24th World Energy Congress

Proceedings for a LTES session at the Clean Energy Ministerial side event

"Regional integration and roles of scenarios and long-term planning"

15:35 – 16:10, September 11, 2019, Capital suite #7

This side event for the 24th World Energy Congress was organised by CEM with multiple contributing organisations, including IRENA. The event was made up of sessions with the unifying theme of Regional Integration and provided many different perspectives throughout, such as LTES planning. The session organized by IRENA focused on regional integration and roles of scenario and long-term planning. It followed the scene setting session, where Mr Francesco la Camera, the Director General of IRENA, gave a scene setting speech about major trends of the energy transformation in order to provide context. This summary will report on the session led by IRENA for the LTES Campaign[1]. The session was attended by about 60 people.

Background:

Regional energy integration – via regional interconnection of energy systems, standardisation of rules and regulations, creation of regional markets – is known to potentially bring economic benefits in building and operating more resilient energy systems. Many energy integration scenarios have been developed to demonstrate the benefits of having access to cheaper resources elsewhere, sharing reserves, taking advantage of differences in time profiles of generation and load, among others. These benefits are particularly relevant for bringing more renewable energy into the power system. Institutionally, such scenarios support political discussion and could potentially provide a starting point to facilitate coordination among countries that seek to reform their power sectors.

From the activities conducted under the first year of the LTES campaign, it has been evidenced that scenarios used for national policymaking differ greatly in how they reflect regional cooperation aspects. While long-term energy policymaking is a matter of national sovereignty and security, the development of the energy sector in neighbouring countries may have strong impacts on how the national energy system evolves. The question that we explore in this session is how regional long-term energy scenarios can better inform national long-term energy scenarios and vice versa.

For more information on the LTES campaign visit: https://www.irena.org/energytransition/Energy-Transition-Scenarios-Network/Long-term-Energy-Scenarios-Campaign, or contact: ltes@irena.org

[1] For the proceedings of the overall side event, please visit the CEM secretariat web-site (http://www.cleanenergyministerial.org/).

Programme

15.35 – 16.10 Panel discussion on 'Regional integration and roles of scenarios and long-term planning' (session organized by IRENA as a coordinator/Operating Agent of the CEM Long-term Scenarios for the Energy Transition campaign)

Moderator: Dr Asami Miketa, Senior Programme Officer, Innovation and Technology Centre, International Renewable Energy Agency (IRENA), Germany

Welcoming remarks: Francesco la Camera, Director General IRENA [statement read by Dr Pablo Carvajal, Associate Programme Officer, Clean Energy Transition, IRENA].

Panellists:

Dr Ahmed Badr
Executive Director, Regional Center for Renewable Energy and Energy Efficiency (RCREEE), Egypt

Dr Antonio Pinheiro Silveira
Corporate Vice President of Infrastructure of the Andean Development Corporation – Development Bank of Latin America (CAF), Venezuela

Dr Bernardo Vargas Gisbone
President, CEO of Interconexión Eléctrica S.A. E.S.P. (ISA), Colombia

Summary of Panel Discussion

Ellina Levina (Manager of Partnerships, CEM), introduced the first session, in which IRENA, the operating agent for the Long-Term Energy Scenario (LTES) campaign, presents a panel on "Regional integration and roles of scenarios and long-term planning". She welcomed Dr Asami Miketa (Senior Program Officer, IRENA) as moderator of this session.

Dr Asami Miketa began by explaining that the LTES Campaign has discussed new ways of developing and using scenarios for the clean energy transition, as well as facilitating best practice exchanges between CEM countries and beyond. She directed this session's discussion to the role of LTES in regional integration for the clean energy transition.

Francesco la Camera [statements read by Dr Pablo Carvajal] introduced the topic of the session – LTES in the context of regional integration. He stated that LTES have been around a long time but in the context of the transition these scenarios must adapt to capture the particularities of the transition. He explained that many scenarios of regional energy integration have been developed to demonstrate the benefits of integration, but how regional cooperation aspects are reflected in national scenarios differ greatly across countries – as was evidenced through the first year of the LTES campaign. He pointed out the importance of developments in the energy sectors of neighbouring countries, as they may have strong impacts on how national energy systems evolve optimally. In this context the question that will be explored in this session is: how regional LTES can better inform national LTES, and vice versa.

