

Policy recommendations for the implementation of the EED energy savings obligation – energy efficiency policy for a Fit for 55 world

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Abstract

As the ENSMOV project draws to a close in November 2022, the European Parliament and Council are negotiating, with the Commission, changes to the Energy Efficiency Directive (EED). While the exact shape of this EED recast has not been decided, it is likely that the new energy savings obligation will be (i) more ambitious; (ii) exclude energy savings from fossil fuel combustion technologies; and (iii) require a minimum amount of energy savings amongst energy poor households or other vulnerable groups. The 12 policy recommendations in this report flow from the likely shape of a revised EED, aligned with achieving the goals of the Fit for 55 Package, REPowerEU and the EU Save Energy plan, providing Member States with pointers for the adaptation of their policy frameworks.

Delivering higher levels of ambition

1. Plan ahead to ensure policy measures deliver more ambition as soon as possible
2. Ramp up action in the buildings sector, focusing on the worst performing buildings, to deliver EED and EPBD requirements
3. Work with transport ministries to explore potential for energy savings in the transport sector
4. Leverage energy audits and energy management systems to access more industrial energy efficiency
5. Provide as much policy predictability as possible for the energy efficiency supply chain
6. Ensure EEOS buy-out prices are set high enough to encourage energy efficiency actions, and funds are used for energy efficiency projects
7. Adapt verification and control regimes to ensure delivery as ambition scales up

Pivoting away from fossil fuel combustion technologies

8. Support the efficient electrification of heat to deliver lots of energy savings
9. Rebalance taxes and levies, and ensure tariffs support heat electrification policy measures

Alleviating energy poverty through energy efficiency policy measures

10. Require EEOS obligated parties to meet a sub-target to ensure that energy efficiency actions are delivered amongst energy poor households
11. Involve partners in the design of energy efficiency policy measures aimed at energy poor households
12. Recycle revenues from carbon pricing to fund the upfront costs of renovating the homes of households in energy poverty

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Introduction

In 2021, the European Commission proposed a revision of the Energy Efficiency Directive (EED)¹ as part of the Fit for 55 Package of measures aimed at meeting the EU's 2030 carbon emissions reduction target.² Amongst the proposals from the Commission, three would have a significant impact on the design and implementation of policy measures aimed at meeting the EED energy savings obligation:

- An increase in the annual energy savings rate from 0.8% to 1.5% for all Member States;
- The exclusion of energy savings from fossil fuel combustion technologies; and
- The reinforcement of energy poverty provisions including a definition of priority groups and the introduction of a mandatory share of energy savings to be achieved among these groups.

The EU legislators, the European Parliament and the Council of the EU, are currently discussing these proposals with the Commission as part of the informal trilogue process. While this means that the exact shape of the future EED energy savings obligation is not yet certain, it is clear that Member States will need to increase ambition, pivot away from fossil fuels and focus part of their energy efficiency policy portfolio on energy poor households, potentially as early as 2024. The recommendations in this report provide Member States with pointers for adapting to the Fit for 55 world.

The report provides some recommendations that are specific to Energy Efficiency Obligation Schemes (EEOSs). However, it does not take a position on whether Member States should prefer EEOSs, Alternative Measures, or a combination of both in their policy measure portfolios.

The report does not provide general recommendations on energy efficiency policy design and implementation, independent of the changes to the EED expected from 2024. Equally, this report does not focus on measurement, evaluation and reporting, although good practice in these areas is a prerequisite for the implementation of energy efficiency policy measures and the realisation of energy savings that help Member States achieve their objectives.³

¹ EU Commission (2021), Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on energy efficiency (recast), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0558>

² EU Commission (2021a), 'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>

³ See for example Thenius, G. and Reidlinger, B. (2020), Cost Effectiveness for Monitoring, Reporting and Verification (Article 7 EED), H2020 ENSMOV, https://article7eed.eu/wp-content/uploads/2021/02/Cost-effectiveness-for-Monitoring-Reporting-and-Verification-Art.-7-EED_final.pdf

1 | Delivering higher levels of ambitions

All the negotiating parties propose a higher level of ambition for the EED energy savings obligation.

- The Commission proposal increased the new annual energy savings rate, from 0.8% to 1.5%, from 2024 onwards, including for Cyprus and Malta (who currently have a rate of 0.24% per year).
- The Commission's RePowerEU initiative proposes a savings rate of 1.8% per year from 2024.⁴
- The Council text proposes 1.1% in 2024- 2025, 1.3% in 2026-2027, and 1.5% in 2028-2030, maintaining a lower rate for Cyprus and Malta (0.45 % from 2024).
- The Parliament position increases the annual savings rate from 2024 to 2%, including for Cyprus and Malta.

