Planning a fair and ambitious Renovation Wave

Tools and practices to build better lives through the implementation of the Fit for 55 strategy

October 2024

Contents

1. Introduction

Energy poverty is a growing phenomenon increasingly affecting households in the European Union. Eurostat affirms that around 48 million households[1] cannot keep their home adequately warm during the winter. Meanwhile, up to 19% of households[2] have declared not being comfortably cool in summer. Energy poverty is the result of several socio-economic factors mixed with the functioning of the EU energy system, and the low energy performance levels of the building stock in the EU. Despite different funds and programmes being launched at EU and national level to improve the energy efficiency of buildings and increase the renovation rates of homes, energy poverty indicators have either increased or stayed almost constant during the last years. Meanwhile, renovation rates have slightly increased for the residential sector, but these are still far from the rates needed to reach a 1.5ºC Paris Agreement Compatible scenario.[3] Beyond achieving our energy and climate targets, in view of the increasing energy poverty rates, it is important to ensure that future renovations benefit the most vulnerable households.

The newly adopted Energy Performance of Buildings Directive (EPBD), if implemented correctly, has the potential to alleviate this growing phenomenon, while also supporting the European Union in achieving a decarbonised building stock, keeping us in line with our Paris Agreement goal in a manner that leaves no one behind. This piece of EU legislation is also particularly important to support the roll-out of the new EU Emission Trading System covering GHG emissions from the building and transport sector (EU-ETS 2). The former, which will be implemented from 2027 onwards, will introduce a carbon tax on heating fuels (in the case of buildings), and likely increase households' energy bills. As part of the EU-ETS2, a Social Climate Fund will be established. The latter was designed with the aim to provide EU Member States with dedicated funding (disbursed upon completion of Social Climate Plans), so that the most affected vulnerable groups, such as households in energy or transport poverty, are directly supported, and not left behind during the transition in these sectors.

Although, due to the slow renovation rates, the high energy demand of buildings across the EU,[4] and the fact that 75% of the whole stock is deemed inefficient,[5] it is clear that the implementation of the EU-ETS 2 will need to be accompanied by real action on buildings. Under this light, the EPBD becomes a crucial tool in the hands of Member States to drive down buildings' energy demand, while supporting the penetration of renewable energy in their energy mix, starting from the worst-performing buildings. As part of the EPBD, the National Building Renovation Plans (NBRPs) will lay out Member States' plans towards the fulfilment of the EU decarbonisation targets for our building stock, while ensuring the most vulnerable households and energy poor are protected. This important tool, together with Social Climate Plans (SCPs), could have the potential to develop ambitious and inclusive buildings policies and programmes that can shield these segments of the population, while supporting the transition of the building sector. Although, this requires learning from past experiences linked to the Long-Term Renovation Strategies (LTRS), and ensuring that sufficient financial support is available and well-earmarked.

This report seeks to explore the link between the Social Climate Plans and the National Building Renovation Plans, along with the challenges and opportunities associated with their drafting process. Recommendations to leverage their complementarity in view of rolling out an ambitious and socially just Renovation Wave have been brought forward. The work also reflects on the lessons learnt and good practices developed by Member States in the past LTRS.

1 https://ec.europa.eu/eurostat/databrowser/view/ILC_MDES01/default/table?lang=en

2 https://cooltorise.eu/about-the-project/

3 https://caneurope.org/content/uploads/2024/09/PARIS-AGREEMENT-COMPATIBLE-SCENARIO-2024.pdf

4 40% of the EU total energy demand: https://energy.ec.europa.eu/news/focus-energy-efficient-buildings-2024-04-16_en

5 Ibidem

2. Methodology

Considering the Long-Term Renovation Strategies (LTRS) are the precursors of National Building Renovation Plans (NBRPs), and to a certain extent, Social Climate Plans (SCPs) have in their objectives to decarbonise EU's buildings stock and alleviate energy poverty, we aimed to obtain first hand knowledge on their drafting, content and implementation. During the months of July and August, seven experts on energy poverty and/or energy performance of buildings (with focus on the residential sector) from different Member States were interviewed. These interviews' main aim was to gather information about previous LTRS processes and on the basis of this, possible barriers that both NBRPs and SCPs could face were assumed. On the basis of the latter, a series of opportunities were found to feed into our recommendations and ultimately foster innovative approaches in the drafting process of the Plans. Lastly, thanks to these interviews and desk research, the report also brings forward a number of best practices and case studies coming from the local to national level that aim at inspiring the reader and national implementers.

3. Acknowledgements

CAN Europe would like to acknowledge Javier Tobias for his work and expertise channelled in this Report.

The authors would like to thank Sergio Andreis (Kyoto Club), Etienne Charbit (CLER), Islene Facanha (ZERO Portugal), Angelos Koutsis (Bond Beter Leefmilieu), Carmen Sanchez Guevara (Polytechnic University of Madrid), Firląg Szymon (Warsaw University of Technology) and Lidija Živčič (Focus) for taking the time to discuss LTRS and best practices. They also thank the reviewers, Christophe Jost (Bankwatch), Eleanor Scott (Carbon Market Watch) and Louise Sunderland (Regulatory Assistance Project) for their comments and insightful suggestions.

4. Background

National Building Renovation Plans

National Building Renovation Plans (NBRPs) were introduced via the Energy Performance of Buildings Directive (EPBD) recast of 2024 (Art. 3), with the objective to **transform existing buildings into zero-emission buildings by 2050**. These new plans aim at replacing and improving the approach of the Long-term Renovation Strategies (LTRS)[6], which were firstly introduced in the EPBD recast of 2018 (Art. 2a). Their aim was to support the renovation of Member States' national buildings stock, into highly energy efficient and decarbonised building stocks by 2050, and facilitating the cost-effective transformation of existing buildings into nearly zero-energy buildings.

As one of the main important changes, these NBRPs will need to be drafted following a common template (Annex II), which requests specific data related to Member States' national building stock, along with quantifiable indicators and national targets, instead of the indicative milestones as once prescribed by the LTRS. Draft National Building Renovation Plans are expected for 31st December 2025, while the final ones are due by 31st December 2026.

More specifically, NBRPs will have to contain different sections covering a diagnosis, a set of objectives, detailed and concrete proposals and their expected results (See Fig. 1).

NATIONAL BUILDING RENOVATION PLANS SECTIONS

- An overview of the national building stock
- A roadmap with targets and goals for 2030, 2040 and 2050
- An overview of the implemented and planned policies and measures
- An outline of the investment needs, the budgetary sources and the administrative resources
- Primary energy use and operational greenhouse gas emissions thresholds of new and renovated zero-emission buildings
- Minimum energy performance standards for non-residential buildings
- National trajectory for the progressive renovation of the residential building stock
- Evidence-based estimate of expected energy savings and wider benefits

Fig. 1 *Sections of NBRPs. Source: Directive 2024/1275.*

In the past, LTRS were only expected to encompass an overview of policies and actions to target the worst performing buildings stock and an outline of relevant national actions that contributed to the alleviation of energy poverty (Art. 2a)[7]. At the time, no common EU definition existed for "worst-performing buildings" or "energy poverty", which made the monitoring and evaluation of LTRS at EU level nearly impossible. Also, beyond the discrepancies in the national definitions, such requirements were not fulfilled by all Member States.[8] Now, NBRPs templates have more defined indicators, targets and policies linked to energy poverty, worst-performing buildings and vulnerable households (See Fig. 2).

6 LTRS were introduced in the EPBD recast of 2018 (Art. 2a) to support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy efficient and decarbonised building stock by 2050, facilitating the cost-effective transformation of existing buildings into nearly zero-energy buildings

7 "Energy poverty" and "Worst Performing Buildings" definitions can be found respectively in EED 2023 and EPBD 2024

8 Castellazzi, L., Paci, D., Zangheri, P., Maduta, C., Economidou, M., Ribeiro Serrenho, T., Zancanella, P., Ringel, M., Valentova, M., & Tsemekidi Tzeiranaki, S. (2022). Assessment of the first long-term renovation strategies under the Energy Performance of Building Directive (Art. 2a). Joint Research Centre. P. 29. https://doi.org/10.2760/535845

SECTION	RELEVANT SCPs ELEMENTS
Overview of the national building stock	Definition for **worst-performing buildings**
	Number of worst-performing buildings
	Identification of the 43%[9] worst-performing buildings
	Definition of **energy poverty**
	Percentage of the population affected by energy poverty
	Proportion of disposable household income spent on energy
	Population living in **inadequate dwelling conditions** or with inadequate thermal comfort conditions
	Annual renovation of **worst-performing buildings**
Overview of the national building stock	Annual renovation of the 43% worst-performing residential buildings
	Expected wider benefits regarding the **reduction of people affected by energy poverty**
	Minimum energy performance standards and other policies and actions targeting worst-performing buildings, including safeguards
Implemented and planned policies and measures	Pursuing **empowering and protecting vulnerable consumers, alleviating energy poverty and housing affordability**
	One-stop shops
	District level renovation programmes
	Awareness-raising campaigns and other **advisory tools**
	Accessibility for persons with disabilities (optional)

Fig. 2 *Relevant mandatory or optional elements of NBRPs. Source: Directive 2024/1275*

9 Following the application of minimum energy performance standards (MEPS) in the residential sector (Art. 9.2), at least 55 % of the decrease in the average primary energy use carried out through MEPS in the residential sector should be achieved through the renovation of the 43 % worst-performing residential buildings.

A key element of the NBRPs will be the **Minimum Energy Performance Standards (MEPS)**, which will apply to non-residential buildings. MEPS are rules that require existing buildings to meet an improved energy performance requirement as part of a wide renovation plan for a building stock or at a trigger point such as sale, rent, donation or change of purpose. **In the case of the residential building stock, NBRPs must contain a national trajectory for the progressive renovation of the residential building stock**, which shall be expressed as a decrease in their average primary energy use. To achieve different trajectories' milestones, different measures and programmes could be used, among which MEPS. Lastly, at least 55 % of the decrease in the average primary energy must be achieved through the renovation of the 43 % worst-performing residential buildings.

Another important change to keep in mind is that to develop these Plans, **Member States will still need to carry out a public consultation.** Although, as opposed to the LTRS experience, these will need to involve in particular **local** and **regional authorities** and other **socioeconomic partners, including civil society and bodies working with vulnerable households** (Art. 3.4). Member States are also required to annex a summary of the results of its public consultations to the draft NBRPs.

Lastly, NBRPs have had their monitoring methodology and timeline designed to align with the review and update processes of Integrated National Climate and Energy Plans (NECPs).[10] As of January 2028, NBRPs should be submitted as part of NECPs, closing existing gaps between plans that aim to monitor and tackle energy poverty (Art. 24).

