POLICY BRIEF

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Is the EU's building renovation wave 'fit for 55'?

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The EU's Green Deal set the goal for the Union to become climate-neutral by 2050. In this, the buildings sector plays an important role: buildings are responsible for about 40% of the EU's total energy consumption and 36% of carbon dioxide emissions.[1]

The EU has a rich and diverse historical building stock. 85% was built before 2001[2] and is still mainly heated by fossil fuels,[3] giving ample opportunity for renovation and emission reductions. Yet despite the opportunities, more must be done to increase energy and carbon efficiency gains, as well as the electrification and integration of renewables in buildings.

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The European Commission's recent Renovation Wave Strategy is an attempt to mark a turning point. It proposes speeding up the renovation of buildings while also making them more energy-efficient and less carbon-intensive over their entire lifecycle. The Commission's new Fit for 55 package, composed of 12 proposals for climate-related legislation to reduce net emissions by 55%, will be essential in supporting renovation efforts as it affects energy efficiency, electrification and the integration of renewables.

This Policy Brief analyses the status of and legislative framework for energy efficiency and electrification in the EU's building stock. It does so on the basis of a selection of relevant directives and regulations under review in the Fit for 55 package. It argues that the reviews in the package should go beyond merely adjusting existing targets; they should also scrutinise the governance framework to increase energy efficiency and electrification in the buildings sector.

BACKGROUND: THE HIGH POTENTIAL FOR ENERGY EFFICIENCY AND ELECTRIFICATION

The EU's support to increase the speed of renovation creates opportunities to reduce buildings' emissions effectively. Energy efficiency and electrification will be "the two main drivers of decarbonisation of the buildings sector".[4]

Energy efficiency

The buildings sector will make an important contribution to energy efficiency in the EU. But for now, renovation rates remain low and, more crucially, often do not improve energy efficiency in any meaningful way. The Commission estimates that about 11% of European buildings are renovated to some extent per year, leading to a mere 1% annual energy renovation rate and only 20% of renovations improving energy efficiency significantly.[5] Deep renovation – where energy consumption is reduced by at least 60% – represents only 0.2% of building stock renovation per year. In most cases, renovations lead to insufficient emissions reduction because they do not promote the best energy-efficient and low-carbon solutions.

The EU's Energy Efficiency Directive 2012/27/EU (EED) set the target of 20% overall improvement in energy efficiency by 2020 and 32.5% by 2030. The EU fell short of its energy efficiency goal for 2020 by 3%,[6] having reduced its energy consumption only by 17%. Again, it is not set to achieve its 2030 ambition, with a projected reduction in energy consumption of 29.4%.[7]

Renewables and electrification

In addition to improving energy efficiency, switching energy sources from fossil fuels to electrification and renewables will play an important role in reducing buildings' emissions. Currently, only around one-quarter of energy use in the EU's buildings is sourced from renewables, with fossil fuels still accounting for around half of the sector's energy consumption.[8]

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Since space heating (i.e. heating of indoor environments) alone accounts for over 60% of energy consumption in buildings,[9] it offers the most opportunities to reduce building emissions alongside qualitative insulation. The EU foresees a growing role for electrification in space heating, mainly in the form of heat pumps, rising to a 40% share by 2030 and 50% to 70% by 2050.[10] However, this ambition is still far from reality: renewable energy in the heating and cooling of buildings only represents about 21% of total heating and cooling demand. Furthermore, only a quarter of this is produced from heat pumps.[11]

The integration of renewables and electrification into buildings largely depends on price signals for consumers, which differ between energy sources (i.e. fossil fuels, electricity), as well as between member states. National taxation impacts the price balance between fossil fuels and electricity significantly.[12] Another aspect are the continuing subsidies for fossil fuels: the EU remains the fourth largest subsidiser of fossil fuels in the world.[13] Subsidies for fossil fuel heating systems still exist in 17 member states,[14] contradicting the Union's goal of achieving climate neutrality by 2050.

STATE OF PLAY: THE RISK OF INEFFECTIVE IMPLEMENTATION

To tackle these challenges of energy efficiency, renewables and electrification in the buildings sector, the EU's renovation wave aims to at least *double* the annual renovation rate from 1% to 2% over the next decade. The Commission also plans to increase the number of deep renovations. Finally, the Renovation Wave Strategy aims to speed up the integration of renewables in buildings. The new legislation to be proposed under the Fit for 55 package will particularly affect these aspects of the renovation wave.

Energy efficiency in Fit for 55

The Commission is currently revising the EED and Energy Performance of Buildings Directive 2010/31/EU (EPBD) to align them with the renovation wave and the target to reduce greenhouse gas (GHG) emissions by at least 55% by 2030. However, as mentioned, the EU is not set to meet the 2030 target of 32.5% overall improvement in energy efficiency.