Whatever the outcome of the trilogues, Member States are sure to need to make their energy efficiency policy measures more ambitious.⁵

Recommendation 1: Plan ahead to ensure policy measures deliver more ambition as soon as possible

The design of the EED energy savings obligation rewards actions **with long lifetimes** delivered at the start of the period more generously than those delivered later. Actions can produce eligible savings from the year of delivery until the end of the period but not beyond it. A Member State reporting no energy savings in 2021 would have seen its required new annual savings rate rise from 0.8% to 1.0% over the period 2022-2030. When looking back at the last obligation period, several Member State experts, interviewed for the ENSMOV project, said that, if they could go back in time, they would have delivered more energy savings earlier.⁶

An increase in the rate of new annual savings to 1.5% from 2024, under the revised EED, would require Member States to raise the ambition of their energy efficiency policy portfolios, with early action again rewarded with more eligible energy savings. Figure 1 shows the “staircase” nature of the energy

⁴ EU Commission (2022), REPowerEU Plan, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>

⁵ Santini, M. and Thomas, S. (2022), The future of Article 7: Status of negotiations, https://ensmov.eu/wp-content/uploads/2022/09/ENSMOV_policy-brief-trilogue-september-2022.pdf

⁶ Broc, J-S. et al (2020), Snapshot of Energy Efficiency Obligation Schemes in Europe (as of end 2019), H2020 ENSMOV, https://ensmov.eu/wp-content/uploads/2020/06/ENSMOV_Snapshot_EEOS_provisional.pdf

savings obligation, with increased action in 2024 delivering savings for up to 7 years (17% of the cumulative obligation proposed by the Commission), if actions have long lifetimes, and only 1 year (2% of the cumulative obligation) if delivered in 2030.

Figure 1: Visualisation of EU Commission proposal for revised EED energy savings obligation

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	% of TOTAL (cumulative)	
New annual savings rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	13%	2021
		0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	11%	2022
			0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	10%	2023
				1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	17%	2024
					1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	14%	2025
						1.50%	1.50%	1.50%	1.50%	1.50%	12%	2026
							1.50%	1.50%	1.50%	1.50%	9%	2027
								1.50%	1.50%	1.50%	7%	2028
									1.50%	1.50%	5%	2029
										1.50%	2%	2030
									TOTAL (cumulative)		63.60%	100%
TOTAL ANNUAL	0.80%	1.60%	2.40%	3.90%	5.40%	6.90%	8.40%	9.90%	11.40%	12.90%		

Member States should assess energy efficiency potential and policy delivery options now, across the buildings, transport and industry sectors, so that amended energy efficiency policies can be tested with stakeholders and agreed as soon as possible. Member States should undertake, and build on existing, national analysis, as well as considering the most recent EU-wide assessments.⁷ Member States can also make use of their Recovery & Resilience Plans, as well as the EU Structural funds (and related Operational Programmes) to support the development or scale up of energy efficiency policy measures (as was done with the Superbonus programme in Italy)⁸. Boosting energy efficiency schemes, as required by the REPowerEU and EU Save Energy plans, can also help households, companies and public bodies face high energy prices in a cost-effective way for the public budget.

Recommendation 2: Ramp up action in the buildings sector, focusing on the worst performing buildings, to deliver EED and EPBD requirements

The buildings sector was a major sector of focus in the 2014-2020 energy savings obligation period.⁹ More action is required to deliver the reductions in fossil fuel use envisaged in EU Commission's Climate Target Plan which, by 2030, foresees reductions in heating oil and fossil gas use of 90% and

⁷ See for example the sEnergies project that assessed energy efficiency potentials in buildings, industry and transport: <https://www.seenergies.eu/reports/>

⁸ Consiglio Nazionale Ingegneri (2021), Formidabile Impatto Positivo dei Superbonus 110%, <https://www.cni.it/media-ing/news/226-2021/3731-formidabile-impatto-positivo-dei-superbonus-110>

⁹ EU Commission (2022a), 2022 Report on the achievement of the 2020 EE targets, https://energy.ec.europa.eu/2022-report-achievement-2020-ee-targets_en

more than 40% respectively (compared with 2015).¹⁰ Doubling the rate of building renovation, as envisaged by the Renovation Wave¹¹, would help Member States go a long way towards meeting more ambitious EED energy savings obligation targets. Promoting building renovations has been clearly supported by Article 7 and Annex V of the EED, that include an exception about the additionality requirement, making it possible to report the full energy savings from building renovations¹². The focus of greater ambition should be aligned with the rest of the Fit for 55 Package.

The Commission's proposed revision of the Energy Performance of Buildings Directive (EPBD) would require the introduction of minimum energy performance standards (MEPS) for existing buildings.¹³ This should drive significant building renovation in line with the focus areas of the Renovation Wave:

- tackling energy poverty and the worst-performing buildings;
- public buildings and social infrastructure; and
- decarbonising heating and cooling.

