

Introduction to Panel 3

Local action

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Introduction

At the global scale, we have initiatives such as the Paris Agreement, which frame debates on climate change and future energy systems. At the very local level we see individuals making ‘normal life’ decisions, which have consequences for energy: purchasing products, moving or improving their homes, choosing how to move about, where to shop, what to buy, and how to use their time. How can the connections between global challenges and everyday living be conceived, discussed and (hopefully) moved in positive directions? The energy efficiency community has long seen itself as a key broker of such questions. This year’s Local Action panel takes the debate forward in a number of ways. Some papers present theoretical arguments while others report on real-life case studies; discussions of tools and modes of project management reveal the importance and complexity of not just *what* we do, but also *how* we do it. In relation to housing retrofit, contributors to the Local Action panel also raise questions about *when* actions can best be taken, and by *whom*. Agencies and institutions of government have important roles to play in facilitating (or not) the sorts of change that are sought, but these organisations themselves can, and do, evolve over time. Institutional change is a component of the wider system.

A constant and underlying theme is the need to work collaboratively to achieve complex projects and multiple policy goals. But partnership working is neither easy nor clear-cut. There are uncertainties and pitfalls throughout the processes of negotiating relationships, goals, decisions and actions. Developing a deeper understanding of what makes good and effective partnership is clearly important if the gulf between global targets and on-the-ground delivery is to be reduced.

Multi-level governance

A key challenge of reconciling the global with the very local is how to manage the interfaces between different levels, different institutions, different contexts and different access to resources. For the system to work well, each level of decision-making needs to be coherent in itself but also well integrated with other levels.

These issues are well illustrated in the work of Melica et al. (3-268-17), who report on successful examples of collaboration between municipalities and provinces/regions in the frame of the Covenant of Mayors and likewise co-ordination between regional and national strategies. Both top down (EU and/or national) and bottom up (regional and/or local) are important for ambitious climate change targets. These two approaches should be complementary and well integrated in policy design, implementation and monitoring. The paper concludes with recommendations on how to improve the collaboration between different levels of policy-making.

Turning to France, Vidalenc (3-390-17) charts a process of decentralisation of government over the last 30 years, by which a series of laws at national level have set out new responsibilities for French regions, municipalities and more local levels of government. The paper describes a three-step strategic planning tool to help these sub-national authorities rise to the challenge of delivering sustainable energy systems. Gaps and tensions remain, however, for example over the plausibility or desirability of energy demand and renewable supply being met at every scale and in every location.

Azennoud et al. (3-174-17) focus on the tensions that can exist between national-level policy and local experiences of delivery. These authors provide a comparative study of a national UK policy – smart meter roll-out – being put into operation by two different local authorities. The comparison shows dif-

ferent motivations for engaging in smart-metering, as well as differences in technology, data collection, analysis, energy savings, costs incurred, and future priorities. The paper illustrates the sometimes uncertain boundaries of responsibility for implementation between national government, local government, and end-users (domestic and commercial).

Agencies and intermediaries

How well do the institutions of government deliver the objectives of policy and meet the needs and priorities of users? What other kinds of intermediary roles are needed to make this happen? The dynamics between levels of government, and between different types of organisation, can help or hinder the cause of energy efficiency on the ground. It is therefore important to consider the role of institutions and institutional change, as well as the wider constellation of intermediary actors, whose involvement may be essential at different scales and in different contexts.

Ohlsson and Strömvall. (3-293-17) capture the experiences from the Swedish Energy Agency, and provide insight into how authorities' clear (or unclear) responsibilities for energy and climate change can support or halt effective management for a nation's energy and climate agenda. The paper highlights some aspects in the past and present collaboration between the Swedish Energy Agency and the regional energy agencies. Since 2016, the mandate of the regional energy agencies at the regional level has been strengthened and their resources have increased. Both parties agree on the need for stronger collaboration in the future.

Kivimaa and Martiskainen (3-060-17) provide an in-depth study of One Brighton (a pioneering sustainable housing development in the UK), tracing its antecedents and development over more than a decade. They argue that intermediaries of three distinct types can be identified throughout the development process: project intermediaries, local niche intermediaries and cosmopolitan niche intermediaries. As the case of One Brighton demonstrates, success depends at least partly on having the right combination of different intermediaries, suited to the specific context.