Social Climate Plans

Social Climate Plans (SCPs) were introduced within the Social Climate Fund (SCF) (Art. 4 & Annex V) to **address the social impacts caused by the inclusion of buildings and road transport in the European Emissions Trading System** (EU-ETS 2) after 2027. The EU-ETS 2 will follow the same market mechanisms as EU-ETS 1, although until 2030, in the case of price increases for allowances that go beyond 45 €/t CO2 20 million extra allowances would be released. Besides that, if prices double or triple the average price of allowances for three consecutive months, 50 million and 150 million allowances would be released, respectively (Art. 30.h).

This Fund will have a maximum amount of €65 billion, achieved by the revenue generated from the auctioning of 50 million allowances from EU-ETS 1 (Art. 10a.8b) and 150 million allowances from EU-ETS 2 (Art. 30.d.4). Additionally, Member States will contribute at least 25% of the estimated cost of their SCPs (Art. 15), reaching €86,67 billion.

SCPs will have this budget available for the period from 1 January 2026 to 31 December 2032[11] (Art. 10) and their maximum financial allocation through the SCF (See Fig. 3 & Fig. 4) among the different Member States will follow different social and environmental variables (Annex I).

10 Sibileau, H., & Vladyka, V. (2024). The EPBD decrypted: a treasure chest of opportunities to accelerate building decarbonisation. BPIE. P. 19, 23. https://www.bpie.eu/publication/the-epbd-decrypted-a-treasure-chest-of-opportunities-to-accelerate-building-decarbonisation/

11 If the entry into force of EU-ETS 2 is postponed until 2028 due to exceptionally high energy prices, the maximum amount would be reduced to €54,6 billion. (Art. 10.1 of the Regulation (EU) 2023/955)

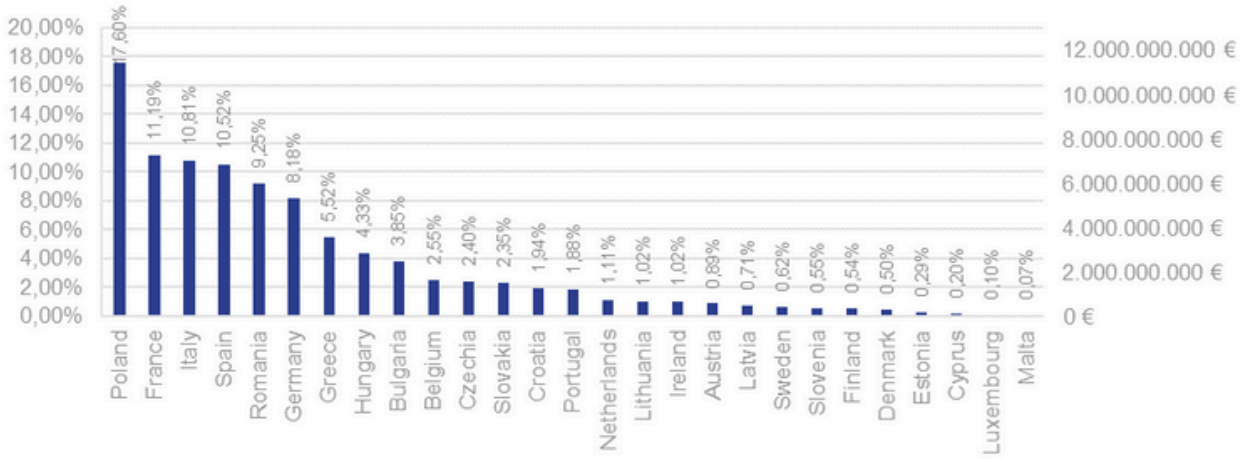


Fig. 3 *Maximum financial allocation for each Member State under the Social Climate Fund (excluding Member States contribution to SCPs). Source: Regulation (EU) 2023/955.*

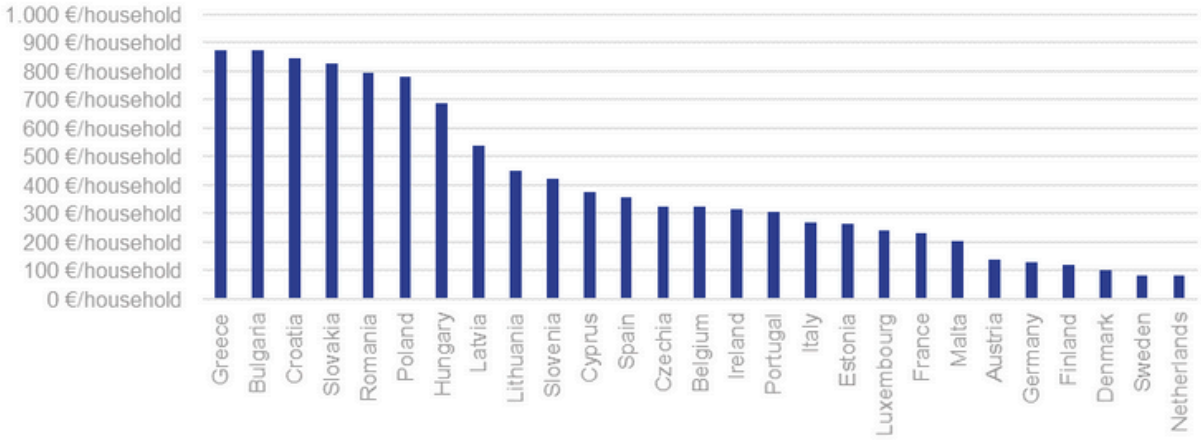


Fig. 4 *Maximum financial allocation per household for each Member State under the Social Climate Fund (excluding contributions to SCPs). Sources: Regulation (EU) 2023/955 and Eurostat's households statistics.*

The Fund can be split between **measures with lasting impacts on vulnerable households, vulnerable transport users and vulnerable micro-enterprises; and direct income support measures and expenses linked to technical assistance** during the drafting, monitoring and evaluating process of the Fund (Art. 8). Costs of the measures for direct income measures and technical assistance for the management of the Fund are limited to 37,5% and 2,5% respectively (See Fig. 5).

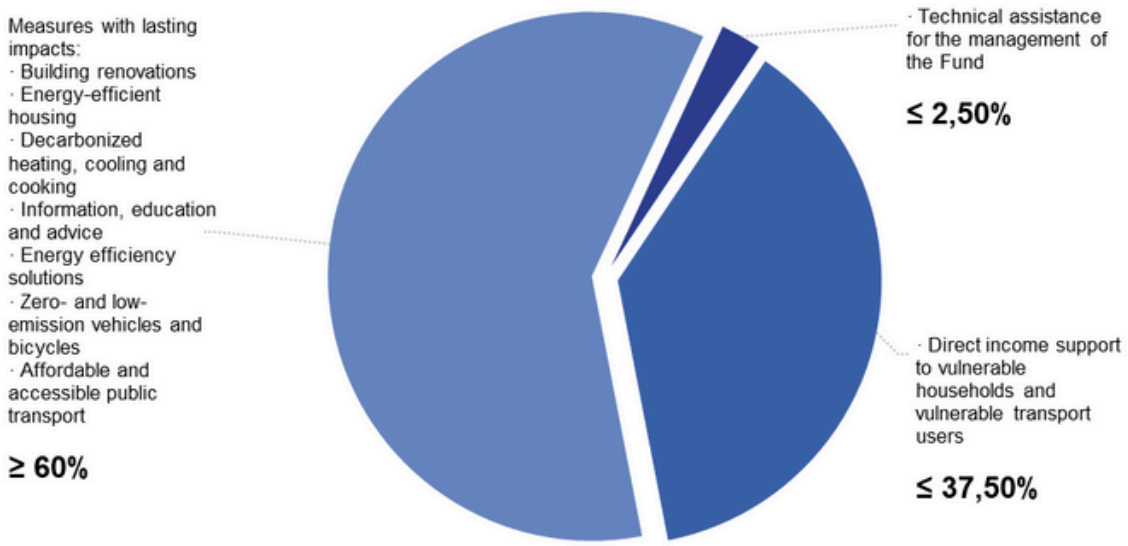


Fig. 5 *Eligible measures and investments to be included in SPCs. Source: Regulation 2023/955*

As NBRPs, SCPs have a template with detailed sections and several relevant elements regarding the evaluation of the social impacts produced by EU-ETS 2, measures to reduce said impacts and the financing and expected results of said measures.

Lastly, Member States will need to communicate about their approach towards the fulfilment of Article 9 targets. This reporting exercise should display data about the calculation of the trajectory (other relevant metrics), as well as the enabling framework to be put in place to accompany its roll-out. As part of this reporting exercise, which will likely be linked with the National Building Renovation Plans cycles, the Commission will be tasked to analyse and report on the effectiveness and appropriateness of funding for building renovation to ensure that the Renovation Wave actually rolls-out. In this regard, it will be of crucial importance that the Commission carries out the analysis taking into account the social impacts of such **financial support, and that this includes technical assistance too.**

SECTION	RELEVANT NBRPs ELEMENTS
Overview and process for establishing the SCP	Information on the **current national energy and climate policies**
	Summary of the consultation process of local and regional authorities, social partners, civil society organisations, youth organisations, and other relevant stakeholders
Measures, investments, milestones and targets	Clear and evidence-based analysis of the existing challenges and how they are addressed
	Means of implementation referring to the administrative capacity of the Member State at central, and where relevant regional and local levels
	Objective verification for milestones and targets
Analysis and overall impact	**Definition for energy poverty** and explanation of its application at national level
	Estimate of the increase in prices due to the inclusion of greenhouse gas emissions of buildings in the emissions trading system.
	Short-term (3 years) and medium-term (2032) expected results
Complementarity, additionality and implementation of the plan	Other existing or planned sources that could finance the Social Climate Plan's measures
	Explanation and justification of how the new or existing measures or investments are additional and **do not substitute recurring national budgetary expenditure**
	Explanation on how **geographic specificities** are taken into account

Fig. 6 Relevant elements of SCPs. Source: Regulation 2023/955

Also, SCPs must as well follow a **public consultation with different stakeholders,** namely local and regional authorities, representatives of economic and social partners, relevant civil society organisations, youth organisations and other stakeholders (Art. 5). An annex with a summary of findings from this process will also need to be submitted along with the Plans. Although, for the Social Climate Plans, Member States are asked to include in the latter, information on **how the inputs from different stakeholders have been reflected in the SCP**.

In light of the functioning of both NBRPs and SCPs, it seems clear that both planning tools have a clear mandate to **leverage housing renovation to tackle energy poverty**. To preserve and strengthen this point, it will be therefore crucial to design both Plans in a cohesive way, which addresses challenges and leverages opportunities ahead, while operationalising the learnings from past experiences.

