

Policy Instruments for the energy efficiency sector: enabling mechanisms for a "FIT for 55" efficient transition (PIREES55)

The goal of PIREES55 is to shed light on the enabling mechanisms needed to reach the proposed targets of the European Commission's "Fit for 55" legislative package in the energy efficiency field.

Environmental policies research group

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As trained economist (habilitation with Technical University of Darmstadt), his research focusses European energy and climate policies, notably the impacts of the European Green Deal and a comparative assessment of the « Fit for 55 » legislative package.

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Project framework and structure

The project analyses up streamed and down streamed mechanisms foreseen in the energy efficiency legislation of the "Fit for 55" legislative package. It investigates how these can be translated into national policy guidelines and strategies.

This concerns two strands of research:

- (1) Cross-cutting implementation of the revised energy efficiency Directive (EED). Here stakeholder feedback on the final negotiation outcomes is assessed and compared to earlier input for the start of the negotiation of the EED. This will lead to a gap analysis that allows to derive recommendations for supporting guidelines for national transposition.
- (2) Energy efficiency in buildings and the revised Energy Performance of Buildings Directive: The overall goal of this research strand is to understand the factors both human, technical, political and policy-related to foster the successful implementation of policy instruments oriented to improve energy efficiency (EE) in residential buildings in Europe and in the UK. See Fig. 1 for a graphic summary of the connections between regulations at the European Level.

Methods

The project applies a **mixed method approach** combining qualitative surveying of stakeholders (European actors, large-scale surveys of households in the UK, Spain, France and Germany), followed up by expert interviews. A paper based on those interviews *Is the updated EED fit for purpose? A critical assessment based on the replies from European stakeholders* has been published in Energy Research & Social Sciences. The project is set in an interdisciplinary perspective, combining methods from economics, political and other social sciences.

Initial results

1. Insights into **persisting gaps** in the European legislative framework on energy efficiency and subsequent guidelines for policy implementation at national level
2. The research highlights that the provision of financial incentives, including grants and subsidies, plays a crucial role in persuading households within the UK to improve their EE. Importantly, streamlined administrative processes are key to encouraging household energy efficiency upgrades.
3. Careful consideration to the phenomenon of exhaustion must be taken to avoid a backlash in policy support

