

INTERNATIONAL RENEWABLE ENERGY AGENCY

Fifteenth meeting of the Council

Abu Dhabi, 8 – 9 May 2018

**Note of the Director-General
The Global Energy Transformation**

1. In 2017, IRENA released its first analysis of global pathways to decarbonize the energy sector in line with the 2°C aim of the 2015 Paris Agreement. The main objective of that study was to develop pathways that looked into limiting global warming to below 2°C with 66% probability by the end of the century. The resulting analysis was documented in a report entitled “Perspectives for the Energy Transition – Investment Needs for a Low-Carbon Energy System”.

2. In April 2018, IRENA is releasing the second edition of the global decarbonisation report. The report provides an updated perspective based on latest analysis and markets developments, and an overview on the key needs of the energy transformation. The report is being launched during the Berlin Energy Transition Dialogue.

3. The report analyses key energy transition topics, recent market developments and country/regional trends. The report presents the results of the revised REmap analysis focused on identifying a decarbonisation pathway to 2050 for the 2°C objective. It also provides insights into the social and macroeconomic benefits and investment needs of the energy transformation. It addresses the key priority areas and solutions needed to scale up investment and accelerate the energy transformation. Finally, this report details the transition pathway and provides practical guidance on how to manage the transformation in a manner that maximises economic and social benefits, wealth creation and inclusion of all stakeholders.

4. The report highlights that the REmap pathway is technically feasible and economically beneficial. In order to keep global temperature rise to below 2°C with 66% probability, energy efficiency and renewable energy would make up more than 90% of the emission reductions. While the world is making steps in the right direction, action is, however, far too slow to meet global climate objectives. The global share of renewable electricity generation would need to increase to 85%, and two-thirds of total energy would need to come from renewable sources by 2050. Cumulative investment in the energy system until 2050 would have to total USD 120 trillion, 26 USD trillion more than under current and planned policies in the Reference Case. GDP would be 1% larger in 2050 compared to reference case and 11.6 million additional jobs would be created within the energy sector worldwide by 2050. The overall welfare indicator would be 15% higher than the reference case by 2050, with the improvement mainly dominated by the social and environmental welfare dimensions. Significant electrification is required, and particular focus on heating and transport is needed.

5. The report highlights the fact that the energy transformation cannot be considered in isolation of the socio-economic system on which it is deployed. The overall transformation process and outcome can be enhanced by addressing the appropriate improvements into both the energy transition pathway and the socio-economic system structure, and by maximizing the synergies of the interactions between them. The report evaluates the socio-economic footprint of the REmap pathway deployed on the current socio-economic system, highlighting the drivers of the final results.

6. Energy transformation also has wider benefits in sustainable development terms. It can enable affordable and universal energy access and it can result in a higher energy security and more diverse energy supply. Policies to promote a just and fair transformation can maximise the benefits for different countries, regions and communities.

Objective of the session

7. The objective of this session is to provide an overview of IRENA's latest energy transformation report and discuss its key insights. The expected outcome is to gather Members' views on how to drive the energy transformation so as to meet national and global policy objectives, including suggestions on how IRENA can further support these efforts.

Guiding questions

- How can energy and climate policy be aligned to enable a transformation of the energy system that is required to achieve energy and climate goals?
- How can policies and planning to foster the innovation required in end use sectors (transport, industry, buildings) be best coordinated?
- What are the possible mechanisms to realize the required investments in renewable energy and energy efficiency?
- What can governments do in order to encourage active private sector and wider social engagement in the energy transformation?
- How can governments address the interactions between the energy and socioeconomic systems to maximize the benefits of the transformation and ensure a fair and just transition?