

Introduction to Panel 1

Foundations of future energy policy

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High energy efficiency is an essential component of the transition to a low-carbon society with sustainable energy for all. This requires high and sustained rates of energy efficiency improvement. Panel 1 explores different aspects, or foundations, of future energy efficiency policy.

We consider both new ways of thinking about or implementing policy and evidence for and against current practice. This includes perceptions and discourses in the area of energy efficiency – how do we talk about it? Another aspect is the role of energy efficiency in future studies – how is it conceived? The economics and financing of energy efficiency are also fundamental. Energy efficiency is often a trade-off between capital expenditures and energy costs – investment needs finance. Energy efficiency delivers mainly at the level of end-users, so it is also about people, their energy service needs and how they respond to policy and new solutions – people matter. Standards are a powerful instrument that not only relieves us consumers from the load of making wise and rational investment decisions, but also drives technology and market development. These are some of the aspects and foundations for future energy efficiency policy that we explore, analyse and discuss across 29 papers in Panel 1. You are warmly welcome to join us!

Good stories

Stories, narratives, discourses and rhetoric are addressed in papers by Hans Nilsson (1-242-13), Kathryn B. Janda and Marina Topouzi (1-406-13), and to some extent also by Pedro Guertler et al. (1-306-13). The latter tells the story of Britain's still young Green Deal, and how policy develops in practice

with ideas, rhetoric and politics – important explanatory factors in this development. Janda and Topouzi analyse the role of hero stories and learning stories in policy making based on three practical cases. Hero stories are popular and abound also in the field of energy efficiency but “overselling” efficiency in this way also leads to conflict. The authors argue for the importance of learning stories and leave us with the tantalizing idea that we should care more about love stories. Nilsson, on the other hand, takes us on an explorative, almost philosophical, journey into proverbs, aphorisms, narratives and stories, and discusses the influence these have on our minds. He argues that a proverbial approach can be a key to unlock our minds and rightly observes that “it is not the beard that makes the philosopher”.

Into the future

Six of the papers invite a discussion on the role of energy efficiency in future studies and scenarios. Bengt Johansson (1-003-13) compares a number of European low-carbon and energy roadmaps. Energy efficiency is a key strategy in all roadmaps but there are differences in approaches, e.g., in terms of how targets are formulated, and policy recommendations. Stefan Lechtenböhrer and Sascha Samadi (1-086-13) identify and explore the dual challenge of simultaneously reducing (i) electricity demand through end-use efficiency and (ii) carbon emissions through electrification. As a complement to these comparative studies, Nan Zhou et al. (1-198-13) provide a specific analysis of the potential impact of successfully implemented energy efficiency and low carbon policies for China. The technical potential for residential end-use energy efficiency in China is further detailed in paper by Nina Zheng Khanna et al. (1-160-13).

Yamina Saheb et al. (1-217-13) present a model for building renovation scenarios in the EU and results for the Netherlands and France. Peter Graham et al. (1-501-13) present a best case scenario for deep savings in building energy consumption by 2050 as well as important elements of policy packages. The importance of energy efficiency is undisputed. But the lingering question in the six papers is: what policies can, in different sectors and national contexts, truly deliver the envisioned efficiency improvements? More importantly, what underlying governance arrangements and policy formulation processes are required that could result in the adoption and acceptance of such ambitious policies.

Markets and financing

Part of the solution to implementing energy efficiency is to develop markets and financial investments. Four papers provide important pieces to this puzzle. Timothy J Foxon and Julia Steinberger (1-340-13) provides a conceptual review of energy efficiency and economic development, and discuss the need for structural economic change to support new business models such as energy service companies (ESCOs). In a similar vein, Katy Roelich et al. (1-351-13) analyse the potential role of multi-utility service companies for overall resource efficiency and how the Energy Efficiency Directive can be adapted and applied to further the market development. Milton Bevington (1-006-13) presents a commercial funding model for project finance and how it can work in an ESCO market to spark larger-scale investment in energy efficiency. As a way of financing, Louise Sunderland (1-413-13) looks at how revenue from ETS emission allowances can be recycled into funds for carbon mitigation through energy efficiency. In addition, Thibaud Voita (1-112-13), examines through case studies in China and India how international projects through UN bodies and development banks can help improve national policies and support the development of, for example, ESCO markets.