Both this general EU target for energy efficiency and more specific national targets are not binding.[15] Instead, the EED requires member states to submit indicative national targets for energy efficiency and report back in their National Energy and Climate Plans (NECPs).

There is a risk that member states will still not achieve their respective energy efficiency objectives in the upcoming EED review. Member states do not necessarily account for the cost-effectiveness of energy efficiency investments sufficiently.[16] Instead, they often fund 'business as usual' upgrades rather than, for example, deep renovations, which are a more cost-effective investment.

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Moreover, due to the member states' diverse approaches to implementation as well as measurement, comparing the results and effectiveness of their policies is tricky. Stronger monitoring, starting from common definitions and eventually binding EU measures, could play a role in ensuring that energy efficiency goals are actually achieved.

People can be incentivised to invest in buildings' energy efficiency for not only financial reasons (e.g. decrease in energy bills), but also via ratings and certificates.[17] Energy Performance Certificates, which rate buildings' energy performance, will be a central aspect of the upcoming EPBD review. However, they only measure and reward the reduction in energy consumed, not in emissions. This goes against the climate ambition of the renovation wave and therefore poses another gap in the Commission's governance framework.

The EU should deal with the governance aspects during the EED and EPBD reviews, ensuring more centralised monitoring and coordination and disincentivising fossil fuels to achieve results. If not, the EU risks being left

with a piecemeal approach, making changes to existing legislation without improving the overall governance framework (i.e. controls, monitoring, incentives).

Renewables and electrification in Fit for 55

The Renewable Energy Directive 2018/2001 (RED) sets a binding, overall target of 32% of energy being sourced from renewables by 2030. For buildings specifically, it aims to increase renewable energy in the heating sector by 1.3% annually. This directive affects the uptake of renewables in the buildings sector directly and has proven to be an effective means to do so.

The review of the RED will likely introduce a minimum level for renewables in buildings and strengthen renewable heating and cooling targets. This would enhance the uptake of renewables and electrification under the renovation wave, replacing the current share of fossil fuels in the mix. Such an option would be a no-regret approach to achieving the European Green Deal targets.

In addition to the targets for renewables under the RED, the taxation and pricing framework offers opportunities to increase the uptake of renewables and electrification while tackling fossil fuel subsidies that distort the level playing field.

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First, the upcoming Energy Taxation Directive 2003/96/EC (ETD) review provides an opportunity to better align energy taxes in member states (e.g. linking them to GHG emissions).

The ETD review may be challenging, as the Council could be reluctant to consent to the EU influencing member states' taxation systems. However, the common goal of achieving climate neutrality by 2050 may create a new dynamic, as the EU will now have to start phasing out fossil fuels in a unified way. Otherwise, if counterproductive taxation measures are taken in one member state (e.g. higher taxes on electricity than fossil fuels), more efforts will be required from other member states and the EU level.

Second, the Commission is considering extending its Emissions Trading System (ETS) to buildings, which would potentially also affect price signals in favour of renewables and electrification. However, such an extension might have adverse effects.

At first glance, one might suppose that this proposal is easier to implement than an ETD review. The Council would likely prefer this measure, as it is an additional one that does not affect member states' taxes. From a governance perspective, however, this reasoning is misleading: although the legislative process may be faster, it may actually go against achieving emission reductions.

If the ETS covered buildings, the Effort Sharing Regulation 2018/842 (ESR), which sets binding targets for sectors not covered by the ETS and has proven its effectiveness to reduce emissions, would no longer apply to the sector.

Moreover, for the ETS to affect building emissions significantly, a high price of emission allowances becomes necessary. This would negatively affect all households[18] and disproportionately impact low-income households that cannot invest in renewable alternatives, leading to increased energy poverty and public opposition in the member states. In other words, it would be a step backwards in the just transition.

The proposal to compensate households directly for the cost of emission allowances through a new social fund[19] would be challenging, as compensation would need to be complete and accurately targeted to reimburse households correctly. Although extending the ETS system to the building sector might seem like an easy fix, it could actually create several negative outcomes for emission reductions and mean a step backwards in the just transition.

PROSPECTS: A FRAMEWORK TO MAKE THE RENOVATION WAVE 'FIT FOR 55'

A successful renovation wave should consider its effectiveness in increasing energy efficiency and reducing emissions by integrating renewables and electrification. The renovation wave should also achieve a socially just renovation of our building stock by, for example, adjusting Europe's taxation framework. To realise the emission reduction potential of buildings, the EU should address its governance framework and improve incentives for consumers when reviewing the relevant Fit for 55 legislation proposals by taking the steps outlined below.

1. **Strengthen the EED's control mechanism** to achieve the national energy efficiency targets. The current NECPs already monitor the respective country's energy efficiency progress and are therefore a useful tool. However, this monitoring still falls short. Common definitions and measurement methods should be established, for example, in terms of renovation 'rates' and 'depths'.[20] Moreover, if the 2022 evaluation of a NECP shows that a member state is not on track or not taking the appropriate measures to meet its energy efficiency goals, the Commission should be able to propose new, binding targets and plans to said member state. This would ensure that monitoring also leads to concrete results.