The worst performing buildings, needing renovation to meet MEPS, are also more likely to be lived in by households on low-incomes, and therefore in energy poverty (see Recommendations 10-12). Eligible energy efficiency policy measures designed to meet the MEPS requirement in the EPBD, and the more ambitious public sector energy efficiency requirements in the EED, will generate energy savings that can be reported under the EED energy savings obligation. A combination of regulation, price reform and economic incentives is likely to be needed to deliver higher renovation rates.¹⁴

¹⁰ EU (2021a)

¹¹ EU Commission (2020), A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1603122220757&uri=CELEX:52020DC0662>

¹² This implicitly acknowledges that the "natural" rate of energy renovation is very low, as confirmed for example in: Esser, A. et al. (2019): Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU. Final report. Brussels: European Commission. <https://op.europa.eu/en/publication-detail/-/publication/97d6a4ca-5847-11ea-8b81-01aa75ed71a1>

¹³ EU Commission (2021b), Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the energy performance of buildings (recast), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0802&qid=1641802763889>

¹⁴ Thomas, S. et al (2021), Pricing is just the icing: The role of carbon pricing in a comprehensive policy framework to decarbonise the EU buildings sector, <https://www.raponline.org/knowledge-center/pricing-just-icing-role-carbon-pricing-comprehensive-policy-framework-decarbonise-eu-buildings-sector/>

Recommendation 3: Work with transport ministries to explore potential for energy savings in the transport sector

In the transport sector, the scope for demand reduction and modal shift, to make transport systems more energy efficient has not been explored to any great extent in the context of the EED. Only 9% of energy savings reported in the 2014-2020 period are estimated to be in the transport sector.¹⁵ Member States should ensure that transport and energy policy are joined up to take advantage of the scope for energy efficiency gains. Policy measures designed to deliver energy savings could be both eligible for EED energy savings obligation and help to meet broader transport, environmental and energy security policy goals.

The fact that the transport sector has been relatively under-served by eligible energy efficiency policy measures so far is in part owing to the primacy of EU new vehicle emissions targets, which virtually rule out additional energy savings from vehicle purchase incentives.¹⁶ However, there is scope for eligible energy savings through transport and integrated land-use planning, if energy efficiency goals are built into programme objectives. Examples might include modal shift from cars and trucks to public transport and rail through infrastructure investments and subsidised monthly tickets; shifts to bicycles promoted through cycle lane infrastructure; reductions in the movements of people and goods through energy efficient urban development actions; and optimization in logistics (that can reduce freight energy consumption).¹⁷ Eco driving programmes can also generate eligible energy savings.¹⁸ A few Member States have already reported energy savings from such policy measures during the 2014-2020 period. More Member States could likely do so.

¹⁵ ENSMOV (2021), Transport in EED Article 7, webpage accessed 23 October 2022, <https://article7eed.eu/?p=890>

¹⁶ EU Commission (2019), Commission Recommendation (EU) 2019/1658 of 25 September 2019 on transposing the energy savings obligations under the Energy Efficiency Directive, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1574946467190&uri=CELEX:32019H1658>

¹⁷ Sustainable Mobility for All (2022), Policy Decision-Making Tool for Sustainable Mobility 3.0, webpage accessed 2 November 2022, <https://www.sum4all.org/gra-tool/explorer-action>

¹⁸ Bogner T., and Jellinek R. (2021), Eco-driving initiatives – the key for sustainable and energy-efficient use of motorized vehicles, <https://www.odyssee-mure.eu/publications/policy-brief/eco-driving-fuel-reduction.html>

Recommendation 4: Leverage energy audits and energy management systems to access more industrial energy efficiency

The proposed revision of current Article 8 EED (that will become Article 11) changes the scope and approach of the previous mandatory energy audits on non-small and medium-sized enterprises (SMEs). It now requires Member States to ensure that enterprises with an average annual consumption higher than 100 terajoules (TJ) implement an energy management system; enterprises consuming between 10 and 100 TJ, that have not implemented an energy management system, undergo an energy audit at least every four years; and programmes encourage other non-SMEs to undergo energy audits.

The recommendations of energy audits must be transmitted to the management of the relevant enterprises. Up to now, only a small share of the measures recommended in the previous mandatory energy audits have been implemented, in part owing to uncertainty over actual savings, long payback times, difficulty to access finance, and limited public incentives.¹⁹ Policy measures to encourage the uptake of audit recommendations include voluntary agreements, potentially tied to financial incentives, such as the avoidance of national energy taxation measures (above the minimum Energy Taxation Directive threshold), energy networks, either amongst sectors or at a local or regional level, and obligations to implement the recommended actions with short payback time (e.g. less than three years) within a given period (e.g. 3 to 5 years).²⁰

Recommendation 5: Provide as much policy predictability as possible for the energy efficiency supply chain