People matter

A critical foundation for energy policy is how end-users and other actors respond to policy. Based on a French study, Sylvie Douzou and Sophie Bouly de Lesdain (1-414-13) warn against notions such as “social acceptability” of policies and measures, and argue for a more user-oriented approach to policy. The importance of the social dimension for policy design is also discussed by Mithra Moezzi and Kathryn B. Janda (1-379-13) through the concept of “social potential.” Tim Chatterton and Charlie Wilson (1-513-13) propose a practical Four Dimensions of Behaviour Framework to guide policymakers. In a related paper, Sea Rotmann and Ruth Mourik (1-183-13) report on the IEA DSM Task 24 on behaviour change, the aim of which is to help programme design and evaluation where end-user behavioural practices are involved. The catastrophic earthquake in Japan in March 2011 caused losses of life and considerable hardship but it also provided researchers with a unique “laboratory.” Chiharu Murakoshi et al. (1-015-13) analyse household consumer behaviour change in the succeeding electricity crisis. But behaviour is not only about household consumers in their

present situation. Gavin Killip et al. (1-121-13) makes a contribution by making a comparative analysis of how industry actors in the housing retrofit supply chain has responded to policy in the UK and France. Jack Carrington (1-286-13) contributes by analysing the potential effects of encouraging housing space downsizing amongst retired households in the UK and how energy efficiency policy could work alongside such efforts.

Another way of involving and engaging people is presented and discussed by Sandrine Mathy et al. (1-320-13) who have undertaken a project with participatory low carbon scenario design in France that included 50 stakeholders and 50 sectoral experts. Andreas Huber et al. (1-457-13), on the other hand, have studied the normative, procedural, cognitive and strategic dimensions of local reorganisation processes in Germany (i.e. Emden and Bottrop) using a transitions theory approach.

Up to standard?

Although it is not solely up to standards to drive energy efficiency improvement, they are indisputably effective in market transformation. The role of standards is analysed and discussed in papers by Kevin Lane et al. (1-387-13), Mark Ellis and Vida Rozite (1-367-13) and Gabrielle Dreyfus et al. (1-449-13). Lane et al. analyse the potential role of technology forcing standards in product policy. They warn that it might be risky as an isolated approach and propose a broader approach for policy driven innovation. Ellis and Rozite describe several experiences with using international standards to advance energy efficiency for products, and discuss the pros and cons of this approach. A specific example in this domain is the super-efficient equipment and appliance deployment (SEAD) initiative reported on by Dreyfus et al. Although not confined to standards, this initiative facilitates international collaboration, coordination and information sharing among participating governments.

Broadened horizons

For exploring the foundations for future energy policy it is also important to broaden the horizon. Alan Meier et al. (1-055-13) puts our attention to the increasing need for producing fresh water through desalination processes with the example of Qatar. J Richard Snape (1-163-13) and John Romankiewicz et al. (1-072-13) raise the issue of how smart grids with distributed generation and microgrids that can function semi-autonomously may influence future energy systems, and how they may be developed. Energy security is the third pillar of energy policy in most countries, in addition to environmental and economic objectives. Daniel K Jonsson and Bengt Johansson (1-004-13) present a concise analysis of how energy efficiency may affect energy security in its different dimensions.

Summary

In summary, our panel roams the entire plain of energy policy, addressing all the actors, all the technical approaches, most current and some future theoretical approaches. It is the place where everyone will find something to pique their interest, to exercise their little grey cells, and even brush up their Shakespeare!