

Education and Training for Capacity Building in the Energy Sector

Joint meeting of the

IEA Working Party on Energy Efficiency (EEWP),

IEA Working Party on Energy End-Use Technologies (EUWP)

International Partnership for Energy Efficiency Cooperation (IPEEC)

Wednesday, 21 September 2016, 09.00-16.00

UNION INTERNATIONALE DES CHEMINS DE FER (UIC)

16 rue Jean Rey, 75015 Paris

Welcome and Introduction

Tom Bastin, Chair, EEWP

Gudrun Maass, Chair, EUWP

Robert Sandoli, Chair of IPEEC Executive Committee

The importance of training and capacity building for policy makers and practitioners, and effective information dissemination, including to an informed public, should not be underestimated.

Challenges include finding and training employees with the necessary skills, and evaluation of the effectiveness of educational programmes.

Participants were asked to consider ways and means to join forces for a more effective educational process and outcome among the groups represented.

IEA's Energy Efficiency Division

Brian Motherway, Head of Energy Efficiency (IEA)

Update on relevant Secretariat activities.

Energy efficiency is becoming an increasingly important component of energy systems. It has a big role to play in meeting the economic, social and environmental objectives of IEA member and partner countries. Under its new Executive Director the IEA is pursuing a modernisation strategy underpinned by three pillars:

- Enhanced engagement with major emerging economies
- Strengthened and broadened commitment to energy security
- A greater focus on clean energy technology, including energy efficiency

The Energy Efficiency in Emerging Economies (E4) programme offers IEA analysis tailored to the needs of emerging economy governments by:

- Improving the narrative and evidence base for energy efficiency
- Promoting energy efficient prosperity
- Analysing potentials, impacts and options
- Designing new policies and measures

As part of the E4 programme, Training Weeks help the 'next generation' of energy efficiency professionals be more effective in their roles, and expose them to a large international energy efficiency support network. A combination of lectures, interactive discussions and practical exercises are offered in four modules: buildings, appliances, lighting and equipment, industry and transport. TCP expertise is already being included in two of these modules, buildings and appliances.

Webinars are also proving popular and are currently reaching large audiences in Mexico, South

Africa and Ukraine.

To further scale up these training efforts the IEA Energy Efficiency Division is currently working to develop energy efficiency indicator training material programmes freely available online.

Natural Resources Canada

Laura Oleson (replaced by Carol Burelle)

Through the Canadian Industry Program for Energy Conservation (CIPEC) Canada provides a number of capacity building and training programmes and tools.

CIPEC is a voluntary partnership between the Government of Canada and private industry and it is an open and expanding network of about 24 industrial sub-sectors representing more than 98% of all industrial energy use in Canada.

The CIPEC approach is built on four pillars that:

- **Raise awareness** through a variety of communication tools and activities;
- **Build knowledge** through workshops, webinars, technical guides, online tools and software, conferences and internships;
- **Take action** by offering financial support for energy management projects, funding partnerships with provinces, tax incentives that encourage clean energy projects, and in-house expertise and guidance;
- **Reap rewards** through improved energy management practices, lower operational costs and lower GHG emissions, and leadership and innovation awards programmes.

The DSM University

Rob Kool, Chair, TCP on Demand-Side Management (DSM TCP)

The DSM University (DSM-U), managed in conjunction with Leonardo ENERGY, is targeted at:

- Policymakers interested in learning about the costs and benefits of demand-side management and its impact on energy systems;
- Managers keen to learn more about organisations, governance, planning, programme structuring and implementation methods;
- Programme implementers wanting “tricks of the trade”.

The DSM-U is built on 20 years of experience of the DSM TCP. It provides access to the knowledge developed in the DSM TCP in a structured way. In addition, DSM-U aims to be a community of practice on DSM themes.

At the heart of the DSM-U are the monthly webinars. These are developed through their own

material and with invited material from external specialists in research and business, with technical support provided by the Leonardo ENERGY staff. The webinars are 45 minutes in duration and participation varies between 80- 150 participants per webinar.

Some participants felt there was an opportunity to create a common platform to promote structured TCP educational and skill-building programmes, and which might best function under the IEA umbrella. Different “certification” options could be offered, and outreach could be targeted e.g. to partner countries or policy makers. Training materials would need to be of high quality and effective methods of assessment considered.

