IEEE EPPI Working Group on Energy - ISGT Europe 2017 Panel discussion
"Challenges for Energy Policy in Europe: A Technologists’ Approach”

by Jef Beerten

The IEEE European Public Policy Initiative (EPPI) WG on Energy was given the opportunity to organise a plenary panel session at this year’s IEEE Power and Energy Society (PES) ISGT Europe Conference, held in Turin, Italy from 26-29 September 2017. ISGT Europe is one of the flagships conferences of the IEEE PES in Europe, and attracted 400 participants, with 261 papers published in the proceedings from 897 authors hailing from 47 countries from all across the globe. Sessions included 5 invited speeches, 12 tutorials, 36 parallel sessions and 4 panel sessions, with 24 contributors in total.

The EPPI plenary panel session was chaired by Jef Beerten, Chair of the Energy Working Group, and included a panel of Energy WG experts: Julian Barquin, Matthias Berger, Ana Cigarán Romero and Brian Kirby, as well as former Chair of the Energy WG, Pierluigi Mancarella.

After introducing the EPPI and the WG activities, a panel discussion was centred around four key questions on which the panellists were asked to reflect.

- **Will we still need a power grid?** What could this grid look like technology-wise, how do we redefine its role and who will still pay for it?
- **Will we still need power engineers?** How do we integrate the move towards multi-energy systems and data and ICT in the curriculum and is the technical community ready for this challenge?
- **How to ensure the synergies?** How do we facilitate the interactions between different forms of energy and what will be the influence of the electrification of our energy system?
- **How to plan for the future?** What future do we plan for and how do we account for varying challenges across different regions? How can we integrate energy system planning with our technical know-how?

As far as the need for a power grid is considered, in their address both Ana Cigarán Romero and Julian Barquin answered in the affirmative. Ana Cigarán Romero pointed at the need for more and more cooperation amongst the TSO’s in Europe, and this not only at the highest organisational level, but also from an operational perspective. The introduction of more and more ancillary services, also at the lower grid levels, will put forward the need for more coordination actions amongst various TSO’s and DSO’s. At the same time, she identified the need for market rules to evolve accordingly to these requirements. Julian Barquin argued that a combination of economies of scale and reliability requirements will justify the existence of a power system also in the coming decades, but depicted a future power grid enabling interactions with different networks, and incorporating more technological diversification depending on the needs of local
communities. He also urged policy makers to move towards grid tariffs to be set according to use, and to harmonise tariffs, taxes and levies.

In line with the reflections on the changing role of the power system infrastructure, Brian Kirby identified the need for maintaining a focus on the technical nature of power engineering in the future education. Although we need the power engineers, he argued, the focus in their education cannot remain the same as it has been for decades. In this regard, he pointed at the need for future power engineers to also master the technical language of amongst others communication engineers and mechanical engineers to solve multi-energy and smart grid problems together by relying on a broad spectrum of knowledge.

With the importance for interactions with other energy systems recognised by several panellists, Mathias Berger introduced a number of key examples pointing to the fact that guaranteeing synergies in multi-energy systems is not always an easy task. In particular, miscalculations of financial incentive schemes and real-life trade-offs against other objectives often give rise to unexpected and even unwanted societal solutions. Besides, he argued that it would even be more important to tap into synergies in the wider sense of the word (e.g. with city planners) in order to come up with sustainable alternatives to challenges related to the maintaining and improving the comfort level of citizens. In his final remark, Pierluigi circled back on the synergies with other forms of energy, and pointed at the potential at the local scale and brought about by storage options between different networks (e.g. power to gas solutions). At the same time, he identified the need for incorporating the increased level of uncertainty in planning tools and methodologies in order to really capture the value of smart grid technologies.

In the subsequent discussions with the audience, the panellists agreed on the challenge for regulation to keep up with technological evolutions, which are happening. In this regard, they emphasised the importance of keeping an open dialogue between the technical community and policy makers. Such a dialogue was generally considered to be a pivotal element to make sure that technological capabilities were used to the benefit of the society as early on as possible by moving behind current-day practices and thinking outside of the box. In order to ensure a fruitful dialogue between the technical community and policy makers, the panellists identified the need for the technical community to make an effort to talk the language of the policy makers to make sure relevant messages could be conveyed effectively.