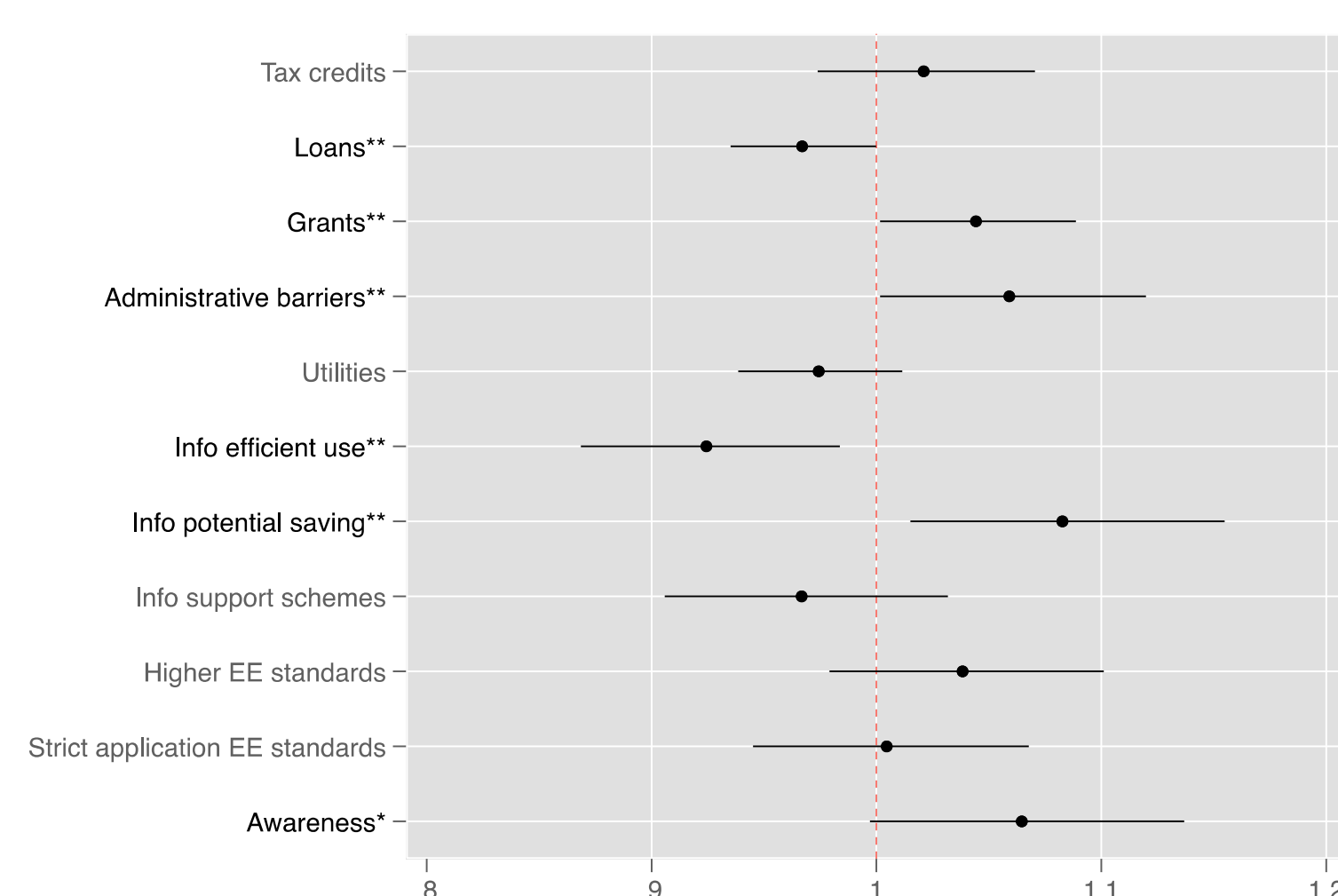


Fig. 2. Odds-ratio for policy drivers in UK households. Note: The variables in bold are statistically significant and the stars shows the level of significance in the baseline estimation (* p<.10, ** p<.05, *** p<.01). Source: Peñasco (2024) – Energy Policy.