Whatever combination of policy measures Member States choose to implement, private sector investment depends on good policy governance, including clear, transparent, coherent and predictable policy, informed by effective public consultation.²¹ The delivery of energy efficiency policy measures requires investment in the energy efficiency supply chain. Investment is needed in new production facilities (e.g., for insulation materials), staff and skills training (e.g., for energy audits; or heat pump

¹⁹ Dalouis O. (2021), Uptake of energy audits recommendations for the energy transition of companies, CINEA presentation at LIFE Clean Energy Transition Info Day, <https://cinea.ec.europa.eu/system/files/2021-07/%285%29%20Uptake%20of%20Energy%20audits%20recommendations%20for%20the%20Energy%20tr.pdf>

²⁰ Forni, D. (2017), Energy services and ESCOs, energy auditing, solving administrative barriers, Concerted Action Energy Efficiency Directive Core Theme Series Report, https://www.ca-eed.eu/ia_document/core-theme-series-report-energy-services-and-escos-january-2013-to-october-2016/

²¹ OECD (2015), Policy Framework for Investment, <https://www.oecd.org/daf/inv/investment-policy/Policy-Framework-for-Investment-2015-CMIN2015-5.pdf>

installations). It is important to provide as much predictability as possible in the policy framework and the design and implementation of policy measures. Many Member States are already witnessing bottlenecks owing to the lack of available components, designers and installers as demand rises for energy efficiency installations.²²

EEOs can be good examples of this phenomenon, as they can be set out in primary legislation for many years in advance, either with targets set out for the entire EED energy savings obligation period, or with clearly set out target review dates.²³ 16 Member States currently have an EEOs. The other eleven Member States should consider whether an EEOs would be appropriate in their jurisdiction or adopt alternative frameworks enabling multi-year commitments that do not depend on short term decisions, such as the vote on the annual State budget.

While EEOs often provide regulatory certainty, when instituted with long lifetimes in primary legislation, changes in scheme rules between obligation periods should be well-signalled and publicly consulted upon before final decisions are made. In France, the “coups de pousse” bonus system provides additional White Certificates for undertaking specific measures associated with environmental and social objectives, put in place. In response to the need for visibility, identified by Obligated Parties during the 5th obligation period consultation, the French government announced a continuation of the system until at least the end of the 5th obligation period, while removing from the bonus system actions types that are no longer in line with the government’s priorities.²⁴

Member States can also provide more certainty over the funding of alternative measures. Ireland’s One Stop Shop is an example of a policy measure that provides subsidies for energy audits, building renovation and renovation project management, all through one provider, making it more straightforward for homeowners to navigate the renovation process. The policy measure has been **guaranteed funding until 2030** to provide the necessary certainty to the supply chain, for companies

²² EU Commission (2022b), Progress on competitiveness of clean energy technologies, https://energy.ec.europa.eu/progress-competitiveness-clean-energy-technologies_en

²³ Regulatory Assistance Project (2012), Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes, <https://www.raponline.org/wp-content/uploads/2016/05/rap-ieadsm-bestpracticesindesigningandimplementingenergyefficiencyobligationschemes-2012-may.pdf>

²⁴ Légifrance (2022), Décret n° 2022-1368 du 27 octobre 2022 portant augmentation des obligations d'économies d'énergie dans le cadre du dispositif des certificats d'économies d'énergie, https://www.legifrance.gouv.fr/loda/id/JORFTEXT000046496948?datePublication=&dateSignature=&init=true&page=1&query=&searchField=ALL&tab_selection=lawarticledecre

to invest and get involved in new market opportunities.²⁵ Voluntary agreements can also be set up in this way, with multi-year targets for industry negotiated with governments.

Recommendation 6: Ensure EEOs buy-out prices are set high enough to encourage energy efficiency actions, and funds are used for energy efficiency projects

Across the EU, EEOs delivered 35% of the energy savings reported during the 2014-2020 period, more than any other policy measure type.²⁶ However, they could have delivered more with better use of buy-out mechanisms – the ability for obligated parties to pay a fee, instead of delivering energy savings.

Buy-out prices are not used in all EEOs. If they are used, it is important that they are set at high enough levels to drive energy efficiency actions within the scheme, or at least to cover the cost of public schemes then needed to deliver equivalent amount of energy savings (see below). If buy-out prices are set too low, the risk is that obligated parties treat the buy-out option as a cost of doing business, transferring the risk of not meeting energy savings obligations from EEO participants to Member State governments. This changes the EEO from a delivery mechanism for energy efficiency, to a revenue raising measure. During the 2014-2020 period, this issue arose in at least two countries (Luxembourg and Poland), hindering their ability to deliver enough savings to meet their targets.

