Introduction to Panel 1 Programmes to promote industrial energy efficiency

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Introduction

In panel 1 we investigate public and private programmes in Europe, China and U.S. to encourage industry to improve energy efficiency. The focus is on the impact of current issues, such as economic recovery, climate change, depletion of resources and population growth, as well as on the design, implementation and impact assessment of the programmes. What works and what doesn't in the challenging circumstances scientists, policymakers and industries face today? How do we make energy efficiency programmes future proof?

Together with authors and participants of this panel we aim at establishing the state of the art of existing industrial energy efficiency programmes. A wide range of different types of programmes will be presented including their initial conditions, implementation, strategies and outcomes. The impact of geography, cultural and economic differentiators and integration with other policy areas will be discussed. At the same time we will see instruments and approaches that are widely adoptable. Principal actors and their intended target groups will be identified within the boundaries or, indeed, opportunities of their positions and possibilities. We examine how targets and responsibilities are set and the way the impact of the programmes is assessed. Costs and benefits will be revealed both in terms of programme financing and of financial incentives.

Spirit and inspiration are the keywords for panel 1, and as panel leaders we hope that our participants will take them on in their future activities. The papers are divided according to theme below, and all themes are related to spirit and inspiration:

- The extremes of programmes based on legislation and enforcement vs. voluntary programmes based on facilitation, including policy options in between.
- Perspectives of energy efficiency programmes over the world.
- The finer details of optimisation of our energy efficiency programmes to reach their goals.

Keep the spirit in the bottle or release it?

The question whether industrial energy efficiency should be mandatory or voluntary is not new, neither is the observation that a simple yes or no is impossible. However, the rapid developments and consequential changes around us and the challenge to adapt put this question on top of the agenda over and over again. The outcome can be quite different from the last time, depending on insights and developments since. And what about policy options between mandatory and voluntary? Energy efficiency based on legislation and enforcement in Sweden (1-095-14 Berg) is presented next to an example of the opposite: the voluntary agreements between authorities and industry on energy efficiency in Belgium (1-002-14 Cornelis). A variation of a voluntary programme targeting motor systems is presented from Switzerland (1-049-14 Werle et al.), using financial incentives and influencing investment decision making.

International inspiration from Europe, U.S.A. and China

The considerations to opt for mandatory, voluntary and intermediate programmes can be many, certainly geography, demography, culture, and economy belong to the important differentiators. Despite the differences, cross-border translation

of energy use data is shown to be possible to identify energy efficiency potentials (1-012-14 Kalouache et al.).

The second theme takes us on a tour around the globe featuring a wide range of different energy efficiency programmes. We start in China with the example from the steel industry participating in one of the largest industrial energy efficiency programmes in the nation (1-014-14 Lu et al.). In addition, the impact of close collaboration between experts from China and U.S.A. is shown, leading to identification of opportunities and obstacles for successful energy assessments and implementation of energy efficiency.

The next stop is U.S.A. First, the importance of industrial programmes within rate payer-funded energy efficiency policies is shown (1-096-14 Aden et al.). Next, the ever important issue is covered: how to create attractive programmes for industry and consolidate their participation over a longer period of time (1-074-14 Goldberg et al.). To top it off, we will see how significant energy savings can be achieved by understanding and improvement of site-specific structures for productivity and reliability (1-057-14 Epstein et al.).

Our final destination is Europe. The development over time of the Italian white certificates scheme leads us to yet another approach of industrial energy efficiency (1-004-14 Di Santo et al.). Here tradable certificates and support from ESCO's drive energy efficiency, initially in civil sectors, but recently exceeded by its importance as driver of industrial energy efficiency. Last, but not least, we will take a look at how the Dutch motor systems supply chain engages in improving motor system efficiency for industrial users (1-071-14 van Werkhoven et al.). The collaboration with national authorities is a key element here, amongst others to be illustrated by a sector specific Green Deal, aiming at standardised methods to identify efficiency options, business cases and to improve knowledge transfer.

Keeping spirits high: tuning and toning the programme

We shift our focus towards detailing specific elements of policy programmes, touching some examples in different parts of the world; the third group of papers provide a variety of approaches and instruments to adjust and improve existing programmes, or to launch programmes from a new perspective.

To start with, the possibilities of using energy management as a driver for energy efficiency are investigated through different models from U.S.A. (1-070-14 Dahlgren et al.). Next the impact of energy auditing on measure adoption rates in U.S.A. is discussed, in particular as a useful support mechanism to reach energy efficiency goals (1-047-14 Perkins et al.). A different context for energy auditing is presented next through the European standardised thermal energy audit programme launched by the insulation industry (1-038-14 Gürtler & Barres Badia). Using the audit losses through the insulation system in terms of energy and money are quantified, and options for improvement are identified, thus providing use full contributions to energy management systems.

SME's, major contributors to most economies, are served best with adapted, or better, specific energy efficiency programmes because size, financial and personal capacity, production planning and degree of organisation ask for different approaches than usual in industrial programmes. Effective programme designs and structures from Belgium, Japan, Spain and Sweden are presented (1-050-14 Thollander et al.), differentiating between medium sized and energy intensive, vs. small and non- energy intensive SME's.

Adaptated energy efficiency programmes can be a challenging need too, looking from the perspective of policy makers, in particular regional governments. For regional governments, industrial energy use is difficult to affect as they only have indirect power to influence decisions in those organizations. A successful approach for regional energy efficiency policies is shown by the example of Gävleborg County in Sweden (1-044-14 Backlund et al.). Integrated measuring and verification (M&V) of energy, water and CO_2 savings might be an obvious element in sustainable business management for industries, not in the least for translating achieved savings into financial terms and benefits. Putting this into practice and make it work is challenging. Simplified methodologies exist, and will be explained and illustrated with examples from Austria, Germany and Switzerland (1-088-14 Beyl et al.).

Since communication is a key precondition for any energy efficiency programme, the last paper is dedicated to learning (and inspiring!) through dedicated energy efficiency networks for industry (1-065-14 Köwener et al.). The adaptation of an originally Swiss model for the management of Learning Energy Efficiency Networks (LEEN) to Germany is already interesting in itself. Even more so are the experiences and outcomes of LEEN management in 30 Pilot networks throughout the country and with different types of industry involved. Both limitations and possibilities of LEEN are discussed, including their positioning within current and future energy efficiency policies.