States in the contribution of national policy measures to meeting the bloc’s energy efficiency and climate targets, would need to specify that impact evaluations be undertaken and provide guidance on how to best evaluate the energy savings attributable to policy. Reported energy savings estimated using the “metered savings” approach could be exempted from the evaluation requirement. Designing the evaluation requirement in this way would provide Member States with an incentive to use the “metered savings” approach, aligning not only Member States’ incentives with the goals of the Commission, but also the energy efficiency industry which, if subsidised according to the delivery of desired outcomes (energy savings), would be expected to work towards the maximising energy savings per unit of subsidy, as opposed to installations, regardless of the quality of workmanship or the subsequent use of energy using equipment.

As a supplement to this new regulatory requirement, the EU Commission could be tasked with providing, forums to facilitate knowledge and expertise sharing, and making regular assessments of Member States evaluation efforts. Experience in the United States, where policy evaluation is undertaken on a much more frequent and consistent basis, shows that the establishment of venues where people can propose the creation of new EM&V protocols, can foster the development of an evaluation community. An example of this would be the [Regional Technical Forum](#).<sup>7</sup>

## Conclusion

The EED energy savings obligation has the potential to put energy efficiency in the driving seat of the Fit for 55 Package, but only if efforts to improve the reliability of energy savings estimates are supported by an evaluation requirement. Commission guidance and support would be needed to help Member States fulfil this requirement, including guidance on the budget needed to undertake sufficiently robust impact evaluations.

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<sup>7</sup> The Regional Technical Forum is a technical advisory committee to the Northwest Power and Conservation Council established in 1999 to develop standards to verify and evaluate energy efficiency savings <https://rtf.nwcouncil.org>.