

# Introduction to Panel 2

## Policy innovations to ensure, scale and sustain action

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### Introduction

Panel two focusses on how innovation in policy can ensure, scale and sustain action on energy efficiency. It welcomes a breath of perspectives from both more familiar sectors and policy frameworks, as well as new policy innovations and market developments from which action on energy efficiency could flourish. The panel is structured in five thematic areas, which capture the range of perspectives offered. The first theme addresses what we can learn from both existing trends and concepts, as well as emerging areas of policy innovation. The second theme focusses more precisely on existing European policy frameworks and their future potential in driving action. The third theme moves beyond the European context and offers insights from international context and the penultimate panel covers how energy efficiency can be funded through new investment opportunities. Finally, we conclude with papers that consider the principles and vision that should guide future policy innovation.

### Looking back and ahead: lessons learned and introduction of future concepts and approaches

This theme focusses on how ensuring, scaling and sustaining action on energy efficiency requires learning from existing trends and identifying emerging opportunities.

Nilsson (2-002-21) presents lessons learned from the previous seven policy panels of the eceee Summer Study, asking whether we have managed to discover trends, enhance knowledge about energy efficiency policies and guide future policies (peer-reviewed paper).

Hansen et al. (2-116-21) offer a possible glimpse into the future of electricity retail from the Danish context of dynamic tariffs. This peer-reviewed paper reviews the initial implemen-

tation of dynamic electricity pricing in Denmark and outlines the role of grid companies and retailers, and includes general descriptions of products on the market today. It encourages one consider the extent to which dynamic tariffs and the ability for energy flexibility may be a driver of future policy and investment in energy efficiency.

Remaining in a Scandinavian context, Libertson et al (2-011-21) further focus on the interaction between energy demand and distribution by introducing the term of energy gentrification. The extended abstract focusses on how in Sweden data centres have taken up network capacity, which has limited the ability for other actors to develop or expand their businesses. It raises the more fundamental question of whose needs should be prioritised in cases of limited energy supply, and what role energy efficiency could play in mitigating these circumstances.

Brito (2-199-21) focusses on whether in fact a more fundamental policy innovation is required to scale action on energy efficiency; name the ability of European citizens to act collectively. Specifically, the extended abstract illustrates how conceptual, legal and hidden barriers limit EU citizens capacity to act locally towards EU defined goals.

### Energy Efficiency (First): Policies, drivers and barriers

The second theme takes a more specific look at leading policies that seek to ensure action on energy efficiency.

Mandel et al. (2-075-21) focus on the conceptualisation of the 'energy efficiency first' principle by giving an overview of the historical and practical background of the principle and providing a theoretical foundation. The peer-reviewed paper further illustrate possible routes for its implementation.

From this conceptual background, Pató et al. (2-069-21) explore in their extended abstract how the energy efficiency first principle can be applied in practice. They provide a framework to organise the practical implementation cases of the principle and provide an overview of real world examples that are already implemented in Europe and the US, which should provide a good foundation for a more comprehensive understanding of what it means to apply the principle in practice.

Rogulj et al.'s (2-163-21) peer-reviewed paper looks at carbon pricing as a policy to drive action on energy efficiency through its relation to Article 7 of the EU's Energy Efficiency Directive. The paper argues that if carbon pricing is imposed on buildings and transport, Article 7 EED should focus more on counterbalancing market failures and reducing barriers, which are not addressed through carbon pricing, also by excluding taxation measures as eligible under Article 7 EED.

To close this panel, Sunderland & Santini (2-052-21) take minimum energy performance standards and sets out what an ambitious framework for this policy area would entail. Specifically, the extended abstract reviews existing examples of MEPS for buildings, which exist at national and sub-national level to identify best practice examples. Based on the findings, design options for the new MEPS are provided.

### International perspectives on energy (efficiency) policies

The third theme looks beyond the European Union and seeks inspiration for policy innovation from the international context.

It begins with a peer-reviewed paper by Sarı et al. (2-166-21) which investigates the most economical situation for Turkey's power system, with a particular focus on energy efficiency and business models. A bottom-up scenario analysis shows that energy efficiency improvements can lead to a 10 % reduction of total energy demand. From this potential 30 % can be realized through market-based policy mechanisms, including energy efficiency obligations (EEOs). The paper concludes with an assessment of the impact of EEOs and outlines a framework for their design in Turkey.