The importance of education for innovation in the energy sector

Torsten Fransson, Education Director, KIC InnoEnergy

KIC InnoEnergy is an EU initiative that supports and invests in innovation at every stage of the journey – from classroom to customers. It builds connections across Europe, bringing together inventors and industry, entrepreneurs and markets, graduates and employers, researchers and businesses. It works in three essential areas of the innovation mix:

- Education to help create an informed and ambitious workforce that understands what sustainability demands and industry needs – for the future of the industry;
- Innovation Projects to bring together ideas, inventors and industry in collaboration to enable commercially viable products and services that deliver real results;
- Business Creation Services to help entrepreneurs and start-ups who are creating sustainable businesses to grow rapidly to contribute to Europe’s energy ecosystem.

Modernisation in higher education is urgently needed and change is on the way. There are currently many general online courses but most of these have a low success rate compared to the numbers of registrations.

The 2030 learner will most likely obtain knowledge from a variety of sources, developing skills and competences in other ways than via traditional programmes and degrees.

The educator’s role will also develop to be one of architect, moderator and assessor, possibly with a combined educating and research role. It may be a challenge to keep the human aspect in what will no doubt become larger and more remote learning processes.

Most universities will also most likely evolve with a greater focus on the learning process and less on current teaching methods. The challenge will be to manage assessment and accreditation

processes, particularly in non-university based programmes.

The ISGAN Academy

Michele de Nigris, Chair, TCP on Smart Grids (ISGAN TCP)

The ISGAN TCP is meant to complement, leverage, and bolster existing or nascent international efforts on smart grid through high-level government-to-government engagement. It runs an education programme together with Leonardo ENERGY, an EU activity.

The objectives of the ISGAN Academy are to offer the ISGAN community of high-level engineers, professionals and decision makers a means of rational and efficient continuous technical skills to complement and update in the field of smart grids.

The basic concept is a set of e-learning modules structured around a core, fundamentals, local material and perspectives, and relevant additional material. The training will target universities, research centres, network operators and technology providers, and aim to deliver content, experience, knowledge, best practices, updates, etc.

Work is currently underway to develop the programme and set up the web platform. The first webinars under the ISGAN Academy are scheduled for early 2017.

Both the DSM and ISGAN TCPs use Leonardo Energy as their web platform, a service that is provided free of charge.

Discussion on further steps

This session is intended to discuss how a cross-cutting activity for a better distribution and application of results generated by TCPs can be organised e.g. via a common education platform.

Participants were asked to consider how to measure the impact of these activities and what concrete steps could be taken to develop a joint collaboration of educational activities that would be sustainable over the long term.

Participants felt that measuring impact should potentially involve an assessment on the quality of the material presented, participant satisfaction and eventual impact on policy over time, although agreed that the last of these points would be very difficult to measure and evaluate. ISGAN is currently using success stories as a way to report on the impact of their current educational activities and cited Mexico and South Africa as two countries that had seen concrete benefits from training.

On the issue of recognition for courses completed, it was felt that a professional certificate of some kind was worthwhile, particularly if linked to the IEA.

On next steps, it would need to be seen if there was a market for broader educational activities, to

expand the collaboration, and to develop a business model. Whilst Leonardo Energy was currently providing a good service a more neutral platform might be worth considering.

The Secretariat said that it was currently going through a tender process in the development of online training for the energy efficiency indicator manuals but would also be interested in working with others. And whilst there was no cost for the web platform they had chosen, service providers were being paid to design courses, plus there were small hosting fees. It was considered important to work with educational professionals to develop high quality materials.

Intellectual Property Rights and long-term sustainability of programmes were also issues to be considered. It would also be important to offer free information.

The Clean Energy Solutions Centre was suggested as a potential long-term home for such a collaboration and should be explored.

The big challenge would be to change the mentality of the current learning and teaching environments i.e. intended outcomes vs learning outcomes. It is one thing to follow a course but another thing to prove that you have learned something useful that could lead to action.

There is frustration that a lot of the research and learning from the TCPs seems to go nowhere and expanding these individual programmes to a broader project could be an effective way to better disseminate their expertise.

Wrap-up

- **Tom Bastin**, EEWP
- **Gudrun Maass**, EUWP
- **Robert Sandoli**, IPEEC

The importance of education in helping to transform energy systems and promote energy efficiency should not be underestimated. Transforming the education system, particularly the way training is delivered, should be considered with the end goal in mind i.e. using energy efficiency as a tool to transform economies. Finding ways to better pool resources and encourage broader collaboration was key and there seemed to be willingness to do that.

Given the volume of information available today, there would most likely be a role for a “curator” to seek out the highest quality information.

Resources to move this project forward would be an issue but the EUWP will investigate next steps in the process.