

CONFERENCE DAILY

Day 2

Tuesday, September 24, 2019

**SESSION III:
 ENERGY TRANSITION AND
 DECENTRALIZATION II**

Session III of the conference was opened with a presentation from *Jean-Francois Carenc*, Chairman of the Energy Regulatory Commission of France who spoke on regulation of natural gas sector in the energy transition, noting important structural changes – made in consultation with the market – that brought notable progress to the gas sector. Mr. Carenc spoke of regional integration, noting that the European system as a whole is larger than the sum of its parts and highlighted that transport tariffs must be based on legitimate costs. ENTSO-E and ENTSO-G are already cooperating to prepare 10-year development plans however much progress has yet to be done in decarbonizing the gas sector.

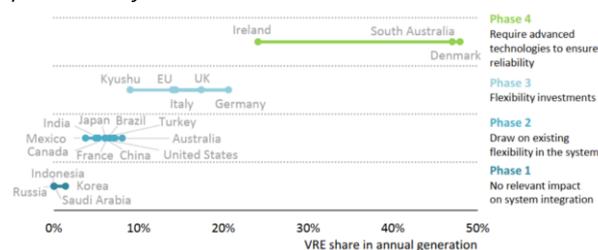
Figure 1. Session III discussing Energy Transition and Decentralization



The discussion was moderated by *Andrijana Nelkova-Chuchuk*, Commissioner at the Energy and Water Services Regulatory Commission of North Macedonia and comprised of *Zsuzsanna Pató*, Senior Associate at the Regulatory Assistance Project, *Dafe Akpeneye*, Commissioner for Legal, Licensing and Compliance Issues at the Nigerian Electricity Regulatory Commission and *Qais Al Zakwani*, Executive Director of the Authority of Electricity Regulation of Oman.

Ms. Pató noted that, according to the new policies scenario of IEA, variable wind and solar resources will make up for a significant portion of resources in the future however the difficulty of accommodating additional RES in the power system depends largely on the specifics of the country.

Figure 2. IEA diagram showing various phases of renewable penetration and possible system measures, presented by Ms. Zsuzsanna Pató



Reduced participation of synchronous generation in the power system will reduce inertia and the outcome of this is that, to be able to manage the rate of frequency change, some load needs to be curtailed, implying loss of welfare. The effect of the overall capacity mix is that mid-merit and baseload

capacity plants will have reduced capacity factors. The consequence of this will be that the economic viability of these plants will become questionable and raise concerns of stranded costs. Ms. Pató noted that cheap integration of renewables requires alignment and rethinking of the power system, meaning that it requires rethinking regulation as well. Flexibility will be a key factor in the success of integrating additional VREs and demand response can be a highly effective tool to improve system flexibility. However, this requires revisiting the market designs to ensure that they adequately remunerate flexibility.

Mr. Dafe Akpeneye provided a presentation on the importance of regulatory policy in enhancing electrification, focusing on a case study of his home country of Nigeria. Nigeria will become the 3rd most populous country in the world in the next 20-30 years. However, there are presently low electrification rates and, considering the increased competitiveness of renewable technology solutions, the country concluded that off-grid solutions could help facilitate electrification efforts, with the national renewable energy strategy envisaging 90% electrification by 2030. Mr. Akpeneye noted the regulatory framework is crucial and – in the case of Nigeria – the approach in tariffs and licensing should distinguish between different sizes of Mini-Grids. A light-handed regulatory framework is very important however there is more to be done to address billing/payment challenges that arise from operating in remote areas with limited mobile payment platforms, enhance access to finance and to improve the identification of viable sites for deployment of mini-grids.

Mr. Qais Al-Zakwani provided a presentation on empowering customers through utilization of rooftop solar resources in Oman. The country enjoys some of the largest solar resources in the world and the policy employed seeks to utilize this potential and overcome the fact that electricity tariffs are subsidized, removing incentives for solar development. The subsidies provided from the government were re-routed to renewable projects.

The design of the scheme envisages that customers provide an initial payment contribution that is equivalent to savings over 4 years. This means that the investment made will be recovered within this period and the customer can enjoy lower electricity bills for the rest of the years up to the end of the asset life.

The discussion that followed pointed to the fact that, in many countries, renewable penetration was policy-driven and questioned the extent to which buy-in was achieved by the energy sector. It was pointed out that the removal of subsidies from industry and governmental subsidies in Oman ensured that there is buy-in from the sector through lower costs of service.