Dr Asami Miketa welcomed three panellists who represent different perspectives of the energy sector: Dr Ahmed Badr represents the governmental perspective from the Arab region, Dr Antonio Silveira provides a financial institution perspective, and Dr Bernardo Vargas provides a transmission companies perspective. She framed the first question for the panellists: **"How is your institution or your sector using LTES in decision making? What type of information provided by national scenarios are most relevant for your decision making?"**

Dr Bernardo Vargas began by describing ISA as a transmission company based in Colombia, with a wide presence across Latin America, in countries such as Peru, Brazil, Bolivia and Chile. This industry is based on long-term (e.g. 30 years) government concessions therefore the only way forward is to have long-term planning. In 2018, ISA developed LTES to look forward to 2050, resulting in a strategy for 2030 that has been implemented at ISA from January this year. He acknowledged the importance of this discussion on LTES, particularly in the context of renewable energy anticipated to be a big player in the future.

Dr Ahmed Badr started out by portraying economic development in the Arab region as a range from very high-income countries to countries with ongoing conflicts and issues; LTES and regional integration need to consider these diversities and serve all countries. He identified countries in conflicts within the region, such as Yemen, relying on their neighbours for energy – this exemplifies the need for using highly flexible LTES and regional integration. The importance of regional integration is not just physical but also sharing in identifying the factors of commonality (e.g., market failure condition).

Dr Antonio Pinheiro Silveira described CAF as a 50-year-old development bank, which started with the Andean region and is now expanding to serve all Latin America, who's balance sheet goes up to 37 billion dollars – 5 billion of which is focused on the energy sector. As a unilateral bank they're dedicated to integrating the regions and it is increasingly relevant for the energy sector. The region has achieved energy security in terms of self-sufficiency, and now with renewable energy a new reality is emerging in which the exchange of energy in the region is an economically attractive option for countries. CAF supports bilateral initiatives with technical cooperation, especially with Argentina-Chile and Bolivia-Brazil, in exchange of electric power and natural gas, together with OLADE and regional energy integration commission (CIER). He continued to disclose that CAF developed scenarios in 2017 which are now being revised due to the huge uptake of renewables in the system over the last five years.

Dr Asami Miketa guided the discussion deeper into the view of regional integration and the role of energy scenarios. She noted the perception that national LTES do not always reflect the regional aspects. She addressed the following question to Dr Badr: **"What is your regional experience with national LTES neglecting regional aspects and can you share some good practices?"**

Dr Ahmed Badr mentioned that the Arab region is in the process of looking at different ways of regional integration, and the region has started to use different dimensions of regional integration, i.e., not only physicality but also areas of commonality. For example, there's a unique long-term initiative in Lebanon called National Energy Efficiency and Renewable Energy Action Plan (NEEREA Plan), which is a national financing mechanism initiated by the Central Bank of Lebanon (BDL) in partnership with the Lebanese Ministry of Energy and Water represented by its Lebanese Center for Energy Conservation (LCEC) and has comprehensive support by RCREEE; via BDL, NEEREA Plan finances solar, wind, biomass and hydro projects in addition to energy efficiency measures and green building projects. This initiative enabled stable decision making promoting renewable energy projects with support from developing banks. In this case, physical regional integration contributed to increasing the renewable energy share. RCREEE developed and is currently managing its own Artificial Intelligence RE database as its Pan-Arab (MENA) Regional RE Investment Platform i.e. TAQAWAY (www.taqaway.net), with over 3 million pieces of information from energy systems in the Arab region updated daily. This information allows them to review the areas of market failures/commonality every two months, enabling solutions to be identified and applied at a

regional level. Countries can learn from each other. Dr Badr provided the example of RCREEE's cooperation with the European Commission's large investment initiatives, and market failures around de-risking investment has been identified in Lebanon, Jordan and Tunisia. Solutions are implemented by using NDCs to make concession loans. Another example is the Chinese model through the one belt and one road initiative, in which GEIDCO aims at building intercontinental energy transition networks. As a sub-initiative, the Chinese government provides grants to set up 1000 solar PV projects of the size between 10-20 MW as a part of interconnections. He concluded that LTES must overcome conflict cases – RCREEE managed to implement LTES with Yemen, which is now the fourth highest region for increasing VRE shares, exemplifying that even in high conflict countries LTES can work when areas of commonality are integrated and access to finance is provided.