5. Challenges

a) Falling into “tokenism”: Poor and unrepresentative public consultations

Planning and carrying out housing renovation projects and providing adequate support for vulnerable households are complex tasks separately, and especially when addressed together. **Local and regional organisations and administrations working on a day-to-day basis in these fields, and particularly with vulnerable groups, are essential actors that can help orchestrate plans and develop renovation schemes that successfully prioritise the most vulnerable segments of the population while taking into account all the intersectionalities at stake.**

Poor and non-representative public consultations, carried out in short periods of time, featured by a lack of communication, information and interactions amongst interested parties, and a lack of proper feedback integration, have been frequent shortcomings in the drafting of other Plans by Member States. One of the latest examples of this are the consultations carried out around the recent NECPs, which in some cases have been taken to court.[12]

Most of the experts interviewed for this report, confirmed the same issue for the last round of the LTRS. There was little to no feedback on the proposals made and no certainty that the drafting teams had considered or taken into account their inputs. This appears to be the case in the vast majority of the national long-term strategies, with some not even mentioning a consultation process at all.

Learning 1

Having poor public consultations would leave out of the plans large amounts of practical experience gathered by organisations and authorities working on the ground, who are best suited to bring forward and protect the interests and rights of the most vulnerable. This could lead to repeating past mistakes and hitting familiar roadblocks. Besides that, if programmes linked to the NBRPs and SCPs will be designed, implemented or communicated by these local and regional organisations and administrations, it is essential that these stakeholders take ownership of them, which is hardly credible if their experience, uncertainties and opinions are not collected and properly addressed. Adequate and meaningful participation processes are also prerequisite for public buy-in to the NBRPs and SCPs policies.

b) Vague or inconsistent characterization for vulnerable households, energy poverty and worst-performing buildings

NBRPs and SCPs refer to different concepts when addressing vulnerability, using mainly vulnerable households, energy poverty and worst-performing buildings. These concepts are in some cases defined differently and in other cases not defined at all (See Fig. 7).

12 Didi, R. (2024). Taking flawed national energy and climate plans to court: lessons learned from previous cases, CAN Europe (p. 6-8) https://caneurope.org/content/uploads/2024/03/NECPS-litigation-report_CAN-Europe_March2024.pdf

EED	EPBD & NBRPs	SCF & SCPs
Vulnerable households		
The concept is not defined, although across the text of the EED,[13] both vulnerable households and vulnerable customers are mentioned when addressing energy savings obligations,[14] local heating and cooling plans and alleviating energy poverty.	(Art. 2.28) Households in energy poverty or households, including **lower middle-income households, that are particularly exposed to high energy costs and that lack the means to renovate the building that they occupy.**	(Art. 2.10) Households in energy poverty or households, including **low income and lower middle-income ones, that are significantly affected by the price impacts of the inclusion of greenhouse gas emissions from buildings within the scope of EU ETS and lack the means to renovate the building they occupy.**
Energy Poverty		
(Art. 2.52) A household's **lack of access to essential energy services**, where such services provide basic levels and decent standards of living and health, including adequate heating, hot water, cooling, lighting, and energy to power appliances, **in the relevant national context, existing national social policy and other relevant national policies, caused by a combination of factors, including at least non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes.**	(EED's Art. 2.52) A household's **lack of access to essential energy services**, where such services provide basic levels and decent standards of living and health, including adequate heating, hot water, cooling, lighting, and energy to power appliances, **in the relevant national context, existing national social policy and other relevant national policies, caused by a combination of factors, including at least non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes.**	(Art. 2.1) A household's **lack of access to essential energy services** that underpin a decent standard of living and health, including adequate warmth, cooling, lighting, and energy to power appliances, **in the relevant national context, existing social policy and other relevant policies.**
Worst Performing Buildings		

13 Recital (77) of the Energy Efficiency Directive 2023 states that Member States should define the concept of vulnerable customers, which may consider income levels, the share of energy expenditure of disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria.

14 Commission Recommendation (EU) 2024/1590 of 28 May 2024 on transposing Articles 8, 9 and 10 on the EED establish that 'The concept of vulnerable customers may include income levels, the share of energy expenditure of disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria.'

The concept is not defined, although it is referenced when addressing local heating and cooling plans.	The concept is not defined, but is frequently referenced, being an integral part of the application of the trajectories for the progressive renovation of the residential building stock. Member States shall include a definition in NBRPs.	The concept is not defined, and it is very rarely mentioned.

Fig. 7 *Definitions used to characterise vulnerable households, energy poverty and worst-performing buildings throughout the EED, EPBD and SCF. Sources: Directive 2023/1791, Directive 2024/1275 and Regulation 2023/955.*

Regarding these concepts, NBRPs are required to address the share of vulnerable households of each Member State, based on statistical sampling (Art. 3.2.a), but most of the indicators and targets of the NBRPs template (**Annex II**) refer to energy poverty and worst-performing buildings, around which both contextual information and targets are requested. Meanwhile **SCPs refer both to vulnerable households and energy poverty, encapsulating the latter always within the former, implying that definitions for vulnerable households should go beyond the definition for households in energy poverty.**

If we look at the experience of **LTRS**, there was a wide range of definitions for **energy poverty** across Member States. In most cases, countries used some of the indicators originally proposed by the Energy Poverty Observatory, such as the inability of households to keep their home warm, excessive energy consumption in relation to income, insufficient energy consumption, or having arrears on utility bills. Some Member States used different indicators, such as the amount of households who spend more than 8% of their disposable income on energy bills or people experiencing severe deprivation. Many of the experts interviewed agreed that there was an excessive focus on economic aspects.

At the same time, the segment of "**middle income households**" —who will also be affected by the EU-ETS 2 and could suffer from energy poverty — have not been properly recognized and ended up being left out of schemes that tackle energy poverty. Some of the interviewees also highlighted how much overlooked is "summer energy poverty", a phenomenon which is also on the rise due to the increasing temperatures caused by climate change. Despite its undeniable influence, **gender** has also been widely overlooked when addressing energy poverty (i.e. single parent families, with women as the sole provider and paying the brunt of the energy prices crisis).[15]Other social aspects and intersectionalities to take into account are marginalised communities, people with disabilities and more, which are currently not being measured when addressing energy poverty, despite their interconnections with the issue.

When it comes to **worst-performing buildings**, some Member States did not offer any definition in their LTRS, although most of them used a combination of different indicators like energy class, age and energy consumption when defining them. The interviewees also stated that some aspects that go beyond energy efficiency like **indoor air quality and thermal comfort** were missing from these approaches and they should be prioritised. This is because the latter have an important impact on households' living conditions and on their physical and mental health. Despite this, there are still few statistics on this topic, nor these dimensions will be included in the Energy Performance Certificates.[16]

Accessibility issues in buildings, in particular multi-family buildings, have a significant impact on those who live in them and are rarely measured. Lastly, **structural integrity** of buildings is also not being measured as much as needed in the context of worst-performing buildings (but also more broadly), leading in some cases to energy renovations that do not improve the structural performance of buildings that require said improvements.

15 Zamfir, I. (2023). Gender aspects of energy poverty. February. http://www.europarl.europa.eu/thinktank

16 A certificate, recognised by a Member State or by a legal person designated by it, which indicates the energy performance of a building or building unit, calculated in accordance with a methodology within a common general framework described in the EPBD. EPCs must indicate the primary energy use of buildings and can also include recommendations for the cost-effective improvement of the energy performance, the reduction of operational greenhouse gases emissions and the improvement of indoor environmental quality.

Likewise, technical aspects like **fire safety, habitability, the condition in which electrical installations are in and the presence of asbestos tend** to be overlooked when prioritising which buildings should be renovated, which can have important consequences in the future. In general, experts considered that there are data gaps related to aspects like heating equipment, and that in many cases available data is rather outdated, being in many cases more than ten years old.

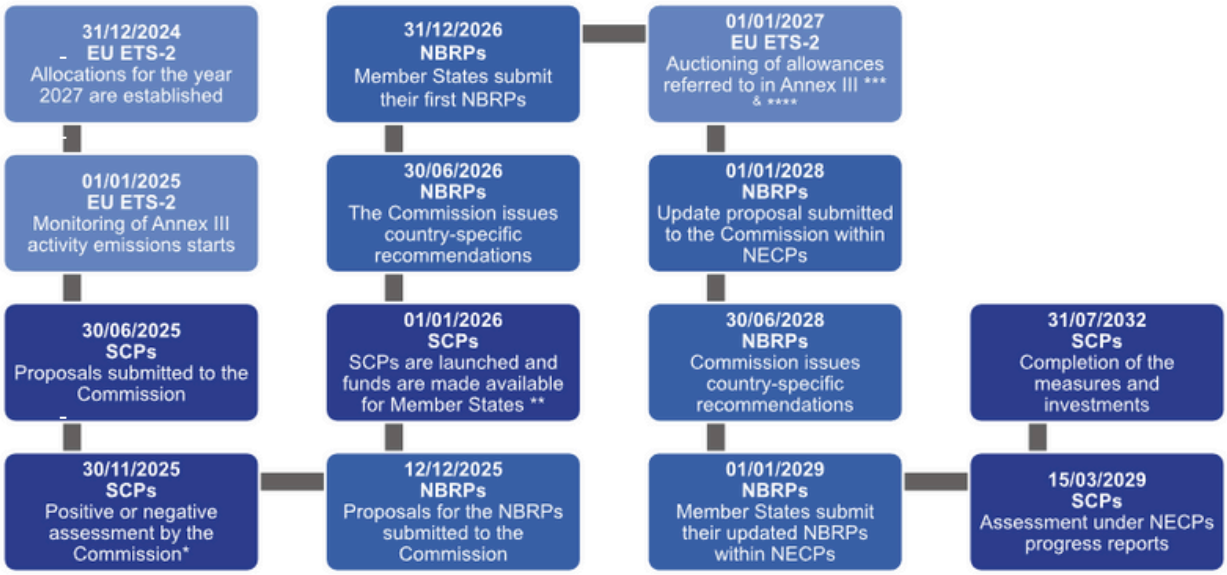
Learning 2

There is a risk of having excessively narrow definitions for these concepts, which would leave vulnerable segments of the population out of the targeted renovation programmes. For them, this could mean being left behind once the EU-ETS 2 would come into force, as no support to renovate their homes could be there. At the same time, having inconsistent definitions for the same concepts that both Plans cover could lead to different eligibility criteria for the programmes that stem from both plans, which would only add another layer of complexity to the programme application processes.

c) Split schedules

There is a six-month gap between the date by which the first draft of SCPs and NBRPs must be submitted, and at least one year between both Plans entering into force (See Fig. 7). **These gaps could lead Governments to sequence the drafting of both Plans instead of approaching their drafting in a coordinated and complementary manner.**

If this were to happen, it would be very complicated, if not impossible, for both Plans to be coherent and mutually beneficial. Even if NBRPs included measures outlined in SCPs, new measures or new approaches could emerge, which could be inconsistent with some SCPs measures. These could be the result of the implementation of new requirements imposed by the NBRPs, or more generally the EPBD.



