CEER-NARUC International Forum

April 27, 2017

Arlington, Virginia, USA

Closing Statement

Energy regulators from the United States and Europe held their inaugural International Forum in Arlington, Virginia on 27 April 2017. This one-day event was co-hosted by the Council of European Energy Regulators (CEER) and the National Association of Regulatory Utility Commissioners (NARUC)[1]. The event attracted energy experts from academia, industry, international organisations and regulatory authorities from across 20 countries. The key themes discussed were LNG; cybersecurity; the growing role of renewables and distributed generation; and technology and innovation that benefits consumers.

LNG

Global LNG trade in 2016 reached a record 258 million tonnes (MT) – an increase of 5% from 2015, and the largest ever year for LNG trade. LNG accounts for 10% of the global gas market. There is significant growth in LNG supply projects, as well as increases in demand for LNG as a fuel from new and existing markets across the globe. LNG supply grew 13 MT in 2016, to reach 258 MT, led by Australia. Demand for LNG is at 258 MT with growth led by China, India and Egypt (see the IGU 2017 World LNG Report).

Global gas prices, largely influenced by the price of oil, saw relative lows during 2016. Prices are converging across the world. The U.S. has moved from being a net importer to being a net LNG exporter this year (from the Gulf Coast). The U.S. currently has one commercial LNG project operational and 2 more projects coming on in 2018. 40% of US exports (from this one facility) are going to South America, 15% to Asia and some to Europe and the Middle East. FERC (which currently does not have its full quorum of Commissioners) has 14 LNG pending LNG applications. LNG is a growing part of Europe's energy mix (accounting for 8% of the European gas market in 2014). Europe's 23 LNG import terminals have an import capacity of 28 bcm/year and a further 5 LNG projects are under construction. LNG makes a significant contribution to Europe's security of supply (see the CEER LNG report). The key LNG issues addressed in this event included the under utilisation of existing LNG facilities, barriers for access to LNG and regulatory challenges and policies to promote LNG. In Europe two studies

are forthcoming: one by CEER on the future role of gas (including LNG); and the other by the European Commission on gas market design reforms.

Cyber Security

Cyber security and the protection of critical assets is growing concern globally. This CEER-NARUC International Forum was a rare opportunity for energy regulators in America and Europe to be joined by leading international cyber experts to discuss the main cyber security challenges for the energy sector.

There are significant cyber and privacy developments in the EU with the new general frameworks under the Network Information Security (NIS) Directive and the General Data Protection Regulation, and the emerging new energy-specific cyber strategy in Europe including possibly a new EU-wide Network Code. CEER's new initiative, called the Partnership for the Enforcement of European Rights, seeks to reinforce cross-sectoral, cross-authority cooperation in Europe on issues (including cyber) to the benefit of consumers. The U.S. speakers shared lessons learned from the Ukraine cyber attacks in 2015, from the military, and from NERC and NARUC work (in collaboration with other partners such as homeland security and energy utilities). Key issues discussed included:

- cyber emergency management, the additional challenges from the Internet of Things (IoT), and what regulators can do to ensure that cyber threats do not challenge the reliability of the electric grid and security supply along the entire value chain.
- The need for adequate capacity and competences within energy regulatory authorities to deal with cyber (which is a cross-sectoral issue).
- The important issue of who pays for cyber and how regulators can appropriately evaluate utility expenses on cyber projects, in order to cost-effectively maintain security and reliability of supply to consumers.
- The need for a platform for international collaboration on cyber security.

CEER and NARUC committed to further cooperate on the issue of cyber security given the urgent need to prevent, detect, respond and recover from cyber attacks.

The growing role of renewables and distributed generation

With the Paris Climate Change agreement (signed in December 2015), Renewable Energy Sources (RES) are expected to play a major role in the transition towards lower greenhouse gas emissions. The International Energy Agency (IEA) forecasts that RES has the potential to contribute 30% of all emissions savings through 2050.