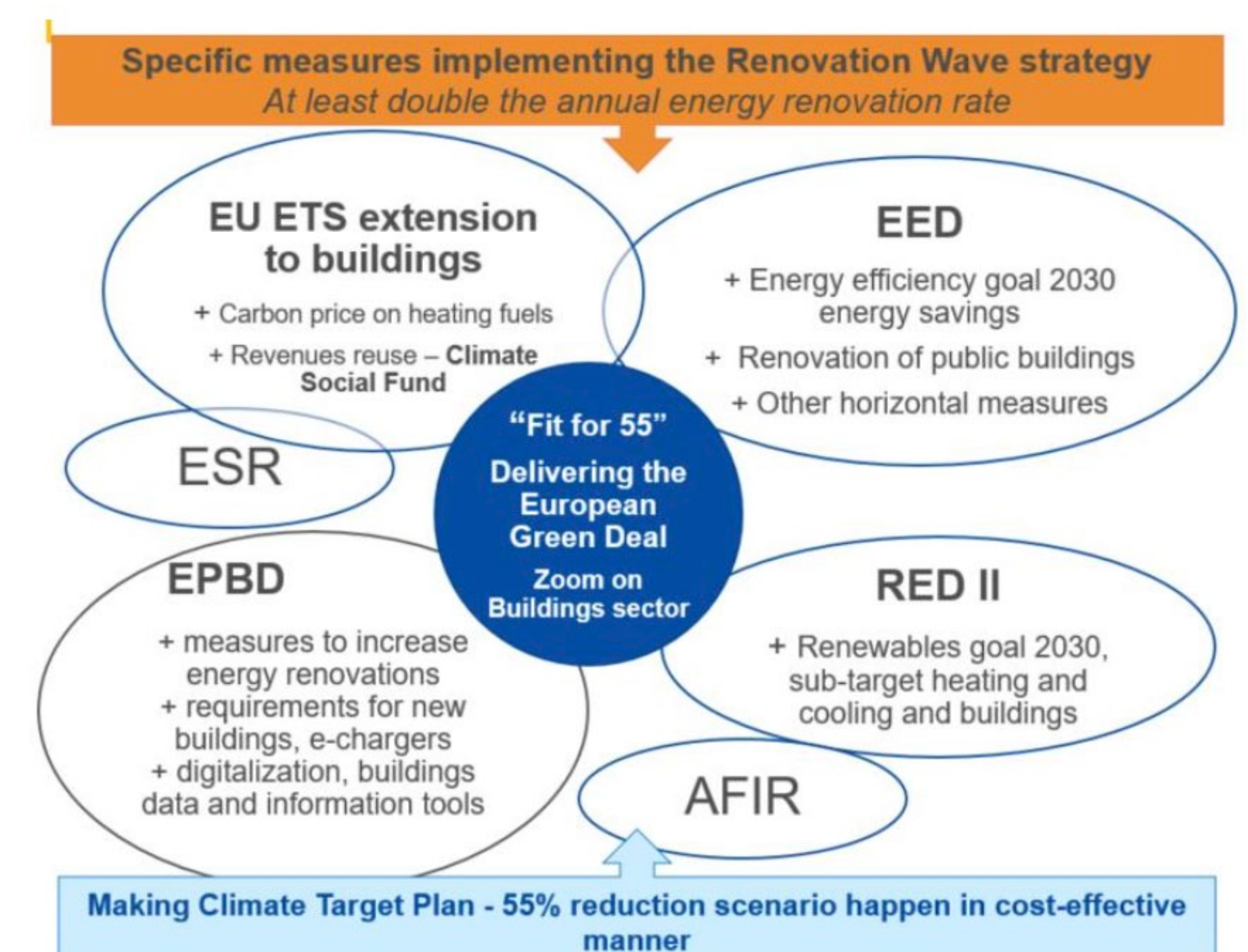


Fig. 1. Interactions among other key legislation affecting the energy performance of buildings in Europe. Source: SWD(2021) 453 final

Project status

In December 2022 a **pre-kick-off workshop** was held jointly with the EIB in Brussels to gather field experts' guidance for the project. It emerged that experts still see a strong **need for better European coordination of energy efficiency and clean energy policies**. Especially the linking of energy efficiency and renewable energy policies is seen as crucial for updating the present legal framework.

Regarding EE in the building sector, the workshop confirmed the strong **need to gather further data and insights on household renovation decisions beyond pure economic incentives**. A paper on *The Role of National Policy Instruments and Social Barriers in UK EE Adoption in households* has been published in *Energy Policy* to understand one of the most difficult cases in the OECD in regards to EE in the residential sector, the UK (See Fig. 2). Results confirmed the importance of policy mixes and policy instruments oriented to ease administrative barriers to apply for support schemes.

Using survey data from the “*Observatoire International Climat et Opinions Publiques*”, we have also checked the support for mitigation policies in general, including EE measures. The latter is, on average, the most supported measure in a group of 30 countries around the world. Interestingly, high income countries shows less support for mitigation policies than low- and middle-income countries, possibly related to a phenomenon of fatigue with mitigation policies in countries with a long history of combating climate change, usually those with high levels of national income. This paper is published in *Climate Policy*.

The last piece of research from the project examines how policy design and public awareness influence households' willingness to adopt heat pumps across four European countries—**Germany, France, Spain, and the UK**. Using survey data from **about 8,000 respondents** who do not currently have a heat pump, we run an **online experiment** in which participants compare heating options such as air-source, water-source, and hybrid heat pumps against the status quo. The experiment varies key factors including installation cost, running cost, emissions, government support, payback period, disruption, cooling, and compatibility. **Overall, the project aims to identify which policy instruments and product features most strongly shape consumer preferences and trade-offs in the heat pump transition.**