* or five months after the submission to the Commission
** in case of a positive decision and the submission is made on time.
*** categories 1A1a ii, 1A1a iii, 1A3b, 1A4a and 1A4b defined in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
**** the application of EU-ETS 2 could be postponed until 2028 in the event of exceptionally high energy prices (Art. 30k)
Fig. 8 EU-ETS 2, SCP and NBRP timelines. Sources: Directive 2003/87/EC, Regulation 2023/955 and Directive 2024/1275.

Learning 3

The year gap between the start of the implementation of both Plans (2026 for SCPs and 2027 for NRBPs) makes it more difficult for the measures in NRBPs to prevent the impacts caused by EU-ETS 2, especially considering that both will have impacts in the building sector at the same time, although the impact of EU-ETS 2 will be immediate and the benefits from NBRPs will not.

D) Insufficient funding

If allowances reach high enough prices and EU-ETS 2 is not accompanied by a strong Renovation Wave (namely triggered by the EPBD implementation), the EU-ETS 2 has been suggested to have a bigger impact on households' energy bills than the 2022 energy crisis.[17] This impact will not only affect vulnerable households, but it can also cause households that are at risk of energy poverty or vulnerability to fall into such situations.
As said in the section related to the Social Climate Plans, the impact of EU-ETS 2 on vulnerable households can be balanced both through direct income measures or long-term measures, such as energy renovations.

These renovations can either save just enough energy to exactly offset the impact of the system, or can go beyond that, and actually improve households' living conditions. How much funding would the SCPs require to carry out these measures effectively? To answer this question, we would need to know the actual impact of the upcoming EU-ETS 2, based on the current residential buildings' CO2 emissions and possible allowance prices related to the latter.

When applying a 45€/tCO2 eq allowance[18] price to current CO2 emissions of households (Fig. 2),[19] **the expected bill increase will vary greatly from country to country** (Fig. 3), **going from 4,43€/year** —in the case of Sweden— **to 184,00€/year** —in the case of Luxembourg—, **with an average yearly increase of 71,79€ per household**.

17 Keliauskaitė, U.,B. McWilliams, G. Sgaravatti and S. Tagliapietra (2024) 'How to finance the European Union's building decarbonisation plan', Policy Brief 12/2024, Bruegel

18 We will be using the 45€/tCO2 eq allowance price announced as a release threshold by the European Commission for the first 3 years of application , in line with the research carried out by other colleagues.

19 A certificate, recognised by a Member State or by a legal person designated by it, which indicates the energy performance of a building or building unit, calculated in accordance with a methodology within a common general framework described in the EPBD. EPCs must indicate the primary energy use of buildings and can also include recommendations for the cost-effective improvement of the energy performance, the reduction of operational greenhouse gases emissions and the improvement of indoor environmental quality.

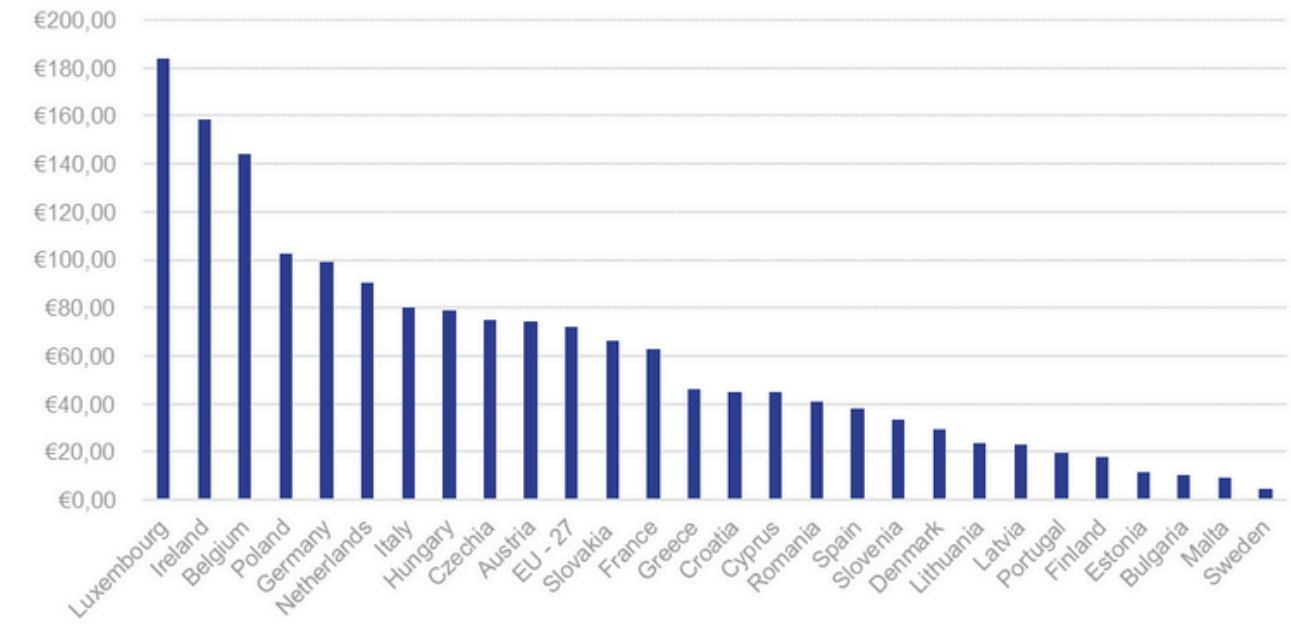


Fig 9: *Expected bill increase with a 45€/tCO2 eq allowance price throughout European Member States. Created by the author based on allowance price estimates and average household emissions through the 2014-2022 period.*

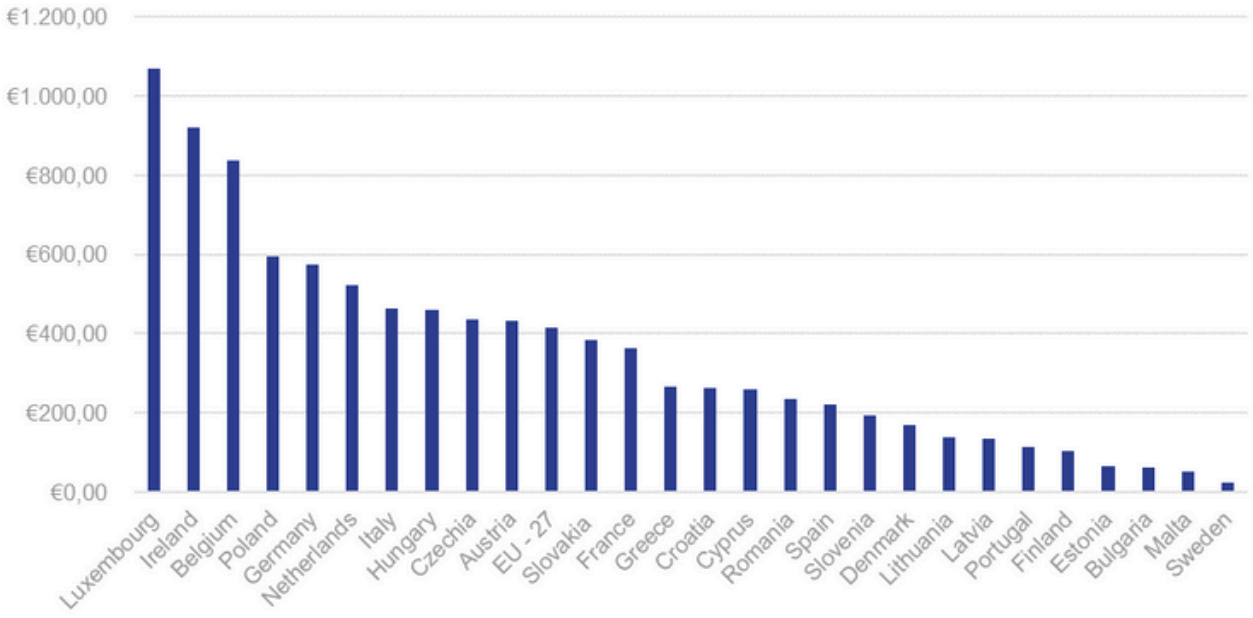


Fig 10: *Expected bill increase with a 45€/tCO2 eq allowance price throughout European Member States. Created by the author based on allowance price estimates and average household emissions through the 2014-2022 period.*

It has been argued that the resources provided by the SCF could be enough to compensate vulnerable households for the overcosts produced through direct income and active renovation measures.[20] Although, beyond bringing short-term relief to households, it could hardly be considered fulfilling the Fund's objective of contributing to a socially fair transition to climate neutrality.

Beyond the principles, it is important to once again reiterate that the Social Climate Fund will hopefully raise €86,67 billion, which won't cover only the buildings sector. Therefore, it is crucial to acknowledge that it will be impossible to solve all the inefficiencies of the existing residential stock via the usage of this sole funding stream.

20 Braungardt, S., K. Hünecke, Z. Philipps, D. Ritter and K. Schumacher (2022) 'The Social Climate Fund – Opportunities and Challenges for the Buildings Sector', Oko-Institute, p. 21-22.

Learning 4

Currently allocated funds for SCPs fall short in fulfilling their objectives regarding vulnerable households. It would therefore be irresponsible to rely solely on existing SCF funds to cover renovation measures targeted at vulnerable households, without providing additional funding through other sources.

e) Lack of new policies and measures to tackle energy poverty through housing renovation

While the SCF Regulation allows SCPs to contain existing measures to tackle energy poverty (Art. 4.1), **using the Fund to only finance existing measures could lead to Member States not designing, nor funding, nor implementing new policies and measures to tackle energy poverty**. This would hardly offset the impacts caused by EU-ETS 2 and reduce carbon emissions from this sector. Only in the case of existing very successful programmes, it could be beneficial to focus on allocating more funding to them, thus ensuring their continuity.

As mentioned above, direct income measures covered through the Fund (Art. 4.3), with the ceiling set at 37,5% of the country allocation (Art. 8), could directly offset this impact for households with low enough prices for emissions allowances. **Still, the currently announced €87,76 billion would allow for little housing stock improvements and would therefore not protect households against energy price increases or improve their overall living conditions on neither a short nor long term.**

In relation to NBRPs, although it may seem that they are tailored for vulnerable households, their requirements enshrined in the EPBD are actually broad, covering many aspects that are tangential to renovation. **This can easily lead to Member States to focus their NBRPs on other topics, while not giving to the requirements linked to energy poverty the focus and urgency they deserve.** As a precedent for this, and as said above, LTRS were already required to include relevant national actions that would contribute to the alleviation of energy poverty, which was fulfilled by most Member States,[21] but, in many cases, these were not specific enough or have not been fully implemented.