2. **Add carbon reduction aspects to the EED and/or EPBD**, in addition to energy efficiency targets. 'Energy efficiency first' is rightfully the leading principle

of the two directives. However, a comprehensive approach that disincentivises technologies that are based on fossil fuels is needed to increase Europe's renovation rate. The Energy Performance Certificates under the EPBD are only intended to improve the energy efficiency of buildings and do not account for its actual emission reductions. The Commission should propose a double requirement that Energy Performance Certificate scores are based on both energy efficiency and carbon emissions reductions. This would better reflect the final goal of the Fit for 55 package: reducing the EU's climate impact.

3. **Prioritise the ETD review over an extension of the ETS to the buildings sector** to incentivise the integration of renewables and electrification in buildings and disincentivise fossil fuels. Although extending the ETS may result in an easier agreement in the Council, it may increase energy poverty and entice public protest by raising energy prices. If done well, the ETD revision would offer more promising prospects to move the EU in the right direction, by reducing national tax incentives for fossil fuels and encouraging renewables and electrification instead.

The EU should scrutinise the governance aspects and consumer incentives of the directives and regulations emerging from Fit for 55.

Aligning the Fit for 55 package and Renovation Wave Strategy in this way will help achieve cost-effective renovation efforts that are parallel to the EU's climate neutrality objectives while keeping in mind the needs of its most vulnerable citizens. The directives and regulations emerging from Fit for 55 should ensure effective governance and create incentives for people to participate in the transition. The Commission should have a stronger monitoring role over member states' energy efficiency plans. Incentives for consuming fossil fuels in buildings should be displaced towards renewables and electrification by considering emissions as an addition to the 'energy efficiency first' principle and via better coordination of national energy taxation frameworks. If the EU and its member states do not move in this direction, they risk failing to reach their targets – reducing emissions from the buildings sector, and their climate goals more generally.

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1 European Commission (2020a), A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives, COM(2020) 662 final, Brussels.

2 European Commission, Questions and Answers on the Renovation Wave, 14 October 2020b.

3 In the EU, 62% of final energy consumption for space heating relies on gas, oil and petroleum products, and solid fuels. See Kruit, Katja; Joeri Vendrik; Pien van Berkel; Fennekevan der Poll; Frans Rooijers; Quentin Jossen; and Hugues de Meulemeest (2020), "Zero carbon buildings 2050: Background report", Delft: CE Delft, p.11.

4 International Energy Agency (2021), "Net Zero by 2050: A Roadmap for the Global Energy Sector", p.141.

5 *Ibid*.

6 *Eurostat*, "Energy saving statistics" (accessed 01 June 2021).

7 Economidou, Marina; Marc Ringel; Michaela Valentova; Paolo Zancanella; Sofia Tsemekidi Tzeiranak; Paolo Zangheri; Daniele Paci; Tiago Ribeiro Serrenho; Valentina Palermo; and Paolo Bertoldi (2020), National Energy and Climate Plans for 2021-2030 under the EU Energy Union, JRC122862, Joint Research Centre, p.45.

8 International Energy Agency (2020) "European Union 2020: Energy Policy Review", p.97.

9 *Eurostat*, "Energy Consumption in Households" (accessed 01 June 2021).

10 European Commission (2020c), Powering a climate-neutral economy: An EU Strategy for Energy System Integration, COM(2020) 299 final, Brussels.

11 Eurostat, Renewable energy for heating and cooling, 11 February 2020.

12 See *Eurostat*, "Electricity prices for household consumers [nrg_pc_204]" (accessed 03 June 2021)

13 Coady, David; Ian Parry; Nghia-Piotr Le; and Baoping Shang (2019), "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates", International Monetary Fund.

14 CoolProducts, "Mapping Europe's subsidies for fossil fuel heating systems", 21 December 2020.

15 N.B. only the targets for end-use savings are binding in the Energy Efficiency Directive.

16 European Court of Auditors (2020), Energy efficiency in buildings: greater focus on cost-effectiveness still needed, Special Report 11/2020, Luxembourg.

17 Ipsos Belgium and Navigant (2019), Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU: Final report, Brussels: European Commission.

18 Maj, Magdalena; Wojciech Rabiega; Aleksander Szpor; Stefano Cabras; Andrei Marcu; and Dóra Fazekas (2021), "Impact on Households of the Inclusion of Transport and Residential Buildings in the EU ETS", Warsaw: Polish Economic Institute.

19 See e.g. Simon, Frédéric, "EU plans 'climate action social fund' to shield citizens from rising carbon prices", *EURACTIV*, 10 June 2021.

20 See Ipsos Belgium and Navigant (2019), *op.cit.*, p.78.

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