

Tenth session of the IRENA Assembly

Enhancing Dialogue among Countries with High Shares of Renewables in their Energy Systems

10 January 2020, 16:30 – 18:00, Room A2
St. Regis Hotel, Saadiyat Island, Abu Dhabi

Background

Upon request from several Members, IRENA is in the process of developing an initiative through the establishment of a multi-stakeholder platform for eliciting dialogue among countries facing similar challenges due to high shares of renewable energy already achieved in their electricity systems. In this context, IRENA has identified six specific areas of discussion that Members may consider addressing in the context of this initiative:

1. *Energy markets and regulations* need to be restructured to ensure that the system is fit for technologies and interactions that are very different from the ones of the fossil fuel era. They need to be designed to guarantee long-term investment security to renewable energy technologies, to foster the development of products that hedge against variability and uncertainty, and to accommodate cross-border exchanges. New stakeholders should be allowed to participate, enabling contributions of flexible resources as energy storage, prosumers, demand response, and sector coupling.
2. *Energy system planning* needs to be approached in a more holistic manner that covers different planning time-horizons. It is critical that planning approaches are internally consistent across time horizons and processes are well-coordinated. Good practice would plan for energy system integration and sector coupling in advance as a means to increase the transition's ambition with an appropriate use of resources. Consistency of energy system roadmaps with climate goals should also be key across energy system planning activities and can be used as a yardstick to characterise the proposed energy plans. With proper energy system planning, the socio-economic implications of energy system evolution can be evaluated to gain insights on the potential consequences of implementing such plans and inform energy planning and policy making processes to enable implementation.
3. *Cross-border interconnection* of power systems and regional integration would be helpful in dealing with variability of renewable generation output but also supporting an optimised development of renewable power generation infrastructure. Efforts are needed to address the implications of energy planning beyond national borders, reflecting the global nature of climate change, and addressing the required action for a successful transition.
4. *Energy system operation* needs to be equipped with adequate tools for resource forecasting and for monitoring and controlling energy systems in real time. Digitalisation is important in facilitating systems to operate under growing amounts of decentralised renewable energy.



5. *Cross-sectoral strategies* are needed to ensure that renewable energy development contributes to the achievement of other Sustainable Development Goals (SDGs), particularly in the sectors such as food security, water resources and health while avoiding negative impact in these areas and contributing to public acceptance of renewable energy.
6. *Systemic innovation* is creating an increasing range of innovative solutions that help ensure the cost-effective integration of renewable energy in power systems and increasingly in end-use sectors. Such solutions are enabled by technology innovation but must be integrated with innovations in market design, business models and system operation. The optimum solutions are dependent on the specifics of the national energy system. There is scope however for countries to learn from each other in understanding what solutions are available now and potentially available soon, how best to adopt them and how to ensure further innovation can be fostered and utilised.

A preliminary discussion on the proposed initiative took place in at the margins of the eighteenth meeting of the IRENA Council in November 2019, where a number of Members confirmed interest and noted the importance on the initiative. Furthermore, Members responded positively to the proposed implementation approach based on thematic working groups of practitioners. They also highlighted the importance of convening meetings regularly to assess the interlinkages among different streams of work within the overall system approach.

Accordingly, IRENA proposes to start with three working groups of practitioners to test the implementation approach, including that are on: (i) *Energy system planning*; (ii) *Electricity markets and regulation*; and (iii) *Systemic Innovation*. Additional groups of practitioners may later be considered, based on expressions of interest. The working groups of practitioners will promote exchanges of best practices and discuss potential strategies to address challenges of having high shares of renewables in the energy systems. Such strategies can then be disseminated and adapted by other countries in a tailored manner.

Furthermore, regular meetings at the initiative-level are envisaged to take place in conjunction with IRENA's Governing Bodies meetings or otherwise to enable synergies and complementarities among the groups and consideration of cross-cutting strategies. IRENA is envisaged to have the role of coordinator of the initiative, engaging with interested Member states, facilitating discussions among the different groups and assisting in systematising this knowledge. Additionally, the Agency will facilitate meetings for peer-to-peer exchange, through virtual and physical meetings; provide effective means for information exchange, for instance using opt-in mailing lists and hubs for online file exchange, where useful. IRENA also has a substantial body of analytical work on all the above topics, insights from which could be made available, if considered useful to inform discussions and future IRENA analysis.

Objective

At the event, Members will be invited to provide feedback on the proposed implementation approach of the initiative and actively participate in the substantive discussions on the selected priority area of "Systemic Innovation".

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