The last panel on the energy transition discussed the impact of the energy transition and electrification on future power systems and was moderated by *Nick Wagner*, President of NARUC and Board Member at Iowa Utilities Board. Panel participants included *David Boyd*, Vice President of Government and Regulatory Affairs at MISO and member of ERRA's Strategic Advisory Board, *Kenneth Hanninen*, Director of Finnish Energy Industries, *Gatis Junghans*, Member of the Board at AS Augstsprieguma tikls of Latvia and *Haci Ali Ulutas*, Vice President of the Energy Market Regulatory Authority of Turkey.

Figure 3. Energy Transition and Decentralization Panel discussing TSO-DSO cooperation



Mr. Junghans noted there are a multitude of solutions to facilitate the energy transition,

including soft solutions – working on the market design and regulatory framework – and hardware solutions – where TSOs have an important role to play. There is great importance for TSO-DSO cooperation in the future as both entities will have to work almost as a single entity. All solutions developed in the future need to be developed as a common integrated solution, otherwise there will be difficulties for TSOs to monitor and to tap into the resources that are connected to the distribution grid. The new Clean Energy Package gives the DSO a new role to manage congestions actively by using ancillary services. In practice this means that, if the DSO starts to manage congestions, this might affect the TSO's overall system balancing or vice-versa. Mr. Ulutas noted that transmission and distribution companies will have to work together and be designed as a whole, which is why EMRA is providing R&D projects to TSOs and DSOs in order to provide balancing services by the DSO and to provide ancillary services to the TSO.

The charging methodology for connecting distribution embedded generation was also discussed, questioning – in the case of the US – the readiness of the distribution grid to accommodate additional generation units and the extent to which any required investments are paid by the said generators.

Mr. Junghans noted that by 2020, nearly 60% of the EU meters will be smart meters, therefore, sufficient infrastructure is there for distributed resources to provide flexibility services. However, incentives and market places are yet to be developed. This is what is missing at the moment – the rules of the game are not clear and incentives are not apparent. Clean energy package provides an opportunity for aggregators to enter the market however this is not yet the case that in every country in the EU.

European Commission's long-term strategy includes nearly full decarbonisation by 2050, which means power sector will need to be nearly carbon neutral by that time. The topic is which technology will allow the most cost-efficient transition. So far, ENTSO-E observes that sector coupling appears to be a cost-effective way for the transition,

specifically for power to gas, power to transport and power to heat, possibly. All these measures together might provide possibilities for an improved overall system stability. Sector coupling, therefore, is a topic to study for possible solutions of the challenges posed by the energy transition.

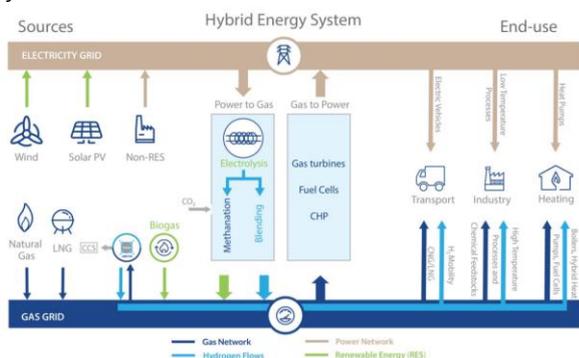
SESSION IV: REDEFINING THE ROLE OF NATURAL GAS IN THE ENERGY TRANSITION

The last session of the conference focused on the role of natural gas in the energy transition, moderated by *Konstantin Petrov*, Managing Consultant at DNV GL- Energy, Germany and featured presentations from *Sara Piskor*, Communication and Policy Manager at ENTSO-G and *Dariusz Kryczka*, Co-Chair of the LNG Study Group at Gas Infrastructure Europe. The panel discussed how utilization will look in the future and reviewed possible issues of underutilization of gas infrastructure and possible stranding issues.

Speaking on the future role of gas, Dr. Petrov noted that, in the last years, the natural gas industry underwent a period of uncertainty regarding its future role in the energy mix, despite its friendly environmental properties compared to other fossil fuels. These uncertainties were mainly caused by the low prices of coal and oil and low carbon prices. However, gas can still have an active role in the decarbonisation process and not only in the 'classical' role of gas but also in the form of 'new gasses' or renewable gasses and in other forms such as LNG and CNG. Furthermore, natural gas can generally be considered as a competitive fuel both in land and in maritime transportation. In terms of fuel availability, the infrastructure for refuelling using CNG, LNG and bunkering is not well developed but can and should develop better. The emission reduction potential is better than other types of fuel such as petrol. These developments require policy steering and regulatory support, one of which is innovation. Regulators need to introduce explicit incentives for innovation and decarbonisation as part of the regulatory framework.

