IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Virtual Regional Meeting on the Role of Power Systems and Markets for Achieving the Low-Carbon Transition

Hosted by

The International Atomic Energy Agency
IAEA Headquarters
Vienna, Austria

12 to 16 July 2021

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Information Sheet

Purpose

The purpose of this meeting is to discuss short- to mid-term impacts of long-term low carbon energy strategies on current and future power systems and markets.

Working Language(s)

The working language(s) of the event will be English.

Deadline for Nominations

Nominations received after **31 May 2021** will not be considered.

Background

Energy scenarios with ambitious decarbonization targets towards net zero greenhouse gas emissions point towards significantly increasing shares of variable renewable electricity such as wind and PV. Given their low marginal costs and absence of fuel costs, they are dispatched before fossil fuel-fired power plants. The consequent electricity price reductions resulting from increasing shares of variable renewables challenge the effectiveness of current power markets to incentivize future investments, while the variability introduced by these technologies challenges the reliable operation of the power system. In increasingly integrated energy markets, the impacts of such national decarbonisation strategies may well spill over to neighbouring countries. Adjustments in (regional) market designs and instruments may thus be needed to trigger investments in both, low-carbon technologies, including nuclear power, as well as power system flexibility, including grid infrastructure, storage, demand-side management and a more flexible operation of generation technologies. The resulting mix of investments will need to be well balanced to ensure a cost-effective transition to a low-carbon energy future while ensuring the system's adequacy and reliability.

The purpose of this meeting is thus to improve the participants' understanding of the short- to mid-term impacts of long-term low carbon energy strategies on current and future power systems and markets. Further, the associated role and impacts related to different energy technologies, including nuclear power, will be discussed. Selected approaches and tools for assessing the power system over a short- to mid-term time horizon will be introduced in more detail. The event will further provide an opportunity to share regional experiences and practices in the participating Member States.

The meeting is organised as part of the TC project RER2017 "Assessing the Role of Low Carbon Energy Technologies for Climate Change Mitigation". This project was designed to support the development of energy strategies for climate change mitigation in line with the Paris Agreement, including country plans for the implementation of Nationally Determined Contributions (NDC) and National Energy and Climate Plans (NECPs). It is a platform to discuss the main features and challenges of such plans and supports assessments of the economic feasibility of energy technology mixes, including nuclear power, and considering political, socio-economic, commercial, technical, and financial issues, as well as associated risks. Through a series of meetings, trainings and expert assignments, the project contributes to exchanging experience and best practices among Member States and to strengthening capacities for energy and climate strategy development. The project also offers additional support to those Member States engaged in the development of national studies in line with the project's objectives.

Expected Outputs

The expected main output of this event is an improved understanding of the impacts of long-term low carbon energy strategies on current and future power systems and markets, as well as the role of the energy technologies that form these power systems. This understanding is expected to inform the development of effective national energy and climate plans and strategies.

The output of this event will contribute to the overall achievement of the energy planning output of the TC project RER2017, i.e., strengthened expertise to evaluate and assess (low-carbon) energy technologies and their contribution to climate change mitigation to support defining commitments under the Paris Agreement. It will be encouraged that the presented approaches are applied as part of ongoing or future national studies.

Scope and Nature

The event will introduce participants to approaches for assessing power systems and markets and challenges they may face when realising strategies for achieving NECPs and NDCs under the Paris Agreement. Participants will be introduced to selected approaches and tools for assessing the power system over a short- to mid-term time horizon (months to years). These approaches and tools will serve to gain related insights, such as on the role if individual technologies, related costs, implications for system reliability and associated emissions. National circumstances and strategies will also be discussed, drawing on experiences and practices in the participating countries.

The meeting will comprise lectures, demonstration sessions and discussions. The lectures will be given both by invited experts and IAEA staff members, which may be complemented by individual presentations given by selected meeting participants. Demonstration sessions will serve to provide a first introduction to selected analytical tools to deepen the participants' understanding of approaches for assessing power systems.

Participants should be well aware of their countries' energy and climate strategies and plans, as well as related implications on power markets and power system operation. As a further preparation to this training, participants are expected to do some background research on the composition of their power system and the impact of the current market structure on the operation of the current power system and on future investments. If available, participants should be ready to share related national information, including on the power system models applied in their country, national data regarding cost and performance of energy technologies, such as power plants, and options to enhance the system's flexibility, such as storage, the electricity grid and demand-side management.

Participants are encouraged to reach out to relevant national institutions to share the findings of this event and apply the discussed approaches as part of currently ongoing or upcoming studies. Separate future national and/or sub-regional events may be organised to support those participants from Member States engaged in such studies.

Participation

The meeting is open to participants from each of the participating Member States of RER2017.

Participants' Qualifications and Experience

Participants should be specialists in strategic energy/electricity sector analysis and/or environment/ climate policy analysis, either from institutions mandated with the development of related national plans and strategies or from power sector institutions such as market authorities and utilities. Ideally, they are involved in assessments of the power system and energy markets. They can have professions such as engineer, economist, or environmental specialist.

The nomination of three participants per Member State is encouraged, (i) one from an institution involved in power system assessments, (ii) one from an institution in charge of developing energy plans and strategies and (iii) one from an institution in charge of developing climate strategies, such as NDCs, NECPs and other related long-term strategies.

Priority will be given to participants which demonstrate that they intend to apply the approaches discussed in this event as part of national studies.

Application Procedure

Candidates wishing to apply for this event should follow the steps below:

1. Access the InTouch+ home page (https://intouchplus.iaea.org) using the candidate's existing Nucleus username and password. If the candidate is not a registered Nucleus user, she/he must create a Nucleus account (https://websso.iaea.org/IM/UserRegistrationPage.aspx) before proceeding with the event application process below.

2. On the InTouch + platform, the candidate must:
   a. Finalize or update her/his personal details, provide sufficient information to establish the required qualifications regarding education, language skills and work experience ('Profile' tab) and upload relevant supporting documents;
   b. Search for the relevant technical cooperation event (EVT2100995) under the 'My Eligible Events' tab, answer the mandatory questions and lastly submit the application to the required authority.

NOTE: Completed applications need to be approved by the relevant national authority, i.e. the National Liaison Office, and submitted to the IAEA through the established official channels by the provided designation deadline.

For additional support on how to apply for an event, please refer to the InTouch+ Help page. Any issues or queries related to InTouch+ can be addressed to InTouchPlus.Contact-Point@iaea.org.

Should online application submission not be possible, candidates may download the nomination form for the meeting from the IAEA website.

NOTE: A medical certificate signed by a registered medical practitioner dated not more than four months prior to starting date of the event must be submitted by candidates when applying for a) events with a duration exceeding one month, and/or b) all candidates over the age of 65 regardless of the event duration.

Administrative and Financial Arrangements

Nominating authorities will be informed in due course of the names of the candidates who have been selected and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants will receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses. They will also receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency American Express, or a travel grant, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

Note for female participants

Any woman engaged by the IAEA for work or training should notify the IAEA on becoming aware that she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

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