Dr Asami Miketa asked Dr Silveira, as a representative from a development bank that works with governments **"what approaches are there for better coordination with regional and national planning from the perspective of a development bank?"**

Dr Antonio Pinheiro Silveira acknowledged that within the region LTES planning is mostly undertaken by governments and the private sector, and the two should share experiences, harmonise scenarios and planning. This depends on the long-term commitment among the different governments of the region. He also expressed the need for financial support in order to support the efforts for regional coordination for the clean energy transition. He identified one big issue in the South American region for more supranational planning as the lack of leadership for entire regional initiatives. Right now, the path for exchange is too bilateral, in the future CAF will support some more general formulation of regional cooperation that allows for multilateral exchange, opening a space for a regional market.

Dr Asami Miketa asked Dr Vargas, given that ISA develops transmission scenarios, from the business perspective **"what are the key elements missing from national and regional scenarios that will benefit decision making?"**

Dr Bernardo Vargas established that ISA, being the company with the widest presence in the region, should be the integrator of energy transactions between countries. He provided a brief history of regional integration planning: the 80s and 90s saw big generation programs and created a contract-based system for transactions of energy which are mostly bilateral; however countries in Central America have pushed for multilateral arrangements (SIEPAC); there's few instances of true integration and one such example is the interconnection between Colombia and Ecuador who exchange energy at an hourly fashion without a contract-based arrangement; however, there is still very few transactions between countries in Latin America, exemplifying the key elements missing from integrated regional planning. To answer the question 'Why has it not happened?' Dr Vargas suggested that geographical differences, technical aspects of integrating systems as well as political aspects are the cause but highlighted that the eve of new energies requires organisations such as IRENA, World Bank, United Nations, Inter-American Development Bank and CAF to present long-term regional scenarios as a very important part of renewable resource integration because this will give stability to VRE. He summarised - top-down support is also needed to

create more drive from the bottom up for regional integration, and to foster the potential gains for resiliency in growing renewable footprints for entire regions.

Dr Asami Miketa posed the last question to all panellists: **"what is the role of regional integration in the context of a clean energy transition?"**

Dr Antonio Pinheiro Silveira suggested that the big challenge for the region is transportation, since emissions are bad for health, and the best pathway to overcome this issue is electrifying transport. He referred to CAF's role supporting studies for Colombia-Panama regional integration of energy exchange and interpreted the uptake in electric vehicles as a boost in the demand for electric power and the exchange of power between regions – hence, the need for regional integration LTES is growing.

Dr Ahmed Badr highlighted that the very specific demographic and geographic character of the Arabic region, in comparison to Latin America, doesn't allow for long transmission lines but instead requires mini grids. He identified that in this region, renewable energy, disruptive technology, mini and small grids are very important; market deregulation is required to allow for more VRE in the transmission network – regional integration will be key to supporting this. Currently, a trial between several countries needs more time because there is a difference in technical capacities, and thus will take about 10 to15 years to be successful. Dr Badr concluded that for this region LTES require economic integration and common solutions, as well as the allowance for free tax agreements for local components to increase installations of renewable energy at this scale.

Dr Bernardo Vargas made three brief points on what is required for regional integration in the context of the clean energy transition; the first one was the top-down approach already mentioned; second, an innovation component to transmission lines for lower costs that support the bottom up approach, such as the High-Voltage Direct Current (HVDC) technology; lastly development of market alternatives that support the transactions that are happening – as well as political will.

Dr Asami Miketa invited engagement from the audience.

Professor Sambo from Nigeria stated that Africa is now up to 40% in access to power systems, he believes that this is an opportunity for Africa to take a clean pathway to energy security and so urged the CEM to go to the developing world, where they are very much needed.

Dr Asami Miketa reassured that IRENA works with CEM but has 160 members and so is attempting to bridge between CEM members and the bigger constituency of IRENA. To conclude she thanked the panellists for their participation.