Buy-out prices can ensure that a limit is placed on the costs passed through to bill payers, while offering some flexibility to the obligated parties, especially when a new EEO starts; obligated parties might need time before being able to deliver programmes at full scale. or to comply with all the rules of the EEO. A buy-out mechanism also means that, to deliver the energy savings envisaged, other policy measures need to fill the gap left when obligated parties use it. Member States should ensure that the buy-out funds are used for other energy efficiency projects.²⁷ In Ireland and Spain for example, the buy-out prices are set at the levels deemed necessary by the government to deliver energy savings itself.²⁸ In France, the 5th target period has seen the buyout price for the energy poor ringfence set 33%

²⁵ SEAI (2022), One Stop Shop Service, webpage accessed 2 November 2022, <https://www.seai.ie/grants/home-energy-grants/one-stop-shop/>

²⁶ EU Commission (2022a)

²⁷ Stańczyk, W. et al (2020), Financial Sustainability and Cost Effectiveness of Policies in the Context of Article 7 EED, H2020 ENSMOV, <https://ensmov.eu/wp-content/uploads/2020/10/Financial-sustainability-and-cost-effectiveness-of-policies-in-the-context-of-Article-7-EED.pdf>

²⁸ Broc, J-S. et al (2020)

higher than for the rest of the obligation, to make it more likely that actions will be delivered amongst energy poor households and reflect the higher subsidy costs required to deliver them.²⁹

Recommendation 7: Adapt verification and control regimes to ensure delivery as ambition scales up

The increase in ambition needed from national energy efficiency policy measures will need to be matched by expanded verification and control regimes, to ensure that at least a statistically significant proportion and representative sample of energy efficiency actions are verified, as required by the EED.

In addition, Member States should be aware that, in some Member States, frauds were attempted as energy efficiency ambition levels were raised during the 2014-2020 period. In Italy, prior to improvements in verification and control in 2016, the limited documentation required to register energy efficiency projects and the relatively small amount of *ex post* detailed checks led to a very large number of frauds, involving white certificates with a value of 700 million euros.³⁰ During the ramp up in activity in the French White Certificate programme in 2016, the number of fraudsters increased sharply, with many companies forming especially to submit false or vastly inflated invoices to claim certificates.³¹ In Denmark, issues with some action types (e.g. cavity wall insulation) led the public authority to remove these action types from the scheme. In three cases, the public authorities took actions to mitigate frauds or other problems. This usually required both adaptations in the monitoring and verification rules, and an increase in the resources dedicated to verifications and controls.³²

These experiences show that it is important for public authorities to anticipate risks and plan to mitigate them. While the three examples mentioned above are about EEOs, similar issues have occurred with Alternative Measures, especially when their budgets increased.³³

²⁹ Légifrance (2022)

³⁰ Di Santo, D. et al. (2018), White Certificates in Italy: lessons learnt over 12 years of evaluation, https://www.researchgate.net/publication/325569061_White_certificates_in_Italy_lessons_learnt_over_12_years_of_evaluation

³¹ Lacas, F. (2017) Certificats d'économies d'énergie : alerte aux fraudes, webpage accessed 23 November 2022, <https://www.batiactu.com/edito/fraude-aux-cee-millions-euros-jeu-51295.php>

³² Petersen, M.L. (2018), The Danish Energy Efficiency Obligation (EEO) Scheme, Presentation at Odyssee-Mure meeting, <https://www.odyssee-mure.eu/events/workshops/vienna/energy-efficiency-obligation-scheme-denmark.pdf>

³³ In France, similar frauds as observed for white certificates occurred for the tax credit scheme. It should be noted that in both cases, the frauds remained a small percentage of the whole actions funded. Nevertheless, as the total yearly funding amounts of these schemes reached several billion euros per year, the amounts subject

2 | Pivoting away from fossil fuel combustion technologies

The Commission proposes that policy measures and energy savings regarding the use of direct combustion of fossil fuel technologies should not be permitted to fulfil the energy savings obligation as from 1 January 2024. The Council and the Parliament propose that for policy measures promoting combinations of technologies, the share of energy savings related to the fossil fuel combustion technology is not eligible.

Both the Council and Parliament propose to introduce more flexibility related to this ban. The Council proposes a derogation for energy intense enterprises in the industry sector. This derogation would apply during the 2024-2030 period under strict conditions. The Parliament proposes to postpone the fossil fuel exclusion to mid 2028, except for the non-residential sector where it would apply from 2024. The Parliament however caps the use of fossil-fuel related savings between 2024 and 2028 (1/4 of the obligation).³⁴

The outcome of the trilogues on this aspect is uncertain, however, it is likely that the replacement of fossil fuel heating systems with new fossil fuel heating systems will become ineligible for compliance with the EED energy savings obligation during the 2020s. This will be in line with the EU's 2030 and 2050 climate goals as well as other aspects of EU policy direction, including REPowerEU³⁵ and the Commission's proposal for the EPBD³⁶ and the Renewable Energy Directive³⁷. It is also worth noting the impact on investors from the EU Taxonomy regulation (regulation 2020/852 and delegated acts) that will likely produce a push toward the reduction of the use of fossil fuels faster than the EED obligation, especially for the non-residential sector.³⁸

to frauds were not negligible, justifying the increase in the resources dedicated to verification and controls. See for example, The Local (2019), France issues fraud warning over dodgy energy renovation companies, <https://www.thelocal.fr/20191120/fraud-warning-about-dodgy-energy-renovation-companies-in-france/>

