Introduction to Panel 3
Policy, finance and governance

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Introduction

Panel 3 focuses on how energy efficiency policy can be better designed, implemented and managed in order to effectively deliver on their objectives, especially those laid out in the Paris Agreement. This panel will mostly focus on public policy and how that is organised and implemented to deliver on the wide range of benefits achievable from demand reduction, jointly with supply decarbonisation, whilst taking into account the practical challenges observed in delivery. The panel is based around the papers accepted in this panel for the conference. Inevitably, these are not comprehensive. However, the 28 papers and abstracts offer a wide angle on the topic.

In comparison to previous eceee Summer Studies, this year we notice an increased focus on the role of demand reduction in the context of net zero goals and, more broadly, of the energy transition. There is a strong focus on the relevant European Union Directives (mainly the Energy Efficiency Directive and the Energy Performance of Buildings Directive) and Regulations (mostly the European Regulation on the Governance of the Energy Union and Climate Action), including their transposition and implementation in the EU Member States. However, the papers cover a wide spectrum of issues, reflecting the variety of challenges and approaches needed. There is a recognition that the EU can influence and learn from other countries, including outside Europe, and an understanding that within Europe the challenges differ as a function of geography and economic development. There is a reflection of the growing strand of work on policy governance, notably on the role of the sub-national level in delivering the energy transition, thanks to its privileged position close to citizens, and consequently on the changing power relations between different administrative levels within countries. As the title of the Panel indicates, the implementation of policies is also covered, with an emphasis on financing energy efficiency measures, reflecting the huge capital investment required, blending public and private funds. Some papers provide a particular focus on energy use in buildings and more specifically on heating and cooling, which is currently controversial across much of Europe in the context of the major energy price increases following the recent pandemic and the Russian invasion of Ukraine, which intensified the need for complete decarbonisation. Finally, some papers also reflect the need to consider the human dimensions of policymaking and delivery, in particular where polices are controversial and potentially perceived as unfair.

The panel papers are therefore divided into eight themes:

- Energy Governance
- National strategies and plans
- Just transition in central and eastern Europe
- Regional and local energy planning
- Energy efficiency financing
- Heating policies
- Energy policy design and acceptance
- Energy prices, policy and politics

More detail on each is provided in the following sections.

Energy Governance

The concept of governance recognises that the formation and delivery of public policy involves a complex mix of actors within society, not simply national governments. This theme focuss-

es on the main implications of multi-stakeholder processes for energy efficiency policy. First, a successful inter-governmental collaboration is presented by Borg et al. (paper 3-335-24). The paper assesses the case study of solid-state lighting within the IEA's Energy Efficient End-use Equipment Implementing Agreement, which successfully achieved its objectives. Inter-governmental collaboration is also the focus of Betz and Kurbatova (extended abstract 3-045-24), a comparative analysis of policy responses to the energy crisis triggered by the Russian invasion of Ukraine. The study finds a diversity of responses depending on the role of gas in the relative country; however, it concludes that most responses will have limited positive implications for long-term energy efficiency pathways. The correct implementation by EU Member States of multi-level and multi-stakeholders governance processes, as requested by the EU Regulation on the Governance of the Energy Union and Climate Action, is the focus of Pizzini et al. (paper 3-101-24), which is based on the findings of the LIFE-funded NECPlatform project, and examines the performance of six EU MS, finding that there is still a long way to go for full compliance.

National strategies and plans

The Energy Efficiency Directive, recast in 2023, is the central piece of EU legislation for delivering the Union's energy efficiency goals, in line with its climate neutrality objective for 2050. The impact of the Directive will depend on the effectiveness with which Member States develop and deliver national plans (National Energy and Climate Plans, NECPs) to meet their voluntary commitments. This theme focusses on that critical question. More specifically, Roscini and Chapelot (extended abstract 3-206-24) undertake a comprehensive analysis of EU Member States' draft NECP updates. The abstract identifies high levels of non-compliance and seven key criteria for assessing the updates. Broc et al. (paper 3-117-24) carry out a narrower analysis on Member States' progress in delivering energy saving targets under Article 8 of the same Directive. It finds a wide range of approaches are being used, with divergent level of success. Almost all Member States need to increase savings efforts to meet 2030 goals.