Learning 5

The lack of improvement in indicators such as the number of households unable to keep their homes adequately warm clearly indicates that the measures developed so far to improve the living conditions of vulnerable households have not been sufficient. Merely maintaining existing programmes is unlikely to change this trend, particularly considering the impact that the EU-ETS 2 will have on many of these households.

21 Castellazzi, L., Paci, D., Zangheri, P., Maduta, C., Economidou, M., Ribeiro Serrenho, T., Zancanella, P., Ringel, M., Valentova, M., & Tsemekidi Tzeiranaki, S. (2022). Assessment of the first long-term renovation strategies under the Energy Performance of Building Directive (Art. 2a). https://doi.org/10.2760/535845

f) Risk of uncoordinated policy leadership

Regarding the drafting and implementation of both Plans, having multiple and different teams from the public administration —or even different teams operating at different levels of detail (technical versus political) and from different standpoints (internal versus external)— managing the different Plans could easily lead to **uncoordinated programmes that bring even more uncertainty to the sometimes already uncertain renovation subsidy programmes and policies.**[22]

This lack of coordination could lead to scheduling issues for the programmes, with different start and end dates, differences in the administrative process (including type of documentation needed or requirements for applicants), differences in the approach to defining energy poverty or vulnerability —which would affect the process of choosing who is eligible to benefit from the aid—, and differences in the works that are financed by the programmes and in the percentage of coverage they offer. A lack of coordination at the national level would also affect the delivery of programmes from NBRPs and SCPs at the local level, making a normally difficult partnership even more difficult.

As for the evaluation and updating of both Plans, having discrepancies in the measures carried out, the targets pursued, or the leaderships behind them can lead to sub-par monitoring. In the worst case scenario, with bad or mild energy poverty reduction measures and poor results from vulnerable households' homes energy renovations, it would be difficult to detect what or which body has underperformed in the development of each one of the Plans (SCPs and NBRPs), **leading to unsuccessful evaluation, monitoring and updating processes**.

Having redundant and disjointed programmes from different Ministries, focusing on a range of measures ranging from those leveraging low-hanging fruit renovations, to deep energy renovations, establishment of one-stop shops and/or district/neighbourhood renovations programmes, would also make it much more difficult to pinpoint the best features of these different programmes developed under the Social Climate Plan and the National Building Renovation Plan.

Learning 6

Different Plans that cover similar aspects but are designed and implemented in an uncoordinated manner would greatly limit their potential benefits. Different administrative processes, different conditions and different deadlines for the same actions would make it difficult for local and regional organisations and administrations. It could also be extremely confusing for the population in general and vulnerable populations in particular, making it impossible for the full amount of dedicated funds to be spent.

Despite the numerous challenges that arise from the current policy framework and how similar topics were covered in previous Plans and Strategies, there is also a wide range of opportunities that could be exploited by Member States to make both Plans better than the sum of their parts.

22 The University of Cambridge - Institute for Sustainability Leadership. (2018). Renovation Roadmap: fit for the 21st century. https://www.cisl.cam.ac.uk/system/files/documents/renovation-roadmap-making-europes-homes-fit.pdf

6. Opportunities

a) A wide range of stakeholders for consultation processes and detailed templates

As mentioned above, the EPBD includes a template for NBRPs (Annex II) that introduce mandatory and optional elements that NBRPs should cover. Likewise, SCPs should include, at least, specific indicators and milestones (Annex IV) and follow the comprehensive template included in the SCF (Annex V). The **detailed structure of these templates should allow civil society organisations at national level to prepare specific topics for the Plans well in advance for the launch of public consultation processes. Besides that, the European Commission has been working on different guidance documents around SCPs and NBRPs which can be of great use by Member States.** It is important to note that the timeline to prepare SCPs and carry out public consultation is challenging. At the moment of this briefing, most Member States have only started to work on their drafting, which means that their finalisation and the public consultation for the SCPs should be performed, at the latest, during the first half of 2025.

The stakeholders that should take part of the public consultations mentioned in the requirements for each plan cover, at least:

- **Local and regional authorities** – included for both NBRPs and SCPs
- **Other socioeconomic partners,** including civil society and bodies working with vulnerable households– included for both NBRPs and SCPs
- **Relevant civil society organisations** – included for NBRPs
- **Youth organisations** – included for SCPs
- **Other stakeholders** – included for SCPs

Learning 1

Civil society organisations at national level are enabled by the EPBD and the SCF legal texts to be part of the Plans' participatory processes and have clear ideas and suggestions, thanks to their clear templates and overall structures, which would make their inclusion more convenient for public administrations.

b) Definitions and measures that help address the issues at hand

NBRPs and SCPs need to incorporate the definitions for vulnerable households and energy poverty, which should guide an important part of the targets and milestones for the programmes and the indicators that mark their eligibility. It is therefore essential that both Plans follow the same definitions, to avoid early divergences in the drafting processes.

The definition that was provided in the Energy Efficiency Directive recast of 2023 (Art.2.52) is a good starting point. Despite this, there is a need **for a more comprehensive understanding of energy poverty that allows the identification of energy poverty sub-types**. This deeper knowledge could allow us to tackle root problems that go beyond energy and climate and cover social, gender, labour, taxation, welfare, housing and health issues[23] (E.g. the difficulties faced by a single mother to work full time, a lack of access to cheaper energy sources in certain rural areas, a general poor energy infrastructure in different populations, a lack of affordable local renovation supply and racial discrimination in housing access can all lead to energy poverty and vulnerability, but have very different root causes and could be tackled most efficiently through different solutions).

Being able to introduce vulnerable households and energy poverty sub-types in the definitions used in both Plans would allow to broaden the scope of the measures implemented and the population targeted, leading to fairer renovation policies and programmes.

Besides that, both Plans have to introduce milestones and quantitative indicators to monitor their progress and issues to address through their measures. Several elements that are either mandatory or optional in NBRPs work towards the objectives of SCPs and vice-versa (See Fig. 9).

In NBRPs	In NBRPs & SCPs	In SCPs
Indicators		
Number of worst-performing buildings	Percentage of people affected by energy poverty	Number of vulnerable households
Proportion of disposable household income spent on energy		Number of buildings having undergone deep renovation
Population living in inadequate dwelling conditions or with inadequate thermal comfort conditions		Total useful floor area of buildings having undergone deep renovation
Number of one-stop shops (optional)		Replacement of fossil fuel heating installation with a renewable based appliance and/or a highly efficient installation on
Milestones		
Annual renovation rates for worst-performing buildings	Expected reduction of people affected by energy poverty	Reduction of number of vulnerable households
Expected creation of new jobs	Expected primary and final annual energy consumption	
	Expected operational greenhouse gas emission reduction	

23 Habersbrunner, K., Noreña Ospina, M., Wieser, P., Kuschan, M., Reichmann, F. (2024) 'Study on gender-disaggregated data on energy poverty', European Economic and Social Committee.

Topics to Address		
Protection and empowerment of vulnerable customers and the alleviation of energy poverty	Entities responsible for implementing, measuring and reporting on policies or measures	Geographic specificities, such as islands, outermost regions and territories, rural or remote areas, less accessible peripheries, mountainous areas or areas lagging behind
Creation of one-stop shops	Date of entry into force	'Do no significant harm' principle
Promotion of district and neighbourhood approaches and integrated renovation programmes at district level		Gender inequality (optional)
Awareness raising campaigns		
Increase in the climate resilience of buildings (optional)		
Accessibility for persons with disabilities (optional)		
Addressing the improvement of indoor environmental quality (optional)		

Fig. 11 *NBRPs and SCPs indicators, milestones and topics to address. Sources: Regulation 2023/955 and Directive 2024/1275*

The inclusion of vulnerable households in SCPs, which goes beyond households in energy poverty, allows for the inclusion of other aspects closely related to housing but not normally considered linked to energy poverty, (i.e. disabled people, which could lead to the implementation of accessibility measures, or respiratory diseases, which, for instance, could lead to the wider application of measures to improve indoor air quality, etc). This could bring more socially-centred measures to renovation policies' and programmes' targets, allowing us to bridge existing socioeconomic gaps, not only in NBRPs and SCPs, but also in the rest of national housing plans, strategies and programmes.

It is important for each Member State to find a balance between structural solutions that lead to long term GHG emission reduction in buildings (via deep energy renovations, supported by subsidies schemes accessible to the vulnerable segments of society) and short-term relief measures (i.e. social tariffs etc.).

Understanding and leveraging the overlap between SCPs and the NBRPs would underpin measures to support the renovation of vulnerable households' homes, enabling them not only to overcome the impacts of the inclusion of buildings in the new Emissions Trading System, but also to improve their economic conditions and physical and mental health in the long term.

Learning 2

Having the space to influence vulnerable household and energy poverty definitions developed at the national level could be an opportunity to detect the root causes that lead to non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes in each context, while ideally bringing up other issues, which could serve as gateways to renovation works, such as accessibility, improved IAQ and more. Likewise, having coherent Plans would lead to wider indicators, milestones and topics that should be considered, and which could end up being mutually beneficial.

c) Convergent design

Since both NBRPs and SCPs will have overlapping targets, indicators and measures, there is an opportunity to draft both of them in a consistent manner, besides working on a common characterisation framework.

Having a unique —or at least coordinated— leadership for both Plans **can increase the impact and efficiency when it comes to the communication of measures. The implementation of large scale actions or implementing ambitious programmes can benefit vulnerable households living in multi-family buildings**, which would possibly require some sort of incentive for non-vulnerable households living in the same building to overcome majority rules.

Coherent plans and programmes, with convergent approaches to the same issues that avoid unnecessary redundancies, would allow for **proper evaluation**, further developing those actions with the best results and reformulating those that have failed to meet their objectives.

Learning 3

Public administrations should understand that the building sector component of SCPs should be an integral part of NBRPs, without waiting for the NECPs review and update process to include both plans in 2029, which would arrive two years after the start of the EU-ETS 2. Moreover, considering the progressive reduction of the cap on EU-ETS 2 allowances —between 5,10% and 5,38% per year (Art. 30c)— NBRPs should schedule the decarbonisation of the residential sector with that emissions cap in mind.

d) Additional financial sources

By proposing SCPs that work in coordination with the vulnerable population protection elements of the NBRPs, the resources dedicated to them should be increased beyond the currently proposed EU-ETS 2 portion, incorporating new potential sources of funding (See Fig. 10).