Bierwirth et al. (3-087-17) present a case study of support given to eleven villages in the rural area of South Westphalia, Germany, as they developed their own sustainable energy and energy efficiency projects. Eight of the eleven villages provided evidence to show the importance of independent intermediaries in the process. Key functions of the intermediary role include coordination, knowledge brokerage, community engagement and support services.

Partnership working

Collaborative working has long been promoted as a kind of over-arching 'good practice' in energy efficiency projects and policy debates. But the reality of partnership working is complex and can seem very unpredictable. There is a need for a deeper understanding of what we mean by 'partnership', who our partners might be, what we can expect from them and what they in turn might expect from us. Motivations for collaboration may or may not be shared among partners, and priorities among partners can be very different.

du Tertre et al. (3-057-17) argue that consideration of specific local challenges – beyond energy aspects – is paramount

for the impact of energy efficiency programmes. For instance, the problems raised by an ageing local population or by increasing fuel poverty are 'functional spheres' that may be more salient to programme partners than energy cost savings. The ability to manage deep partnership with an approach focused on this "functional sphere" instead of driven by a traditional sector-based vision is a key success factor. It is also important to develop a long-term relevant assessment procedure beyond traditional measurable effects (energy savings) and which encompasses intangible effects.

Adam et al. (3-282-17) investigate the organisational dynamics of a public-private partnership working to increase the uptake of housing retrofit in the city-region of Leeds at the time of the UK's ill-fated Green Deal policy. In the face of adversity, the project partners displayed a collaborative ethos founded in shared values, a desire to recoup at least some sunk costs, and a concern for their reputation and future standing in the region. On this evidence, private and public sector organisations are not only motivated by short-term financial calculations.

Networks and benchmarks for cities

Cities and city-regions operate at an important scale for energy efficiency and environmental protection more broadly. Cities are big enough to gather some momentum and make a visible difference; but small enough to be able to innovate and coordinate effectively among partners. Cities can be good places, therefore, for initiating change. The process of benchmarking a city's efforts helps create management tools and attract new supporters. City governments are also active in learning from each other and creating mutual support networks.

Petrichenko et al. (3-151-17) present initial experiences and results from the global networking initiative Building Efficiency Accelerator (BEA), which is one of many accelerators under the established Global Energy Efficiency Accelerators Platform for the UN initiative Sustainable Energy for All (SE4All). The learning and partnerships facilitated by BEA can help cities and global organizations overcome barriers and accelerate uptake of energy efficiency in buildings. As of March 2017 there are 28 BEA cities from different parts of the world, including Mexico City and five more 'Deep Dive' cities guided by the BEA. Concise snapshots are presented here on the work in each of these cities.

Yang et al. (3-152-17) have developed the China Green Low Carbon City Scorecard (GCLCC), a benchmarking system applied across seven dimensions and used in 115 Chinese cities in 2015. The GCLCC aims to help advance proceedings towards the national goals for decreased CO₂ emissions and increased environmental quality. A central aim is to reach beyond the conventional sector-based approach. Results show that the low-carbon transition in Chinese cities is still in its early stages. Creating a green low-carbon index that relies on publicly available data in China, and regularly evaluating city performance, can encourage Chinese cities to learn best practices from each other, and to strengthen their goals and implementation efforts.

Ribeiro et al. (3-320-17) describe the process of adapting a benchmarking tool for US cities (the ACEEE City Scorecard) to the context of Taiwan. Challenges included the very different governance arrangements for energy efficiency (e.g. no utility-led energy efficiency programs in Taiwan), lack of techno-economic estimates of energy efficiency potential in Taiwan, and

a generally more compact layout of Taiwanese cities compared to the US. Metrics and scorecards were developed accordingly. The development of the Taiwan City Index shows early signs of galvanising new interest in energy efficiency among the city governments concerned.

Ohshita and Johnson (3-335-17) investigate three key challenges facing cities in relation to climate change: increased energy efficiency; reduced greenhouse gas emissions; and resilience to future climate shocks (climate adaptation). They illustrate how these issues interact in three city-scale case studies: Washington DC (USA), Copenhagen (Denmark), and Shenzhen (China). A balance needs to be found between staying focused and embracing complexity, but three broad components emerge as important: distributed energy supply systems, passive and efficient energy systems in buildings, and multi-sector partnerships.

