

Report from the Ministerial Roundtable

‘Towards an Economy Fuelled by Renewable Power: Innovation for the Next Stage in the Power Sector Transformation’

The Director-General of IRENA, Mr. Adnan Z. Amin, provided an introduction of the topic, referring to the ongoing developments in renewable energy concerning dramatic cost reduction, scaling up of deployment, and market growth, among others. The Director-General highlighted that this session was an open discussion for advanced, emerging and developing markets, with the purpose of exchanging experiences around cutting-edge innovations that can be widely disseminated to accelerate the global transformation of the power sector.

The Ministerial Roundtable brought together Ministers, high-level representatives from countries and energy leaders from the private sector. The discussions illustrated how renewable energy has gone from a niche sector to become mainstream in recent years. There was a general consensus that renewables will become the predominant energy sources of the future, forming the backbone of global energy systems. It was stressed that innovation has played and will continue to play a critical role in the power sector transformation process.

Certain characteristics of renewable energy technologies have fostered an extension of the frontiers of innovation in the energy sector. These characteristics include: the modularity of the technology, faster construction times, distribution of smaller generation units and variability of energy resources. These features have spurred innovations across the sector’s value chain, have been open to cross fertilization from non-energy industrial sectors, have made renewables the most dynamic and competitive option in the energy sector today.

The Roundtable’s wide-ranging discussions converged on an agreement, from private and public sector representatives, that innovation will continue to drive the transformation of the energy sector, not only in power but across the entire energy landscape. While innovation in technology will continue to play a major role, innovation in policy, regulation, market design, business models, finance and infrastructure will be equally essential.

In the session it was discussed that future opportunities for high-impact technological innovation may include seasonal storage, the electrification of end-use sectors (e.g. fuelling industry processes and passenger transport with renewable power), bioenergy to specifically decarbonise the aviation and freight transport sectors, and the potential use of hydrogen from renewable sources as an energy carrier for industries. Additionally, it was underlined that digitalisation has already become a driver for emerging innovations, fostering new business models, greater flexibility in power systems and closer interaction between all stakeholders in energy markets.

Roundtable participants called to invest more effort in innovation beyond technology. For example, participants discussed the need for innovation in regulatory frameworks that will simplify processes for project development, such as land acquisition, grid connection and permitting. Public and private entities need to come together to address existing issues and identify innovative approaches.

The discussions stressed the crucial role of innovation in policy to accelerate the deployment of

renewable technologies. This was illustrated by:

- a. The evolution of policy measures from pricing incentives towards the removal of subsidies and the introduction of competitive auctions, which have diffused into a number of different markets – this creates a virtuous cycle that reduces cost, which increases areas of application, and creates even more sources of innovation.
- b. The establishment of forward-looking policies and simplified frameworks to provide visible, long-term trajectories. It was noted that changes to legislation are acceptable if revisited on a clear schedule, but not applied retroactively.

It was also raised that new planning practices in renewable energy must consider the pace of change in the sector, and prioritize the acceleration of related administrative processes. The following were mentioned as examples of good practice in this area:

- c. Proactive grid planning and expansion that accounts for, and potentially precedes, the deployment of renewable energy, for the system to benefit from better interconnection and more efficient operation
- d. Digitalisation of the low voltage grid, currently utilized in some countries
- e. Unbundling of generation and transmission services to foster market competitiveness

Concerning innovation in markets and infrastructure, the importance of regional collaboration and integration was highlighted. Governments should consider an innovative approach to cross-border transmission, and regional market structure. This could broaden investment perspectives in terms of efficiency and optimal resource allocation. Such a model could be particularly attractive for developing markets, which can elicit increased funds if integrated into larger regional bodies.

Participants from developed energy markets stated that advanced technological innovations in front-runner countries should not distract other nations from exploiting their current capabilities. Technologies to drive the transformation of the power sector are available, and innovation will continue to make them even more competitive and efficient. Governments in such circumstances should place greater emphasis on, for example, innovative market designs. New market designs that send effective price signals typically result in the deployment of the most cost-effective technology and flexibility options without the need for pervasive government intervention.

In addition to points raised above, the role of gas as a transition fuel, either from fossil or renewable sources, was discussed at various points throughout the discussion. The general view is that gas might play such a transition role, but the question remains how long the transition period will last. As several interventions noted, the period may be too short to create a business case for significant investments in gas infrastructure, particularly in light the rapid innovation occurring among renewable and other advanced technologies.

Ministers, heads of delegation and private sector leaders emphasized the relevant role of IRENA, in supporting countries in such a capacity, providing and analysing information with the aim of facilitating countries an appropriate platform to share experiences and best practices on the ground of innovation, depending on local conditions.