RES is already having a growing a significant influence in the U.S., accounting for more than half of new generation capacity additions n 2016, and 11% of total US electricity generation. There are many drivers in the US including the Renewable Energy Portfolios Standards, the lowering cost of RES, and tax policies. In the US, electricity costs are only modestly affected by the additions of RES (less than 1% nationwide and with some states that are rich in RES witnessing electricity price falls).

In Europe, 28% of the EU's electricity consumption comes from RES. Solar and wind power are now central players in the European electricity sector. As a sign of the growing importance of RES, a new report by the Hungarian regulatory authority on geothermal energy potential in Hungary was presented. Europe has set itself a target to collectively reach a share of at least 27% renewables in final energy consumption by 2030. This translates to an ambitious level of approximately 50% of Europe's electricity consumption coming from renewable sources by 2030. A (2016) CEER/ACER report shows that RES subsidies are a significant and rising part of average household electricity consumer bills in Europe, having risen from about 6% in 2012 to 13% in 2015. The cost of RES support schemes, country by country, can be found in the recent (April 2017) CEER report. European regulators also shared their lessons (Jan 2016 CEER report) on how to re-design RES support schemes so as to move towards market integration.

The European Commission's"Clean Energy for All Europeans" legislative package (proposed in November 2016 and currently under negotiation by EU lawmakers) provide, *inter alia,* for a new electricity market design which seeks to better integrate RES more into the market, which regulators welcome. It also seeks to empower household consumers to produce, sell and store electricity, either individually as "prosumers" or in a community (also called "energy community" in Europe).

Distribution networks (lower voltage networks) are becoming more central because of the increase in distributed RES generation, active domestic (household) consumers with varying electricity demand, prosumers, energy storage, power-to-heat, electric vehicles and community based initiatives. Distributed generation, storage and demand-side initiatives can support a more flexible, targeted management of the distribution network and may offset traditional network investment. Whilst the active participation of more consumers is very much welcomed, adding DG raises regulatory issues (e.g. interconnection standards, allocation of distribution system costs, and rate design and tariffs) and requires greater cooperation by network operators at transmission and distribution level.

Efficient RES requires efforts in different areas including infrastructure, financing and the regulatory framework. The event addressed several ongoing challenges regulators and policy makers face given all these trends, including:

- The need to efficiently and fully integrate RES into the electricity market. RES should have the same wholesale opportunities and responsibilities as conventional generation, including balancing responsibility
- The move to diminish RES subsidies. Where needed, RES support schemes should be designed cost efficiently and integrated fully into the wholesale market.
- To avoid perverse effects, net metering of self-generation (between supply and generation) for prosumers should be avoided. Net metering (whereby excess electricity is injected into the grids and used later when the prosumers onsite generation is insufficient) should be avoided as it implies shortage capacity is available for free..
- Efforts should be made to remove various cross-subsidies in order to create a level playing field between prosumers/energy communities and less active consumers.
- The need for robust carbon pricing.

Technology and innovation that benefits consumers

This panel discussion on technology and innovation continued the emphasis on strong economic signals. Three technologies are transforming the electricity sector: digitalisation; smart metering/systems and homes; and distributed generation. There are also new regulatory challenges ranging from the Internet of Things (IoT) to disruptive business models and to bundled goods where energy is offered with other services. The result is that consumers can play an increasingly important role in markets through energy efficiency, demand response and self-generation. Innovation and smart meters can help unlock demand-side participation by consumers, with benefits in consumer bills and for the system generally.

For this to happen, consumers must be given the opportunity to access dynamic tariffs with price signals (to shift consumption to cheaper times of the day) and have access to energy-related competitive products in a fair, transparent and economically-efficient market. European regulators spoke to the importance of smart meters and welcomed the emphasis in the new Clean Energy legislative proposals to facilitate more active consumers.

