

## **Ministerial Roundtable “Transformative Innovation”**

Ninth session of the Assembly – 12 January 2019, 15.00 – 18.00

### **Overview**

1. Innovation is the engine powering the energy transition and the pace of innovation around the world is accelerating. A multitude of innovation solutions are being trialled and adopted in a wide range of countries for a wide range of applications across energy systems.
2. The power sector has been leading the way with rapid cost reductions in key renewable energy technologies of solar and wind. The price of PV modules dropped by more than 80% and the cost of electricity from solar PV fell by almost 75% in the years between 2009 and 2018. The price of wind turbines fell by about 50% (depending on the market) over the same period, and the costs of onshore wind electricity dropped by almost 25% between 2010 and 2018. Renewable power generation accounted for an estimated quarter of total global power generation in 2017, with an impressive growth in recent years in variable renewable energy (VRE), wind and PV technologies. By the end of 2016, the installed capacity of renewables exceeded 2 000 gigawatts (GW), constituting more than 28% of the total power-generating capacity. The bulk of this was from hydropower (56%), followed by wind power (23%) and solar power, mostly solar PV (15%).
3. Nonetheless, the energy transition needs a further acceleration of this growth. According to IRENA’s analysis, a decarbonization of the power sector, in line with the climate objectives outlined in the Paris Agreement, would require a share of renewable energy in total electricity generation of 85% by 2050. Furthermore, the share of electricity consumed in the total energy demand of end-use sectors -industry, transport and buildings- need to double from around 20% in 2015 to 40% in 2050.
4. Innovation efforts are now broadening to include the development and deployment of solutions that create the flexibility needed to integrate high share of variable renewable energy and increasingly to electrify the end-use sectors of transport, buildings and industry.
5. IRENA has conducted an in-depth analysis of *‘the innovation landscape for the integration of variable renewable power’* mapping and categorising the many examples of innovations and innovative solutions being created by pioneering companies, backed by far-sighted governments around the world. The ‘Innovation Landscape’ report, and its accompanying detailed online resources, will provide decision makers with a clear, easily navigable but comprehensive guide to the diversity of innovations in use or development in many countries across the globe. The report will explain how those innovations are being combined to create solutions suitable for a wide range of power-systems and will provide a clear framework to help decision makers make informed judgments on the most relevant solutions for their needs and what to explore further. Key insights from that work will be shared with roundtable participants as an input into the discussions.
6. The diversity of innovations emerging and the speed at which they are being adopted will have far reaching implication for the configuration and operation of both energy systems and the roles of all actors involved. Utilities are moving from selling electricity to providing additional services to customers. Consumers are becoming electricity producers. New entrants such as ICT and car-manufacturing companies can also provide services to power systems.



7. Policy makers and business leaders always seek to better understand what innovations are emerging and the opportunities that are resulting from this change, as well as the risks associated with it. That understanding will help countries to define the best strategies to achieve their national energy and development goals while maximizing the integration of increasingly low cost renewable energy sources.
8. This Ministerial Roundtable (MRT) will comprise a mix of public and private sector decision makers. It will build on the discussions at IRENA's Innovation Week in 2018 and will be informed by the insights from the IRENA's Innovation Landscape Report. Participants will share their insights into the types of innovations emerging and will discuss how those innovations are changing the ways in which energy systems are configured and operate and how they are beginning to change roles for many actors across energy systems. Discussion will explore the potential implications of that transformative change, the lessons learned to date from adapting to those changes, their perspectives on what further changes will be needed, and the role of different actors in adapting to that.

### **Objectives**

9. The MRT will provide Ministers, high level officials and key private sector decision makers, who are involved in planning the future of their national energy systems, greater insights into emerging innovations that are enabling a renewable-powered future and how those innovations are changing energy systems and the role of all energy system actors – utilities, consumers, SMEs, system operators, regulators and others. It will also facilitate an exchange of experiences on what are the strategies being implemented to adopt and adapt to those innovations and how actors can benefit from the new opportunities and mitigate the associated risks. The discussions will inspire both public and private sector actors to embrace and accelerate those changes in pursuit of a renewable-powered future.

### **Questions for discussion**

- What are the most significant barriers to the broader uptake of promising innovative solutions?
- What has worked in getting innovative projects deployed and what more can far-sighted governments and innovative companies do to accelerate the adoption of innovations?
- What are the most significant changes we can expect in the roles of energy system actors i.e. utilities, consumers, SMEs, system operators, regulators and others?
- What steps do governments, regulators and companies need to be taking now to begin to adapt to these changes?