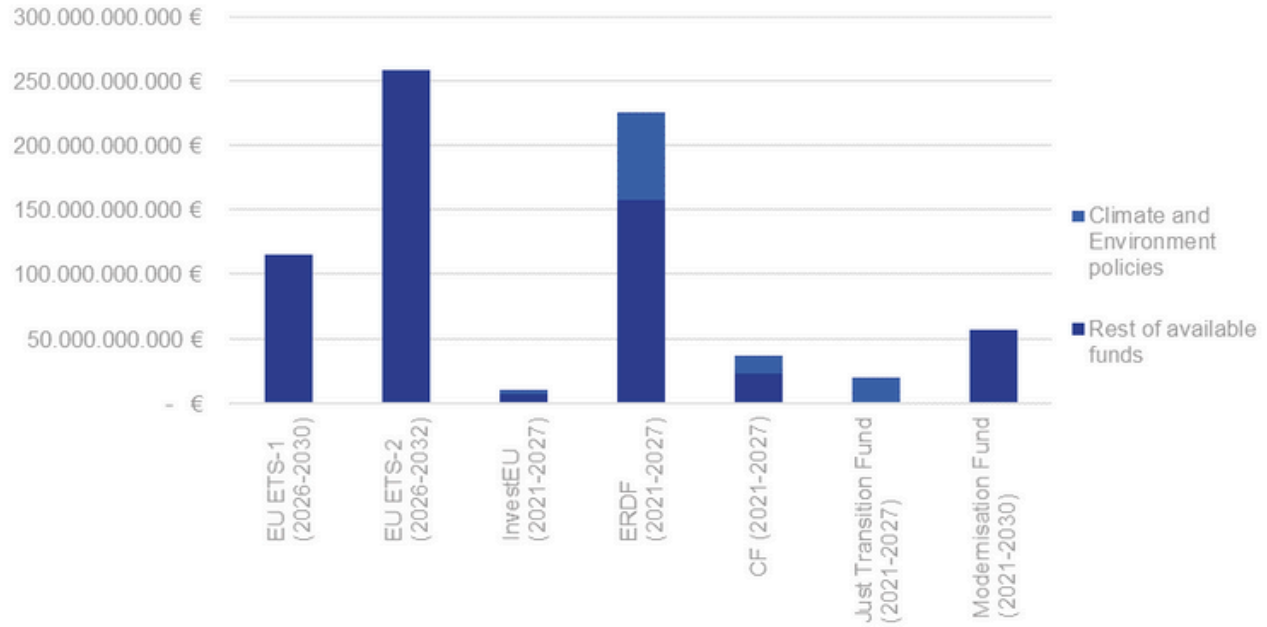


***Fig. 12** Funds compatible with NBRPs and SCPs and their budgets for certain periods. Source: EU funding programmes*

Revenues of the EU-ETS 2 could be used to a greater extent to mitigate its impact on both vulnerable households and middle-income ones. At the same time, considering that the revenues coming from the whole EU ETS (both EU-ETS 1 and EU-ETS 2) should be spent to finance the green transition, part of the EU-ETS 1 could also be spent on carrying out the programmes and measures established in both NBRPs and SCPs. In the European Union, Czechia is an example of a Member State that utilised the share of the revenues from the auctioning of the EU-ETS 1 to craft a subsidy programme,[24] the "New Green Savings Programme", which aims at supporting energy savings in buildings, especially in family houses and apartment buildings.

The less revenues produced through the EU-ETS 2 are dedicated to improving the housing conditions of vulnerable households, the more funds must be spent on direct income support measures. Without any demand reduction actions, in the long-term, one could see direct income support alone as direct revenues channelled back to fossil fuel companies, who were the ones passing the carbon tax on the energy bills of the affected households in the first place. Additionally, dedicating less funds to these housing renovations also lengthens the period during which direct income support measures increase, as more households are affected by the impacts of EU-ETS 2 for a longer time.

EU-ETS 1 had €38,8 billion auction revenues during 2022, €7,7 billion more than in 2021. €29,7 billion of these revenues have gone directly to Member States to be spent on climate and energy purposes.[25]

The European Regional Development Fund (ERDF) could also add some of the resources NBRPs and SCPs are currently missing. The ERDF was designed to strengthen economic, social and territorial cohesion in the EU, with two main objectives in mind: to reach a more competitive and smarter Europe (Policy Objective - PO1) and to carry out a greener, low-carbon transition towards a net zero carbon economy and resilient Europe (Policy Objective - PO2). €67,81 billion (30%) of the total for 2021 – 2027 of the ERDF should be allocated to projects that go in line with PO2, which could contain programmes and measures covered under NBRPs and SCPs.

24 https://portal.gov.cz/en/informace/new-green-savings-programme-INF-202

25 European Commission. (2023). Progress Report 2023 Climate Action Climate Action. P. 20. https://climate.ec.europa.eu/system/files/2023-11/com_2023_653_glossy_en_0.pdf

The Cohesion Fund (CF) provides support for certain Member States —those with national income per capita below 90% of the EU average— to strengthen the economic, social and territorial cohesion. The fund will have a €48.03 billion budget for the 2021 – 2027 period, although €11.29 billion of it has been transferred to the Connecting Europe Facility.

Both the ERDF and the CF are usually co-founded by beneficiaries, reaching maximum coverage amounts of around 85%. There should be an exemption for specific segments of the population to cover 100% of said investments, or having Member States commit themselves to finance the remaining percentages.

The Just Transition Fund seeks to benefit certain regions of the EU that are expected to be particularly impacted by the transition towards climate-neutrality. Even though the fund cannot be applied throughout most of the EU, it can help apply NBRPs and SCPs measures in the territories concerned within the fund. This fund has a €19,32 billion budget for the 2021 – 2027 period, of which €10,87 billion were brought under the NextGenerationEU.

The Modernisation Fund supports the modernisation of energy systems and the improvement of energy efficiency in 13 lower-income EU Member States,[26] supporting investments in energy efficiency, among other things. The expected €57 billion budget of the fund for the 2021 – 2030 period is calculated with a 70€/tCO2 eq pricing, as it is dependent on EU-ETS 1 revenues.

The InvestEU Fund will have a €10,28 billion budget in the 2021 - 2027 period, of which a 30% must be spent on Climate and Environmental policies. **Of the four policy windows that the fund should follow, two of them —a sustainable infrastructure policy window and a social investment and skill policy window— are well aligned with the NBRPs and SCPs objectives**. InvestEU is a loan-based facility which would make it incredibly difficult to target households that are vulnerable and/or are not willing to take a loan. Therefore, loan conditions should be sufficiently favourable and focused on households in non-severe vulnerability, also requiring endorsement by Member States.

Learning 4

Other funding sources compatible with NBRPs and SCPs are available, both at a EU and at a national level. Having both plans presented and designed in a coordinated manner can help leverage more funding from these different sources towards benefiting vulnerable households through housing renovation.

7. Policy Recommendations

a) Participatory processes that move us towards collaboration

To make the plans as efficient and resolute as possible, the various stakeholders involved in the renovation of housing and the work with vulnerable households must be involved from the outset. This would allow for the implementation of innovative measures, the gathering of knowledge and avoiding known pitfalls. This participation cannot be limited to a public consultation on an already drafted document in which, on most occasions, few modifications are seen before and after the consultation processes.

26 Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia

The **Dutch consultation process** was one of the few positive and noteworthy participatory processes coming from the LTRS experience. From February 2018 to June 2019, more than 100 stakeholders covered a wide range of climate-related topics, spread over five sectoral committees and three working groups, leading to a broadly supported Climate Agreement. The five sectoral committees were covering electricity, built environment, industry, agriculture & land use and mobility, while the three working groups dealt (in a transversal manner) with financing, innovation and labour market & training. Sectoral committees were presided by independent chairpersons, who regularly met in a Climate Council, which oversaw the coordination of the sectors and their consistency with the transversal themes.

Broad participation —also open to the public— was achieved, in which the process was given sufficient time. It was coordinated in a cross-cutting manner, with key aspects from each line of work dealt by independent leaders, who were responsible for the progress and coordination of the negotiations with the others.

Lithuania stands as another positive example, this time regarding their NECP public consultation process. This created different working groups early on in the drafting process, providing facts and analyses for different policy strategies. Besides that, all meetings, including relevant materials and participant lists were published on online platforms providing transparent and timely information to all parties. **Transparency and active communication during participatory processes are essential for the involvement of stakeholders and for proper accountability of the final documents produced.**

Having civil society organisations and networks actively participating in both public consultations, would allow them to monitor the coherence between the two Plans. Both environmental and social organisations should be considered, to be able to build bridges across topics. In the case different ministerial teams draft the Plans, and/or especially if the design of one of the two Plans (or both) is outsourced, members of the respective ministerial teams should also be present in the participatory processes and the discussions related to them.

Support programmes for residential energy renovations launched in recent years have allowed testing different solutions and approaches to renovation. They have also provided insights about which insurmountable barriers for vulnerable households could arise for these programmes, leading to well-intentioned programmes, but ultimately with minimal implementation. **Including local organisations and local authorities in the drafting process, can help detect and avoid known pitfalls, because these have most frequently dealt directly with these barriers** (i.e. not covering all costs linked to renovations, 'first come, first served' renovation programme models or ex-post financing). .

In light of the above, inclusive participatory processes should consist of:

- A clear statement of the **objectives and scope** of the process, as a way of anchoring the expectations of the stakeholders involved;
- A **wide variety of stakeholders need to be involved**, particularly aiming to reach vulnerable communities that can bring their own experiences to the process;
- Organisation of sessions **covering different stages** of development, starting from the establishment of the framework, the drafting of proposals and the ratification of the resulting document;
- A methodology and outline of the sessions and/or documentation to be discussed that are **provided prior** to said sessions;

- Working with **different sectoral working groups and policy scenarios** that can allow reaching adaptative policy that can respond to existing uncertainties;
- **Bi-directional dialogue** around the proposals made by the participating stakeholders.
- **Feedback and justification about** the inclusion or lack thereof of the various suggestions made;
- A **mediation and facilitation** team that is external to the administration, so that it participates as a third party stakeholder in the process.
- **Make use of other existing spaces for participation**, which would allow to improve upon existing and well known dynamics and would ease policy coherence.