Moving from a national context, Selby & Rodda's (2-217-21) extended abstract covers strategies used by California, USA to use energy and environmental policies to accelerate the needed transformation of the building sector. This extended abstract reminds us that policy innovation need not always be determined at the highest levels of government, but can indeed be pioneered through devolved administrations.

The theme concludes with two peer-reviewed papers from India. Sachar et al. (2-081-21) focus on India's cooling action plan (ICAP) and what lessons it offers in cross-sector policy making. In particular the paper reflects up on the lived-in experiences of the team at the Alliance for an Energy Efficient Economy (AEEE) in the process of the innovative ICAP development. It draws lessons learned from the policy process, which are applicable in a wide variety of cross-sectoral energy efficiency policymaking for long-term socio-economic benefits and synergies in complex stakeholder and administrative settings. Moving away from cooling and to a focus on the labour force, Bhadra et al. (2-045-21) discuss Solar Decathlon India

and its potential to build skills and capacity within the labour force to deliver net zero emissions buildings. The paper makes a case for innovative approaches to connect students and faculty with industry through a competition involving real life projects.

### Emerging investment opportunities for energy efficiency

Policy innovation is also required to address how investments in energy efficiency are made. At a fundamental level, Braungardt et al. (2-050-21) discuss how established economic principles may in fact be a barrier for energy efficiency deployment. For example, how a focus on cost efficiency at a micro level can frustrate the setting of the ambitious energy efficiency policies required. Accordingly, their peer-reviewed paper sets out recommendations for how economic principles can instead be used to drive optimal levels of investment in energy efficiency.

Vondung & Bierwirth (2-231-21) take a more applied approach through their focus on how energy advice services can be tailored to medium and high-income households in an urban environment. Lessons can be gleaned from wider behavioural changes and consumption decisions in these neighbourhoods, including from more sustainable transport and food choices. The research in this peer-reviewed paper speaks to the multiple benefits that energy efficiency offers and how their salience may differ in varied contexts.

Alexander et al.'s peer-reviewed paper (2-152-21) identifies the scale of a new market and investment opportunity through flexible energy demand in the Australian context. Specifically, their research creates a framework to address the suitability and readiness of different sectors to participate in demand response, and the types of demand response functions that can be offered. Of particular interest is the potential of flexible demand from heating and cooling buildings, which could help connect investments in established building energy efficiency measures to emerging flexibility markets.

Finally, Toupouzi & Mallaburn (2-106-21) outline in their extended abstract a retrofit salary sacrifice scheme as a funding approach to improve privately-owned housing stock. The growth in working from home and likelihood of more flexible working practices remaining is considered as an opportunity for investment in energy efficiency. A retrofit salary sacrifice scheme become a favourable mechanism to capitalise on employees' demand for home energy efficiency improvements that may have occurred as a consequence of working in energy inefficient homes.

### Guiding future policy innovation

The final theme explores three key areas through which future policy innovation can be guided.

Nolden et al. (2-027-21) begin with a focus on the concept of a just transition in their peer-reviewed paper. Specifically, their survey results of experts in the UK find that demand-side policy interventions receive insufficient attention compared with market-based, target setting or technology-specific policies. In addition, while the importance of energy efficiency measures to achieve a just transition to net zero was identified, respondents

were less confident of these measures being pursued without radical policy innovations. This suggests scope to align more ambitious energy efficiency policies with the growing just transition concept.

Lovell & Foxon (2-134-21) take our attention towards the transition to low carbon heating in the UK and the role that policy is playing in shaping it. In particular, their peer-reviewed paper focus on four key heat decarbonisation pathways and the policy decisions from which future direction will be determined. Their analysis identifies that although in practice a combination of pathways is likely to be needed, a branching of pathways could be realised through certain policy approaches.

The role of hybrid heat pumps and place-based local planning are examined in more detail.

Finally, Downing et al. (2-119-21) close the panel with a study on the role of knowledge exchange in energy demand policy innovation. The peer-reviewed paper is based on a systematic review of the knowledge exchange literature across eight thematic areas and an application to the Centre for Research into Energy Demand Solutions, which offers insights into both best practice and areas for improvement. Successful knowledge exchange is critical to guiding successful policy innovation to deliver the scaled action on energy efficiency that is required.