Just transition in central and eastern Europe

There is widespread agreement that any effective transition to net zero will need to be recognised as fair and inclusive and this establishes the idea of a 'just transition'. There are important issues both within and between different countries. In this theme, three papers examine energy efficiency plans in countries in Central and Eastern Europe, where issues of social justice are particularly relevant. Peretto & Süsser (paper 3-012-24) examine the issue in coal intensive regions, including economic losses under decarbonisation. It presents a tool which enables quantitative analysis of the range of impacts, including those positive ones coming as consequence of the transition and are usually overlooked in cost-benefit analysis. Burger and Unger (extended abstract 3-155-24) focus on the effects of the inclusion of energy use in buildings and road transport in the revised Emissions Trading Scheme (ETS2), specifically in Poland and Romania. It finds that carbon pricing alone is regressive, and therefore that well implemented measures under the Social Climate Fund will be needed. Oikonomou et al. (paper 3-080-24) review the application of the Energy Efficiency 1st principle in a range of countries in the CEE region and find that investments in energy efficiency measures are more cost effective than planned investments in fossil fuel infrastructure.

Regional and local energy planning

EU-wide and national policy frameworks are central to climate policy. However, sub-national actors' policy delivery is also critical. Local and regional authorities (LRAs), thanks to their privileged position to citizens on the ground, have the best knowledge of the main drivers and barriers to energy policy implementation. This theme includes five contributions that examine different aspects of the challenges faced at regional and municipal levels. More generically, Mandel et al. (paper 3-059-24) examine the extent to which regional policymakers are aware of a principle that could highly support them in decision-making and prioritisation of actions; the Energy Efficiency 1st principle. The paper introduces the REGIO1st Planning Framework, which has the potential to strongly support policy makers in considering not only the supply side but also the demand side when implementing energy measures. Nolden et al. (paper 3-187-24) set out a comparison of net zero policy implementation in two different English regional 'combined authorities'. The paper finds that both are hampered by policy centralisation and reliance on competitive funding. Bierwirth et al. (paper 3-246-24) set out the challenges to municipal authorities in integrating sustainability goals in urban planning integrating across governance scales, geographies and sectors. Based on work in Wiesbaden, the paper provides recommendations for sustainable urban development. Additionally, Webb et al. (extended abstract 3-021-24) examine the policy mixes approaches used in three different political jurisdictions in Great Britain to develop Integrated Local Energy Systems (LES). The extended abstract, which assesses the credibility and comprehensiveness of the three different approaches basing itself on an analysis of over 50 policy strategies and 105 policy instruments, highlights their limited strengths and numerous weaknesses. Finally, Few et al. (extended abstract 3-259-24) tackle the issue of interaction across geographical scales through the assessment early work on Local Area Energy Planning (LAEP) in one English region, how it is being used in different areas of the UK and how it could be enhanced in the future.

Energy efficiency financing

The scale of finance required for energy efficiency and decarbonisation of the building stock is very large. The financing task is also challenging for financial institutions that are more used to individual large projects than highly distributed energy efficiency investments. This theme explores some financing schemes being used, relevant guidelines and new options. Conforto and Hummel (paper 3-197-24) set out the methodology used to map the financing schemes supporting decarbonization of buildings, specifically regarding heating and cooling in EU Member States. The paper presents findings on different types of instruments, geographic distribution, beneficiaries and significant trends. Aydemir et al. (paper 3-176-24) explores the challenges of securing investment from major financial institu-

tions into building retrofit. The paper explores the approach of the German Development Bank (KfW) in designing guidelines that are net-zero compliant. Additionally, Topouzi et al. (paper 3-238-24) investigate the option of supporting owner-occupied home retrofit through a 'salary sacrifice scheme', which allows the investment to be paid from pre-tax income and is of increasing interest as work moves from offices to homes. The paper explores stakeholder views and design options. Finally, Bertoldi et al. (extended abstract 3-337-24) provide a review of the last thirty year of ESCO market in Europe, clustering markets in four different groups: the win-win, the adventurous, the small and the no-go markets.