Recommendation

'Despite difference in the timelines, ensure that consultations processes are always coherent and complementary with one another'

Considering the timelines that both Plans should follow, participatory processes linked to NBRPs should not be delayed, but should aim to coincide or build upon the SCPs participatory processes. Demands on these processes will always depend on the context and the state of the art of the latter in the different Member States. Ideally, across the drafting process of the National Building Renovation Plans, there should be specific sessions to discuss measures to alleviate energy poverty, which could cover both Plans, carried out in a coordinated manner by the public administrations involved, with the presence of local authorities and both environmental and social organisations too. If the consultation processes for both Plans are not carried out simultaneously, sessions covering the overlap between SCPs and NBRPs, and/or how the measures of the SCP could benefit the objectives of the NRBPs' should also be carried out.

b) Intricate measuring and characterising methodologies and tools

Broad-brush measurement and characterisation of the issues at hand lead to coarse programmes that would fail to develop efficient measures to solve existing root problems preventing vulnerable households from renovating their homes.

Methodologies for measuring the indicators established from the definitions of vulnerable households, fuel poverty and worst performing building should be:

- **Disaggregated**, so that the overlap of the different indicators in question can be clearly measured.
- **Intersectional**, considering the interrelationship between vulnerability, energy poverty and worst-performing buildings, as well as aspects related to gender, functional diversity, age or marginalised communities.
- **Spatialised**, making it possible to locate and study the clustering of the different issues as precisely as possible.
- **Systematised**, to ensure coherence when establishing the eligibility criteria of the different programmes to ultimately enable adequate distribution of their budgets.

An example of the above could be the methodology used to define energy poverty in the Spanish Long Term Renovation Strategy. This was developed by a research group of the University of Madrid.[27] The methodology correlated energy consumption and income levels, allowing for a better breakdown of the different types of energy poverty in which people could find themselves. In turn, a breakdown of these different cases was made in relation to the building typology of their dwelling, the size of the municipality, the climate zone and the region in which they lived making the disbursement of funds more coherent and tailored-made to the segments of population most in need.

In this case, an in-depth study of different dimensions of energy poverty, linked to a comprehensive characterisation of the building stock, allowed for the development of different packages of measures that could be developed by households in energy poverty.

Another example can be found in Ireland, where the Irish Energy Authority uses data coming from a database of EPCs which was developed in 2015, under the EPISCOPE project.[28] Within this database, a mapping tool was developed as a pilot project in the northern part of the city of Dublin. This interactive map overlaps different aspects related to buildings and its inhabitants, mainly walls, windows, roofs and planters, but also energy poverty indicators or energy supply. Data is not aggregated on an individual building level, but in small areas and administrative units.

These mapping tools provide relevant data for local policy making and strategies to alleviate energy poverty or invest in infrastructure, particularly at a district level, which is particularly useful in densely populated areas in which vulnerable households are clustered in certain areas.

Lastly, and still in Ireland based on the good data available, the **Better Energy Warmer Homes Scheme** finances free-of-charge energy efficiency measures for homeowners receiving social welfare payment. A variety of energy efficiency upgrades are offered through this scheme. The upgrades recommended depend on different indicators, such as the construction year, size, typology and condition of the property, and cover interventions usually linked to low-hanging fruit renovations or to deep renovations, depending on said indicators.

These upgrades are carried out following a detailed table,[29] which systematises the process based on good data available, greatly improving its replicability throughout Ireland or other Member States with similar building typologies.

Recommendation

"Take into account the granularity and intersectionalities linked to energy poverty to build consistent methodology that address data gaps"

Member States should provide transparent and broad methodologies, tools and reports that solve existing data gaps and allow NBRPs and SCPs to properly assess the situation we are in with regard to social-economic vulnerability, energy poverty and worst-performing buildings. Adequate output estimates and tailor-made programmes can only be designed through this kind of evaluation.

27 Sánchez-Guevara, Carmen, Ana Sanz Fernández, and Agustín Hernández Aja, (2014). "Income, Energy Expenditure and Housing in Madrid: Retrofitting Policy Implications." Building Research & Information 43 (6): 737–49. doi:10.1080/09613218.2014.984573.

28 Hanratty, M., Sheldrick, B., Roarty, C., & Badurek, M. (2015). National Report of the Irish EPISCOPE Pilot Action: Monitoring the energy refurbishment rates for the housing stock of the Northside of Dublin City. P.31-36. www.episcope.eu

29 SEAI. (2015). Better Energy Homes Scheme. Sustainable Energy Authority of Ireland. P. 13. http://www.seai.ie/Grants/Better_energy_homes/

c) Swift Social Climate Plans preparation

The SCF Regulation allows for the submission of SCPs to the European Commission by 30 June 2025, while the EPBD sets the deadline for draft NBRPs in December 2025. Following this submission, the Commission will review each Member State's Plan and may assess it positively or negatively. **This means that, in the best case scenario, if the submission period is achieved as fast as possible, Member States could start developing the national and regional regulatory frameworks linked to their Social Climate Plans as early as September 2025 —which would allow them to start as soon as the funding was transferred— and implement their National Building Renovation Plans as of January 2027.**

Experience with the renovation programmes of the Recovery and Resilience Fund has shown how long the process can take to reach the regional and local levels. In the case of some Member States, it has taken months or even years from the establishment of the policy basis at national level to their landing at regional and/or local level.

Not only can the transition of the programmes across the national, regional and municipal levels be costly, but also their implementation in the different sectors of society could be slow, particularly in the most vulnerable sectors. After years of implementing subsidies for energy renovation, there has been little improvement in the rates of the latter, for which in many cases there is no reliable data. The hands of public sector workers, as well as the channels of communication with the population,[30] are already sufficiently full, which makes the processing and knowledge of the subsidy difficult.

Recommendation

"No delays allowed: start as soon as possible and always respect the deadlines for the submission of both Plans"

In order for the renovation subsidies and programmes linked to the Social Climate Plan to be effective and take effect before 2027, proposals should never be delayed beyond the deadline set by the Social Climate Fund Regulation (June 2025). Likewise, programmes linked to the SCPs should be launched as soon as possible once they have been passed. This would require not only having the SCPs themselves drafted, but also some of the policies necessary to launch the different programmes should also be prepared during the drafting and evaluation process of the SCPs. Having the detailed templates regarding the consultation process, indicators and measures would allow civil society organisations at national level to take the first steps in proposing aspects that can be included directly in the Plan.

d) Planning nationally to develop local actions and advice

When discussing both tackling and measuring energy poverty, many of the interviewed experts brought up the necessity to **work with social services and municipalities**. These institutions have first-hand information on the vulnerability of the population, particularly at the local level, and can successfully address energy poverty when planning and implementing programmes.

30 The State of the Energy Union Report 2023 stresses the lack of reporting regarding housing renovation from Member States (only Bulgaria, Croatia, Czechia, Estonia, Ireland, Lithuania, Luxembourg and Hungary reported on renovation rates for 2021), but available data show renovation rated below 1% for the residential sector.

Many sectors of local governments as well as local organisations are key in identifying energy poverty and vulnerable households, providing advice and support, and developing successful renovation programmes. Since most disenfranchised groups may find it difficult to access information about renovations, it is essential to develop one-stop shops or peer-to-peer approaches at the local and community level.

Integrated home renovation services, developed at a local level and in proximity to the most vulnerable areas, should be articulated with these stakeholders to ultimately inform and facilitate housing renovations aimed at vulnerable households. There should also be resources allocated (i.e. communications campaigns) to inform the local population about the existing subsidies, the social, environmental, economic and health benefits achieved through renovation and further energy advice that can help households lower their energy consumption.

Croatia is developing its Programme for Elimination of Energy Poverty for 2021-2030 through **local energy advice points that provide adequate information and recommendations to energy poor households and those at risk of energy poverty.** These places also advise households on the possibilities for co-financing activities in this field. Energy efficiency measures for energy poor households are co-financed, and cover actions such as the replacement of household appliances with new systems and the improvement or replacement of heating systems with environmentally, economically and energy-efficient ones.

Accompanying renovation measures with appropriate advice, not only to improve the performance of homes, but also the behaviour of households, is a necessary practice in the case of households affected by energy poverty.

In **Poland, the 'Stop Smog' programme** targets energy poor people living in detached buildings. **The scheme is addressed to all municipalities that can demonstrate poor air quality on their territory, like having air pollutants that exceed EU standards and is carried out by said municipalities**. The programme covers the replacement of heating equipment, decommissioning of heating equipment or systems and connection to district heating, electricity or gas networks.

As mentioned above, air quality tends to be overlooked, but is particularly relevant in countries with heating systems that make use of more polluting fuels (such as coal), which can hinder living conditions of those living in or around buildings with said systems.

The ***Mon Accompagnateur Rénov'*** programme (My Accompanying Renovation') in France introduces tr**usted interlocutors** to support households through their renovation processes. They give assistance on technical, administrative, financial and social issues. It is involved at all stages of the home energy renovation project. The programme is run by the National Government, in conjunction with local authorities, and managed by the National Housing Agency (Anah)
The programme follows a very clear path with:

- On-site visits to assess the housing and household situation
- Energy audits
- Support in the preparation of the draft work
- Assistance in the selection of estimates
- Definition of the financing plan
- Preparation of subsidy applications

- Financing of the remaining charge
- Advice on the monitoring of the project throughout the construction process

This programme also provides enhanced technical and social support, in response to specific needs such as situations of energy poverty, advanced housing degradation and the need to adapt housing to loss of self-sufficiency, giving wider support for vulnerable households

Recommendation

"Enabling a successful roll-out of the Plans starts from the local level"

SCPs and NBRPs should take into account the different sectors that could be activated at the local level to successfully develop the proposed programmes, and plan for the resources that local administrations will need to roll them out. Adequate funds, coordination and cross-learnings are needed to enable local administrations and organisations to meet the challenges ahead of us.

e) Innovative and carefully designed funding schemes

In addition to making use of the financing opportunities offered by the European funds (on top of revenues generated by the ETS-1 and ETS-2) mentioned above, SCPs and NBRPs should implement financing mechanisms for renovations that can be assumed by households that are not in situations of severe vulnerability. This would allow for a more efficient use of public resources, allowing them to be focused to a greater extent on the population without any capacity to renovate their homes.

- **Pay-as-you-save schemes** can be useful to help households in situations of non-severe vulnerability to renovate their homes. To do so, these schemes must be based on measured savings, avoiding possible over-costs caused by theoretical energy savings calculations.
- **Recurring funds** consist of renovation subsidies given to households to renovate their home, which have to be paid back when the property changes ownership, recovering the investment made by the administration. This model can be useful to make renovation programmes more viable in the long-term.
- **Energy Savings Certificates** are based on the energy efficiency obligations imposed by the public authorities on Obligated Parties.[31]These are electronic documents that guarantee that, after carrying out an energy efficiency improvement, a new final energy saving equivalent to 1 kWh per certificate has been achieved, which can be bought.
- **Increasing the floor area** of buildings in low-density areas could provide economic benefits that could be used to cover the renovation work carried out. These additional volumes could be located next to or on top of existing buildings, depending on the building typologies and the urban environment.