³⁴ Santini, M. and Thomas, S. (2022)

³⁵ EU Commission (2022)

³⁶ EU Commission (2021b)

³⁷ EU Commission (2021c), Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as regards the promotion of energy from renewable sources, https://ec.europa.eu/info/sites/default/files/amendment-renewable-energy-directive-2030-climate-target-with-annexes_en.pdf

³⁸ EU Commission (2022c), Sustainable finance taxonomy - Regulation (EU) 2020/852, webpage accessed 15 November 2022, https://ec.europa.eu/info/law/sustainable-finance-taxonomy-regulation-eu-2020-852_en

Recommendation 8: Support the efficient electrification of heat to deliver lots of energy savings

The likely exclusion of energy savings from the combustion of fossil fuel technologies will mean that the replacement of gas and oil boilers with more efficient versions will not be eligible for energy savings. This is in line with the modelling underpinning the EU Commission's Climate Target Plan, which foresees almost 25% of all heating systems replaced in the second half of the 2020s, a big decline in gas, coal and heating oil use, and an increase in the use of electricity and ambient heat for space heating, as a result of the take up of heat pumps.³⁹ It also supports the achievement of the objectives of the REPowerEU proposal in terms of security and resilience of the EU energy sector.⁴⁰ Investing in new or replacement fossil fuel heating systems would lead to stranded assets that would be incompatible with carbon targets before the ends of their lifetimes. Electrification is one of the main alternatives to fossil fuel systems, together with district heating supplied with renewable energy or waste heat (district heating being promoted by other articles of the EED, now Articles 23 and 24, and by RED II). In countries with a high proportion of energy and emissions in the industry sector, the electrification of higher temperature industrial processes will also be crucial during the 2020s.

The eligible energy savings from switching from combustion-based heating technologies to electrically powered heat pumps are many times greater than the savings from replacing a fossil-fuel boiler with a more efficient boiler. The higher upfront costs of heat pump installations means that larger subsidies are often required to persuade households and businesses to switch, although as supply chains develop, and if policy costs added to energy bills are rebalanced (see Recommendation 9), required subsidy rates should reduce. Nevertheless, even at relatively high subsidy rates, supporting heat pumps is likely to be much more cost-effective from a kWh saved per Euro subsidy perspective, compared with supporting fossil fuel boilers. Table 1, using the reference values in the Commission's Guidance note⁴¹ for a heating system with an annual heat demand of 10 000 kWh, currently met by an oil boiler, shows that replacing the system with a heat pump generates 15 times the eligible final energy savings, compared with replacing it with an efficient boiler (90% efficient). The difference in final energy savings is similar for replacing a gas boiler with a heat pump. Primary energy savings, however, will be much smaller, at least in the short term, in Member States relying on inefficient fossil and nuclear power

³⁹ EU Commission (2020a), EU Climate Target Plan, https://climate.ec.europa.eu/eu-action/european-green-deal/2030-climate-target-plan_en

⁴⁰ EU Commission (2020)

⁴¹ EU Commission (2019)

plants for electricity production. It is therefore paramount that the electrification of end-uses such as heat is undertaken in parallel with the expansion of power generation from renewable energy sources.

Table 1: Comparison of eligible final energy savings from replacing a fossil fuel boiler and switching to a heat pump

Case	Reference technology, conversion efficiency & energy consumption ¹	Installed technology, conversion efficiency & energy consumption	Eligible energy savings
1. Support provided to replace oil-fired boiler	Ecodesign oil-fired boiler, 0.86, 11 628 kWh	Efficient fossil fuel-fired boiler, 0.90, 11 111 kWh	527 kWh
2. Support provided to ensure switch to heat pump	Ecodesign oil-fired boiler, 0.86, 11 628 kWh	Efficient heat pump, 3.5, 2 857 kWh	8 771 kWh

Note: in the calculations above, we assume that the baseline is that, in the absence of the policy measure, the final customer would have replaced the old heating system (here oil-fired boiler) with a heating system using the same technology (oil-fired) complying with the ecodesign minimum energy performance requirements (here efficiency of 0.86). This approach is thus applicable when the policy measure is designed to promote fuel switching (e.g. grant restricted to or with higher rate when the heat pump replaces a fossil fuel boiler).