Heating policies

A wide range of financing, supply chain and demand-side challenges contribute to the very low rate of deep retrofit currently observed in Europe and elsewhere. Enhanced policies are therefore needed both to increase fabric improvement rates and drive the move to non-fossil heating technologies. This session focusses on the challenges of designing acceptable and effective policies to support change. Killip et al. (paper 3-249-24) explore the trade-offs and synergies between policies to support building fabric improvement and heat pump deployment. Recognising that policy needs to allow for a range of tenures, building types, supply chain actors and policy goals, the paper identifies the need for better understanding of these at the level of individual buildings, but also the need to make progress quickly. Anagnostopoulos and Papadelis (paper 3-232-24) carry out an analysis on the new concept of 'heat pumps on subscription', in which energy service companies in Denmark are incentivised to install and operate heat pumps, with tenants paying a connection and monthly fees, giving insights into how the model might be extended across Europe. Finally, Braungardt et al. (paper 3-028-24) explore the controversies around the recent revision of the German building energy act to mandate non-fossil heating. The paper identifies the impact of populism and misinformation, in particular in the German media, in the weakening of the proposed policy.

Energy policy design and acceptance

Policy design is of crucial importance to boost policy acceptance and thus effectiveness. Well-designed policies are more likely to achieve their objectives. However, not all policies can be designed in the same way – the approach needs to be tailored to the context. The three presentations belonging to this theme tackle policy design and acceptance using different approaches: Herbstritt et al. (extended abstract 3-020-24) analyse the factors that may affect the perceived policy process outputs' legitimacy using the case of the neighbourhood approach used for the Dutch Natural Gas Phase-out strategy, showing that even the most ambitious climate objectives can be accepted if policies are designed together with and listening to citizens. Loschke et al. (paper 3-239-24) evaluate reactions to energy conservation policies during the energy crisis in Germany looking at how citizens reacted on X (formerly twitter), arguing that the crisis led to polarisation of the public discourse. Finally, Kronshage et al. (extended abstract 3-244-24) illustrate the exercise of applying the Gender Impact Assessment (GIA) presented by the German Environmental Agency to the Energy Performance of Buildings Directive (EPBD), extrapolating concrete approaches for a more gender-responsive EPBD.

Energy prices, policy and politics

Energy prices and available financial incentives play an important role when it comes to policy effectiveness. This includes different aspects: first of all, political feasibility, as addressed by Brisbois and Morley (paper 3-208-24). The study addresses political feasibility of demand reduction drawing on conceptual arguments and on recent findings from the UK. The paper reviews existing perspectives and focuses then on interacting drivers, such as economic incentive structures amongst others. Secondly, the effect of rapidly increasing energy prices, which is the focus of the analysis presented by Vringer et al. (extended abstract 3-062-24). In this study the authors try to answer the question of how the rapid and unexpected increase of energy prices, as experienced recently as a consequence of the pandemic and of the Russian invasion of Ukraine, impact households' disposable income, and more specifically how do different households (family size, income, etc.) respond to such changes. Results from this study could support policy makers in finding the optimal tax rate to balance fairness and emissions reduction. Third, the effect that controversial economic incentives can have on one country's energy demand reduction, as discussed by Di Santo et al. (paper 3-154-24) which analyse two very well-known Italian policy mechanisms – the white certificate scheme (WhC) and the Superbonus – to illustrate their results, their controversial aspects and their coherence with the Italian NECP. The paper also offers some reflections on how to involve energy poor citizens in such schemes. Fourth, the impact of the split incentive in the private rented sector, especially in the case of energy poor households. This aspect is the focus of Papantonis et al (extended abstract 3-076-24). The study presents the ENPOR tool, which has the objective to identify the share of the triggered benefits among landlords and tenants due to the implementation of energy-efficiency policy programmes. The first results of its analysis suggest a set of actions to enhance policies designed to alleviate energy poverty. Finally, energy poverty is also the focus of the work carried out by Reiss-Haimbala et al. (paper 3-231-24). This study shifts the focus to East and Southern Africa, and assesses how even small savings brought about by using energy product policy coordinated across the region to drive the adoption of energy efficient lighting, air-conditioning, and refrigeration, are crucial in contributing to poverty alleviation and to granting better conditions especially to women in rural Africa.