The **Flanders** region developed the 'Rental and insulation premium' for dwellings inhabited by vulnerable private tenants, which is a collective that is rarely covered by energy poverty programmes. In addition to a flat-rate contribution of 200€, the owner receives 20€/m² for roof insulation; 12€/m² for wall insulation; 85€/m² for high efficiency windows. In addition, an emergency fund was set up for certain target groups who do not have sufficient financial resources to carry out energy efficiency renovations. An interest-free

31 Obligated Parties are energy distributors, retail energy sales companies or transmission system operators, which are bound by the national energy efficiency obligation schemes (Art. 9).

loan of up to 25,000€ can be granted to the emergency buyers, poor owners who are required to purchase a poor quality dwelling. Only when the home is disposed of, or at the latest after 20 years, the loan must be reimbursed.

This kind of recurring funds can be a very useful tool to make renovation programmes viable for public administrations in the long run, building upon the increase in value that energy renovations produce on buildings.

The **ABRACADABRA project** focuses on the creation of a substantial increase of the real estate value of the existing buildings through a significant energy and architectural transformation. The project proposes volume add-ons that can be included in different positions of the renovated building (top, aside, façade, ground floor or as an assistant building) and can increase the value of the whole building which can be leveraged to finance the renovation.

The project delivered different technical, financial and regulatory toolkits to help develop this kind of add-ons in different Member States, which can also help to increase population density in spread-out areas.

Recommendation

"Prioritisation of public funds for the most vulnerable and innovative financial support to multiply societal benefits of energy renovation of buildings"

NBRPs and SCPs will have to make extremely efficient use of available resources, particularly if they are unable to secure additional funds for their development. In addition to prioritising the use of public funds (especially coming from the SCF) to benefit the most vulnerable households, imaginative solutions will be needed to reach as many households as possible.

f) Minimum energy performance standards at the core of both plans

The implementation of Minimum Energy Performance Standards (MEPS) for non-residential buildings and their non mandatory application for homes within the context of the trajectory for progressive improvement of the residential sector will be the next big implementation challenge for Member States. Even if MEPS, if well implemented, could have the potential to support the entire vulnerable population, in particular vulnerable rented households against energy poverty, because of their non-mandatory nature,[32] in the legal text of the EPBD, it could be possible that many Member States may either avoid implementing them or applying them in a very lax manner.

For this tool to be effective, a comprehensive policy design is needed to support its implementation. Social safeguards are needed to prevent the renovation of rented housing by vulnerable households from excessive price increases, which would lead to gentrification processes already experienced in some areas of the European Union.

At the same time, renovation support programmes should be communicated to the vulnerable population long before MEPS come into effect. MEPS without adequate support, in particular for vulnerable households, would jeopardise social acceptance for energy renovation of buildings, generating a backlash that could further delay climate action within the building sector.

32 Although the initial draft of the EPBD published by the European Commission in December 2021, in the version finally approved, the compulsory nature of MEPS in the residential sector was discarded and replaced by the application of a trajectory for the progressive renovation of the residential stock (Art. 9.2).

As an example of residential MEPS on the ground, we have France, which adopted a decree concerning the energy efficiency criterion concerning the definition of decent housing in metropolitan France, whereby, as of January 2023, **housing with an energy consumption of more than 450 kWh/m² per year is not considered 'decent housing' and therefore cannot be rented**. The government's plan is that this threshold will gradually increase, reaching F in 2025, E in 2028 and D in 2034. **This measure improves the conditions of vulnerable households in rented housing, although it requires controls and social safeguards to prevent these renovations from leading to evictions due to rent increases.**

This measure and its whole trajectory was already announced in a law passed in 2019, which gave enough time to landlords to prepare for it, reducing the social uproar that the measure could produce and allowing the government to prepare measures that could ease the renovation process of the rented residential stock.

Recommendation

"Use regulatory tools to create a clear roadmap for our buildings, with special focus on the worst-performing ones"

Minimum Energy Performance Standards can and should be the backbone around which NBRPs and SCPs establish their measures to tackle energy poverty through housing renovation. MEPS could provide certainty about the objectives to be achieved, while communicating the subsidies available and the technical and social support mechanisms that will enable us all to reach those objectives.

g) Empowering large scale renovations

Renovation processes should introduce improvements that go far beyond energy efficiency (such as improving the accessibility of homes and/or enable or being part of urban regeneration processes), if the conditions are in place and the necessary networks are formed.

To exploit the additional benefits of renovation to their full potential, housing renovation schemes should promote community sustainability in the areas in which they are implemented. This would allow linkages to be made between improvements in residential buildings and possible improvements in the different communities living in their surroundings. The lack of action over the years by public administrations in whole areas of urban and rural territories has led to urban degradation, which goes far beyond energy efficiency issues. These social problems can be tackled through "district renovations" if they are approached from a social perspective that manages to improve the living conditions of their inhabitants in all aspects.

These governance structures must take into account the necessary work of mediation within the processes of renovation management, including within the work teams' professionals with a technical and social profile, who are familiar with the reality of the population in a situation of vulnerability.

As an example of this approach, the Santa Coloma de Gramenet (Barcelona) neighbourhood's conservation and renovation project consists of the urban renovation of an area of 360 homes and 26 retail spaces, built between 1968 and 1974. The area had experienced a fast and unplanned growth turning into several urban problems. One of the main objectives of the intervention was the improvement of the quality of life and health of the neighbourhood's inhabitants. They were mainly elderly people with low incomes that suffered in many cases from energy poverty due to the lack of buildings' energy efficiency.

The renovation project had to combine different stages in which the improvement of the thermal comfort, the identity and the urban landscape were very present. All these activities were complemented by a complex process of management and mediation between the local administration and homeowners' associations, in order for the disbursement of funding and interventions to happen. Mainly, the programme followed three progressive funding methods based on the income of the households:

- The first method of payment corresponded to a "50-50" approach (where 50% of the cost was covered at the beginning, and the remaining 50% upon completion of the project) applied to organisations and companies or residents who did not adhere to two next methods.
- The second method of payment was made in 60 monthly instalments over five years, for individuals who could pay by direct debit.
- The third method is applied as an inscription in the registry note, for those owners residing in the property, with an annual income of less than €20,000, which would be returned on the change of ownership of the property.

The project also created from the beginning of the process a Local Technical Office, located in the neighbourhood itself, which allowed the residents to solve their problems and the municipal technicians to know in detail, and on the ground, each of its particularities. This was made possible thanks to the formation of a large multidisciplinary team made up of 18 people from the urban planning area, the personal services area, the internal and economic services area, the local technical office and external personnel under service provision contracts.

Another example could be linked to **Energiesprong**, which carries out district renovation projects through the use of a modular approach and new technologies such as prefabricated facades, insulated rooftops with solar panels, smart heating, and ventilation and cooling installations.[33] These industrialised solutions benefit greatly from intervening in more or less homogeneous areas, where solutions can be standardised and produced on a certain scale.

Renovations are financed by future energy cost savings plus the budget for planned maintenance and repairs over the coming 30 years. This allows residents to keep the same cost of living. Due to the systems implemented, renovations take a very short amount of time (usually between seven and 10 days) and achieve a 70-80% reduction in the building's energy use. Since its introduction in 2011, more than 10,000 projects have been completed in seven countries across Europe and North America, highlighting the scalability of the methodology.

Recommendation

"Support larger scale energy renovation projects that leave no one behind and improve the functioning of neighbourhoods and districts"

Including and coordinating, via the SCPs and NBRPs, renovation programmes at a larger scale can maximise the benefit of energy renovations of buildings and enable a positive spill-over effect into broader urban/rural areas. Building upon energy efficiency improvements of homes in fact, can multiply socio-economic benefits for broader realities, ensuring for instance regeneration and revitalisation of decaying neighbourhoods and districts, to ultimately deliver climate resilient and inclusive cities. To do so, large-scale integrated neighbourhood/district renovations must take into account the voice of the inhabitants of the interested areas, as this would lead to the greatest possible additional benefits.

33 https://caneurope.org/renewable-heating-in-the-rental-sector/

8. Conclusions

IIn conclusion, the newly adopted Energy Performance of Buildings Directive (EPBD), and its National Building Renovation Plans (NBRPs) have the potential to be a transformative tool in laying out a decarbonisation pathway that is socially just and climate ambitious. If effectively implemented, the EPBD can help ensure that renovations not only meet our climate goals but also prioritise support for the most vulnerable households. The alignment of the EPBD with the forthcoming EU Emission Trading System (EU-ETS 2) and the establishment of a Social Climate Fund (SCF) are critical steps in this direction. The Social Climate Fund aims to provide dedicated financial resources to support those most affected by energy and transport poverty, ensuring that no one is left behind during this transition.

As part of the two pieces of legislation, the National Building Renovation Plans and Social Climate Plans must work in tandem to ensure that ambitious, inclusive policies are developed which protect vulnerable households while promoting a Paris-Agreement compatible energy transition of the built environment. To this end, it is essential to learn from previous planning tools, such as the Long-Term Renovation Strategies (LTRS), and to ensure adequate financial support is readily available and earmarked for these efforts.

IOur recommendations highlight several key actions to enhance the effectiveness of these Plans:

- **Coherent, transparent and truly inclusive consultation processes:** Ensure that consultation processes for both the NBRPs and SCPs are aligned and mutually supportive, despite differing timelines.
- **Comprehensive calculation methodologies:** Develop a consistent methodology that takes into account the granularity and intersectional aspects of energy poverty, and address existing data gaps.
- Timely action: Begin the preparation as soon as possible and without delays, adhering strictly to deadlines for Plans' submissions to maintain momentum.
- **Enhance the role of the local level:** Recognise the importance of local level authorities and actions as a foundation for a successful and inclusive rollout of plans.
- **Better targeted funding:** Prioritise public funds for the most vulnerable populations and explore innovative financial mechanisms (i.e. recycle of the EU-ETS 2 revenues amongst others) that enhance the societal benefits of energy renovations.
- **Strong regulatory framework:** Overall leverage the newly revised EPBD and utilise regulatory tools, such as Minimum Energy Performance Standards, to establish a clear roadmap for building renovations, with a focus on the least efficient buildings.
- **Support large-scale integrated projects:** Facilitate larger-scale energy renovation initiatives that not only improve energy efficiency at building level, but elevate and couple it with other actions that aim at enhancing the overall functioning of neighbourhoods and districts.

By adopting these recommendations, Member States who are, or soon to be, facing the drafting of both NBRPs and SCPs, can create a comprehensive approach to tackling energy poverty that ensures the buildings transition contributes to the achievement of our Paris-Agreement goals and achieves a fair and just transition for all households. In doing so, it will build a more climate resilient, inclusive and sustainable energy future for Europe.

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