Models for implementation

Whatever the targets and policy objectives, new challenges emerge when regions, cities and neighbourhoods seek to implement change on the ground. Innovative ideas for implementation are needed to increase knowledge, recruit key partners, gain access to scarce resources, and apply lessons from one specific context to another.

Gupta and Gregg (3-158-17) present a localised Geographical Information System (GIS) based approach to plan mass renovation and provide targeted low carbon measures across UK cities. The study first identifies an area for energy renovation (e.g. because it has high energy use and/or a prevalence of fuel poverty), and then applies a bottom-up carbon mapping model (called DECoRuM) to estimate energy use and potential for reduction on a house-by-house level. Data from buildings can be aggregated to streets, neighbourhoods and the urban scale. The online GIS visualisation of the results is considered particularly helpful for local authorities and community groups in planning local energy actions.

Novikova et al. (3-355-17) present a typology of business and financing models for energy-efficient upgrades to street lighting, particularly focused on delivery for municipalities in nine central European countries. A common problem facing municipalities is a lack of up-front capital, leading to rather few investments being made, despite their being cost-effective and energy-efficient. Sourcing capital from other actors brings with it a greater need for partnership working.

Lindquist and Lökvist-Andersen (3-181-17) share a successful model for practical governance at community level in the region of Stockholm. Knowledge and experience of successful energy efficiency work from one context are customised to the needs of another. The model is based on three key principles: to focus on the learning journey of the individual and the context and preconditions of the organisation that wants to learn from peers in another; to employ a systematic and highly structured process; and to set clear objectives to solve a problem or to make significant improvements.

Insights for Housing Retrofit

The energy renovation ('retrofit') of buildings has risen up the policy agenda in recent years, largely driven by an understanding from techno-economic studies that the buildings

sector is cheaper and easier to tackle than transport, industry or agriculture. Moving from target-setting towards delivery has proven much more difficult than the scenario-based studies might suggest, leaving open a number of questions about how entire building stocks might be retrofitted quickly and at scale.

Mlecnik et al. (3-062-17) report on the COHERENO project, investigating the approaches of 24 different consortia offering energy renovation services for owner-occupied single-family dwellings in five European countries. Their analysis, based on the 'business model canvas' approach, provides a wealth of useful insights for the delivery of housing stock renovation, but it also signals a need for time and reflexivity in consortium-building: identifying gaps in knowledge and expertise (as well as external constraints like funding), and being innovative in finding ways forward.

Vondung and Kaselofsky (3-034-17) report on recent German energy advice experiments in three cities. Different energy advice experiments were co-operatively developed for each city targeting different groups by using tailored channels for outreach. Each experiment tested ideas about how to more effectively bring homeowners and energy advisors together. Out of the three experiments, only the one that sought to target the "change of ownership" window of opportunity has a significant impact. Potential reasons for the relatively meagre outcome of the experiments are highlighted for discussion.

Maby et al. (3-083-17) argue that in order to be effective, energy advice services must be professional, impartial, accessible and practical. Good advice requires both technical expertise and communication skills, and must cover the full range of technologies, as well as financial and practical matters, such as sourcing contractors and dealing with issues that may arise during the course of the work. Advice is differentiated from generic information. Local or regional hubs are effective channels for communication with consumers. Long term planning is important in order find the windows of opportunity for retrofit as other major decisions are taken regarding each specific building.

Owen et al. (3-136-17) propose a 'co-evolutionary framework' for understanding innovation in the complex supply chains for residential retrofit. Innovation is often perceived as coming from policy or householders, but it may equally come from manufacturers, suppliers and installers of low-energy products and technologies. By treating these intermediaries as active brokers of decision-making, new linkages and influences become apparent that might change the energy efficiency outcomes of refurbishment works. Ideas are presented on how policy could work better 'with the grain' of these incumbent industries, and so stimulate the market for retrofit.

Freudiger et al. (3-218-17) set out some of the key lessons from the canton of Geneva's efforts to learn from initiatives elsewhere to increase the energy renovation of dwellings, particularly multi-family housing. The study features nine cases. Collaborations between different actors, and the differences between cases are presented thematically in terms of: the prescription of design targets or specified measures for installation; the types and levels of financial support; selection, training and management of contractors; the degree of central control in providing oversight; engagement with end-users; and the supervision and validation of works carried out.