Recommendation 9: Rebalance taxes and levies, and ensure tariffs support heat electrification policy measures

Heating system replacement policy measures, aimed at persuading homes and businesses to switch from fossil fuel heating systems to electrically powered heat pumps, are less effective if energy prices do not also provide incentives to switch fuels. Taxes are almost universally higher on electricity than on fossil gas and heating oil, with the environmental costs of fossil fuel use rarely accounted for in Member States' tax rates⁴². In addition, levies to fund renewable energy production (e.g., through feed-in tariffs for solar power) fall almost entirely on electricity. Together, the impact of disproportionately high taxes and levies on electricity is to make it more difficult to support fuel

⁴² At the same time, the existing EU Emissions Trading System internalises the environmental costs of greenhouse gas emissions from electricity generation and large district heating installations in electricity and heat prices.

switching to more efficient heating systems, requiring higher up-front subsidies to make investments in clean heating systems attractive.⁴³

Member States have various options for rebalancing taxes and levies. Many countries have included the external environmental costs of fuel use in the price paid (e.g., Sweden, which has the highest carbon tax rate in the EU⁴⁴, and Denmark, which imposes taxes based on the broader environmental impacts of fuels⁴⁵). Levies can either be moved to general taxation (the approach being taken in Germany⁴⁶) or shifted to fossil fuels (the approach being taken in the Netherlands)⁴⁷. Exemptions from high energy tax rates can also be provided for users of electricity for heat, as is the case in Denmark.

Other elements of electricity prices can also be redesigned to align the incentives facing consumers with the optimization of the energy system and wider policy goals. For example, capacity charges per kilowatt (kW) reduce the incentive to use electricity efficiently and penalise users that switch to electricity-consuming end-uses such as heat pumps, conduction cookstoves and electric vehicles. Connection charges should reflect the costs of connecting to the grid and the price of electricity should reflect how much is used and when it is used to encourage efficient use without penalising electrification.⁴⁸

⁴³ Rosenow, J. et al (2022), Levelling the playing field: Aligning heating energy taxes and levies in Europe with climate goals, <https://www.raponline.org/wp-content/uploads/2022/07/Taxes-and-levies-final-2022-july-18.pdf>

⁴⁴ World Bank Group (2020), State and trends of carbon pricing 2020, <https://openknowledge.worldbank.org/bitstream/handle/10986/33809/9781464815867.pdf?sequence=4&isAllowed=y>

⁴⁵ OECD (2019), Taxing Energy Use 2019: Country Note – Denmark, <https://www.oecd.org/tax/tax-policy/taxing-energy-use-denmark.pdf>

⁴⁶ Reuters (2022), German finance minister backs early end to green energy levy, <https://www.reuters.com/business/sustainable-business/german-finmin-adds-his-voice-calls-early-end-green-energy-levy-2022-01-30/>

⁴⁷ Rijksoverheid (2021), Energiebelasting, <https://www.rijksoverheid.nl/onderwerpen/milieubelastingen/energiebelasting#:~:text=Het%20kabinet%20verhoogt%20de%20energiebelasting,voor%20duurzame%20warmteopties%2C%20zoals%20aardwarmte>

⁴⁸ Lazar, J. and Gonzalez, W. (2015), Smart Rate Design for a Smart Future, Regulatory Assistance Project, <https://www.raponline.org/knowledge-center/smart-rate-design-for-a-smart-future/>

3 | Alleviating energy poverty through energy efficiency policy measures

The revised EED will almost certainly require Member States to deliver a minimum amount of energy savings amongst energy poor households.⁴⁹ Neither the Council nor the Parliament has fundamentally challenged the Commission's proposal, although the Parliament makes some amendments to the way that the size of the ringfence would be calculated.⁵⁰

Given that the ringfences calculated by the EU Commission used data from 2019, and energy poverty has increased since then⁵¹, Member States should consider delivering more than the minimum ringfence amongst target households. The following recommendations provide pointers on policy design to boost delivery amongst energy poor households. Recommendation 10 is specific to EEOs; the others are relevant to all policy measures targeting energy poor households.

Recommendation 10: Require EEOs obligated parties to meet a sub-target to ensure that energy efficiency actions are delivered amongst energy poor households

Experience has shown that providing incentives to obligated parties to deliver energy efficiency actions amongst energy poor households has not worked, at least at the levels of incentive provided thus far. Austria, Croatia, Cyprus and Greece applied uplifts to the energy savings that obligated parties could report towards their targets, but these did not result in significant delivery amongst energy poor households. For example, Austria allowed obligated parties to claim 1.5 kWh for every 1 kWh saved amongst energy poor households but saw less than 1% of the energy savings achieved in this group.

A dedicated sub-target, or ringfence, guarantees delivery amongst energy poor households. This approach has been applied successfully in France, Ireland and the United Kingdom. In France, the sub-

⁴⁹ The exact description of the target group will depend on the outcome of the negotiations. The Commission proposed the following groups: energy poor, vulnerable, or where appropriate, households living in social housing. The Council and Parliament have also proposed other groups, such as low-income and financially weak.