Sara Piskor of ENTSO-G provided a presentation on reducing the cost of decarbonising the energy system through sector coupling. Ms. Piskor noted that in the past couple of years it was not clear what will be the narrative of the future of natural gas and that gas TSOs in Europe have very different starting points in the decarbonisation agenda. However, all members need to propose solutions for their governments, including on the gas side, that have to do with supporting member states in achieving environmentally-friendly energy portfolios. There are three different pathways these could proceed in the future. One could include using methane, as a molecule, requiring smaller structural changes. The second pathway could be blending, which includes both methane and hydrogen molecules in the system, with hydrogen coming from different feedstock. The third pathway could be pure hydrogen, however, there is no simple answer on how the switch from natural gas to hydrogen could be done as the most vulnerable part of the system could possibly be the compressors.

Figure 4. Sara Piskor's presentation on hybrid energy systems



ENTSO-G is approaching net measures together with stakeholders and cooperating with all segments of the value chain to understand what will be the required value of commitment of the gas value chain in the decarbonisation process, which will require significant research. Grids can be ready for the transition if member states support the usage of the hybrid system.

Dariusz Kryczka provided a presentation on Small-Scale LNG and its prospects as an alternative fuel. Mr. Kryczka highlighted the high potential of LNG,

pointing to the fact that it is the fastest growing gas supply source globally due to the fact that it is affordable and has environmentally-friendly properties. It can potentially contribute GHG reduction of up to 25%, reduces emissions of nitrogen oxides and emits 0% sulphur oxide. There is significant potential for the LNG sector, especially considering there are no issues around capacities, with 21 FSRU terminals planned and 6 already under construction in Europe. However new regulatory frameworks for LNG terminals in Europe need to provide for a proper implementation of DAFI and to classify small scale LNG infrastructure projects as sustainable within the European Commission's sustainable finance programme.

Figure 5. Panelist of panel discussion on the future of gas infrastructure

Moderator:

 **Konstantin PETROV** | Managing Consultant, DNV GL – Energy, Germany

Panel Members:

 **Nugzar DVALI** | Deputy Head of Legal Department, Georgian Gas Transportation Company, Georgia

 **Edit FARKAS** | Head of Natural Gas Supervision and Price Regulation Department, Hungarian Energy and Public Utility Regulatory Authority, Hungary

 **Paul KJELLANDER** | Second Vice President, NARUC; President, Idaho Public Utilities Commission, USA

 **Ahmet TURKOGLU** | CEO, EXIST (Turkish Energy Exchange), Turkey

The last panel session was moderated by *Konstantin Petrov* and featured *Nugzar Dvali*, Deputy Head of Legal Department at the Georgian Gas Transportation Company, *Edit Farkas*, Head of Natural Gas Supervision and Price Regulation Department at the Hungarian Energy and Public Utility Regulatory Authority, *Paul Kjellander*, Second Vice President at NARUC and President of Idaho Public Utilities Commission and *Ahmet Turkoglu*, CEO of EXIST, the Turkish Energy Exchange. The panel discussed asset stranding in the natural gas sector, its major causes, controllability and parties that should bear possible

stranded costs. Mr. Konstantin Petrov noted that coordination can prevent stranding, including inter-sectoral planning and cross-border incentives.

Mr. Kjellander brought to surface the fact that the natural gas sector in California is concerned about asset stranding due to the process of electrification and decarbonisation, negatively affecting the confidence of DSOs in investing in replacing aging infrastructure. The policy push towards decarbonisation and electrification, therefore, puts DSOs in a difficult position of uncertainty. This requires the regulator to reflect about potentially accelerating the depreciation policy in order to facilitate financing. It was noted that this measure is taken with particular care of not discouraging gas consumption in the short run due to higher revenue recovery as a result of the accelerated depreciation measure.

Mr. Turkoglu highlighted that the risk of asset stranding in Turkey is relatively low, with the country more than doubling the natural gas consumption in the last 15 years and the natural gas sector continuing to invest in storage capacities and regasification units. The additional penetration of renewables may appear as a problem but – in reality – it presents an opportunity for renewables, especially for balancing purposes for renewables.

Asset stranding is not considered a risk in Georgia and – as a result – there are large gas infrastructure projects. The gasification project includes 200 settlements which will access natural gas infrastructure within the next 3 years. Presently there are no signals that the gas infrastructure will be stranded in the near future. However, if it does happen, then the regulatory authority has sufficient competence to regulate the issue.

Finally, the panel discussed cost-recovery principles of stranded assets, noting that regulators may consider recovering stranded assets as gas licensees are required to provide services to customers while also recognizing that sufficient incentives need to be provided to utilities to mitigate stranding risks.

The 19th ERRA Energy Regulation and Investment Conference will take place on September 28-29 in Tbilisi, Georgia.



In his closing remarks, Mr. Mart Ots, Chairman of ERRA, summarized key messages of the conference. ■

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