Unlocking the benefits of demand response requires new smart technologies and business models as well as conducive market designs and smart regulation that create the signals for demand response. Research presented by Professor Ignacio Pérez-Arriaga's (MIT and IIT-Comillas University) on the MIT study explained how the utility business model is changing as is the way to regulate the utility of the future. Key findings of the MIT study include:

- The only way to put all resources on a level playing field and achieve efficient operation and planning in the power system is to dramatically improve prices and regulated charges (i.e. tariffs or rates) for electricity services.
- Cost-reflective electricity prices and regulated charges should be based only on what is metered at the point of connection to the power system.
- Peak-coincident capacity charges that reflect users' contributions to incremental network costs incurred to meet peak demand and injection, as well as scarcity-coincident generating capacity charges, can unlock flexible demand and distributed resources and enable significant cost savings.
- Granularity matters. The value or cost of electricity services can vary significantly at different times and at different locations in electricity networks. Progressively improving the temporal and locational granularity of prices and charges for these services can deliver increased social welfare. However, these benefits must be balanced against the costs, complexity, and potential equity concerns of implementation.
- Care must be taken to minimize distortions from charges that are designed to collect taxes, recover the costs of public policies (such as efficiency programs, heating assistance, subsidies for renewable energy).
- Economies of scale still matter, and the distributed deployment of solar PV or energy storage is not cost-effective in all contexts and locations.

An interesting case study (from PJM market) explained how Distributed Energy Resources (DER) can participate today in the PJM market, the opportunities for the future, and the challenges for DER that PJM is currently working upon through a stakeholder process.

Regulators must facilitate the entry of new suppliers into the market to ensure a broader choice for consumers by removing barriers to entry, and to ensure regulation keeps pace with innovation in the rapidly evolving market. Competitive wholesale markets offer the best way for consumers and producers to come together and trade at competitive and fair prices. Europe's regulators believe that the real time value of energy should be the basis of electricity price signals that all participants face. This means that prices should be allowed to reflect scarcity (as proposed by the European Commission in its legislative proposals). This is important to stimulate innovation, unlock the demand side and encourage flexibility. This in turn will facilitate the transition towards more green energy in a cost-effective manner.

Next Steps

This first CEER-NARUC International Forum offered energy regulatory experts the opportunity to discuss global trends, learn about regulatory developments, and debate common challenges such as cyber security, integrating renewables into the market and developing consumer-centric energy markets.

Regulators participating in the event confirmed their commitment to best practice regulation through on-going communication and coordination including through their EU-US regulatory roundtables, further joint CEER-NARUC events, their ongoing participation in the International Confederation of Energy Regulators (ICER[2]) and the upcoming **World Forum on Energy Regulation VII in Mexico in March 2018**.

Notes for Editors:

1. The CEER-NARUC International Forum, an open public debate, followed the 13th EU-US Energy Regulators Roundtable on 26 April 2017. The EU-US roundtable is a closed event for energy regulators only from Europe and the U.S. held every 18 months. Established in 2000, the Council of European Energy Regulators (CEER) is a not-for-profit association in which Europe's independent national regulators of electricity and gas voluntarily cooperate to protect consumers' interests and to facilitate the creation of a single, competitive, efficient and sustainable internal market for gas and electricity in Europe (www.ceer.eu). The National Association of Regulatory Utility Commissioners (NARUC) is a non-profit organisation dedicated to representing the State public service commissions who regulate the utilities that provide essential services such as energy, telecommunications, water, and transportation (www.naruc.org).

2. ICER brings together in a formal and structured dialogue the energy regulatory authorities from across 6 continents and 200 regulatory agencies, including both the most developed markets and those which are still taking shape. It is composed of 11 regional regulatory associations as well as the regulatory authorities for Australia and Switzerland. ICER's goal is to serve as an effective tool to help improve, worldwide, public and policy-maker awareness and understanding of energy regulation and its role in addressing a wide spectrum of socio-economic, environmental and market issues. More information on the ICER website www.icer-regulators.net.