⁵⁰ Santini, M. and Thomas, S. (2022)

⁵¹ Ari, A. et al (2022), Surging Energy Prices in Europe in the Aftermath of the War: How to Support the Vulnerable and Speed up the Transition Away from Fossil Fuels, International Monetary Fund Working Paper No. 2022/152, <https://www.imf.org/en/Publications/WP/Issues/2022/07/28/Surging-Energy-Prices-in-Europe-in-the-Aftermath-of-the-War-How-to-Support-the-Vulnerable-521457>

target is accompanied by additional incentives to reduce the impact on bill payers of delivering energy efficiency actions amongst households that cannot contribute substantially to the upfront costs.⁵²

Table 2: Comparison of approaches taken to alleviating energy poverty through EEOs in the 2014-2020 period

Uplift Factor		Ringfence	
Austria	1.5 (households affected by energy poverty)	France	25% (low-income households)*
Croatia	1.2 (vulnerable customers) 1.1 (areas with developmental difficulties)	Ireland	5% (households receiving types of welfare payments or located in areas designated for revitalisation)
Cyprus	1.5 (energy poor households)		
Greece	1.4 (actions tackling energy poverty)		
France	2 (very low-income households)* + Fixed rate (higher than White Certificate price) for specific programmes answering government calls for proposals	UK	100% (energy poverty alleviation) 15% (rural areas)

*Note: In France, the uplift factor has been superseded by the 25% ringfence, which now focuses on the “very low-income households” previously targeted by the uplift factor.

Recommendation 11: Involve partners in the design of energy efficiency policy measures aimed at energy poor households

Member States can learn from those countries that have already implemented energy poverty actions through their EEOs and alternative measures. Amongst those countries that have used a ringfence in their EEOs, experience has shown that, through the involvement of “middle actors”, such as local authorities, social services, NGOs and social housing providers, the costs of delivery have been reduced and the targeting of support has improved. This is because organisations working with energy poor, low-income and vulnerable households often have existing relationships with the households that are most in need of support and are trusted points of contact. An example of the combination of requirement and support for middle actors can be found in France, where organisations assisting in the targeting of, and engagement with, energy poor households are able to claim white certificates in

⁵² Sunderland, L. and Thomas, S. (2021), The Energy Efficiency Directive Energy Savings Obligation and Energy Poverty Alleviation, H2020 ENSMOV and H2020 SocialWatt, <https://socialwatt.eu/sites/default/files/news/ENSMOV.pdf>

line with their spending on such activities, giving them financial support for this service.⁵³ Czech Labour Offices are being trained and equipped with materials to advise their clients on how to lower energy consumption and access support programmes.⁵⁴ Training non-energy specialists working with target groups can help in increasing referrals to energy efficiency programmes and bill support packages.

Recommendation 12: Recycle revenues from carbon pricing to fund the upfront costs of renovating the homes of households in energy poverty

Energy poor households are least likely to be able to contribute significantly to the costs of renovating their homes, meaning that more subsidies need to be provided through other funding sources. At the same time, carbon (and energy) taxation measures (and emissions trading systems) raise revenues that can be used for energy efficiency programmes. These forms of taxation are regressive, as they raise the proportion of low-income households' income spent on energy by more than that of higher-income households. Recycling carbon revenues to fund energy poverty alleviation through energy efficiency programmes makes sense, both from an EED energy savings obligation perspective, and the broader climate and social objectives of the Fit for 55 Package.⁵⁵

The Social Climate Fund (SCF) is likely to be one stream of funding linked to carbon pricing. Depending on the outcome of negotiations, it is likely to receive a significant proportion of the revenues from the extension of the EU Emissions Trading System to fossil fuels combusted in the buildings and transport sectors (ETS 2). Member States setting out their plans for renovating homes amongst those in energy poverty in their Social Climate Plans will be able to access the SCF. SCF funding will need to be bolstered by other funding – for example from national carbon revenues – to meet the investment needed to deliver the renovations amongst energy poor households envisaged in the Fit for 55 package.⁵⁶ The Czech New Green Savings programme is a good example of a national programme funded in part through carbon revenues. The New Green Savings Light programme provides subsidies of up to 100% for low-income households for actions such as changing windows and some insulation installations.⁵⁷

⁵³ Sunderland, L. and Thomas, S. (2021)

⁵⁴ Ministerstvo životního prostředí (2022), [zkrotime energie.cz](https://zkrotimeenergie.cz), webpage accessed 16 November 2022, <https://zkrotimeenergie.cz>

⁵⁵ Thomas, S. et al (2021)

⁵⁶ Treadwell, K. et al (2022), SCF and ETS 2 impact studies – Evidence Review, https://wwfeu.awsassets.panda.org/downloads/ets2_and_scf_studies_review_final_1.pdf

⁵⁷ Státní fond životního prostředí ČR (2022), Nová zelená úsporám Light, webpage accessed 16 November 2022, <https://novazelenausporam.cz/nzu-light/>

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