



Regional Meeting on Electricity Markets and the Energy Transition

Hosted by

The Government of Republic of Moldova

through the

Institute of Power Engineering

Chisinau, Republic of Moldova

8-12 September 2025

Ref. No.: **EVT2500800**

Information Sheet

Purpose

The purpose of the event is to discuss the evolving role of electricity markets in the energy transition, focusing on regional realities, market design challenges, and sector integration, while facilitating knowledge exchange among policymakers, system operators, and stakeholders.

Working Language(s)

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

Deadline for Nominations

Nominations received after **4 July 2025** will not be considered.

Project Background

The Paris Agreement sets a target for holding the increase in the global average temperature to well below 2°C above pre-industrial levels, preferably below 1.5°C. To achieve this target, the Paris Agreement calls on all countries to prepare increasingly ambitious Nationally Determined Contributions (NDCs). NDCs outline concrete targets, policies and measures that governments aim to implement as a contribution to global climate action. As the major contributor to greenhouse gas emissions, the energy sector is central to these efforts. Recognising this importance and in line with the NDCs, the EU requires its Member States to develop Integrated National Energy and Climate Plans (NECPs) from 2021 to 2030. Energy Community MSs are also recommended to follow this approach.

The TC project RER2018 “Analyzing Low Carbon Pathways towards an Ambitious Decarbonized Energy Sector by 2050” builds on the previous TC project RER2017. It 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 (NDCs) and – as relevant for EU and Energy Community countries – integrated National Energy and Climate Plans (NECPs). It further aims to support Member States in their preparation for submitting related updates, which are due for NDCs by 2025 and for NECPs by 2023 and 2024, respectively, for the draft and final updates.

The project is a platform to discuss the main features and challenges of such strategies and plans. It supports assessments of energy pathways and associated technology mixes, including nuclear power. 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 power sector is expected to play a key role in decarbonisation process, with a progressive electrification of the energy, transport and industrial sectors combined with a deep decarbonization of the electricity generation mix. Achieving an (almost) full decarbonization of the power sector requires a complete switch away from unabated fossil fuel use and a large deployment of low-carbon energy sources, variable renewable technologies, such as wind and solar photovoltaic, alongside with dispatchable sources such as hydroelectric power, nuclear and fossil-fuel technologies with carbon capture, utilization and sequestration (CCUS).

The development of interconnections, innovative storage technologies, demand side measures as well as the use of energy carriers such hydrogen are also likely to play a major role in the power systems of the future. The power sector is expected to evolve towards a larger, more complex, and more integrated system, with a tighter coupling with the broad energy sector.

However, the presence of a significant share of variable sources into the system, poses not only technical, but also important economic challenges. Current power systems in the European region are liberalized and open. Natural monopoly activities like transmission and distribution are regulated, while generation (including prosumers), trade and supply are deregulated and market exposed. Large share of technologies with variable costs near or equal to zero, can lead to increasing number of hours with low or negative electricity prices. The need for ancillary services and capacity mechanisms increases. This requires appropriate power market design and rules so that market outcomes can provide timely and clear price signals for investments into certain technology mix that will assure, not just energy supply, but also power system stability and uninterrupted operation.

Low-carbon dispatchable technologies such as nuclear power and potentially fossil fuels with CCS are likely to still be a part of future decarbonized power systems. However, their role may evolve, with a potential reduction of achievable load factors and increasing requirements for flexibility and for the provision of other system services. Economic viability of changed roles will depend on the design of future power markets, as well as potential broader deployment of nuclear option.

Prosumers are increasingly transforming electricity market dynamics by challenging traditional market structures, and necessitating reforms that can recognize their role in the provision of flexibility services and contribution to distribution system stability.

Market design decisions, including price formation mechanisms, capacity remuneration schemes, renewable support policies and ancillary market arrangements, directly impact cross-border flows, price convergence and investment signals in connected regions. Increasing integration of European electricity markets amplifies these interdependencies. Thus, effective market design requires aligning national market reforms with broader regional system objectives.

Expected Outputs

The expected main output of this event is an improved understanding of the current and future power markets with emphasis on operation and development of power systems with high share of variable renewables and potential impact on large scale generators, including nuclear power, as well as the potential role of nuclear power in such systems. In line with this, the event will build capacities for the analysis of energy/electricity supply options and scenarios with a focus on needed elements of power markets to support energy transition.

This event will contribute to the overall outcome of the TC project RER2018, i.e., strengthened institutional capacities to develop national energy and climate plans and strategies to support defining commitments under the Paris Agreement and identification of economically viable and technically suitable technological solutions.

Scope and Nature

The event will introduce participants to power market design and operation, interactions of various market players, impact of markets on economic viability of large scale generators, and approaches to analyse power markets with high penetration of variable power generation. Participants are expected to share their national experiences in power market development, information on policies as well as modelling capabilities in this subject.

Event will comprise of lectures, example work sessions and discussions. The lectures will be given by both invited experts and IAEA staff members. Work sessions will focus on supporting participants in developing understanding of the issue and potential modelling approaches to improve power market modelling. **Participants should come equipped with laptops.**

To facilitate the update and development of national case studies, participants need to be aware of their countries' energy and climate strategies and plans, specifically regarding the potential role of various low carbon power generation options. As a further preparation to this meeting, participants are expected to do some background research on the contribution of various technological options, like solar, wind and energy storages, as well as nuclear power including SMRs. They should further identify potential topics of their national interest – e.g. power market development and operation, potential for variable sources integration, use of storages, demand related participation (prosumers, balancing).

Participation

The event is open to participants from the participating Member States of the regional project RER2018 'Analyzing Low Carbon Pathways towards an Ambitious Decarbonized Energy Sector by 2050'.

Participants' Qualifications and Experience

Participants should be specialists in energy & electricity sector/market planning, power market operators, energy regulators, utilities and similar. Ideally, they are involved in the development of power markets. They can be engineers, economists, power market operators and related experts.

It is encouraged to nominate up to three participants per Member State from different institutions supporting analysis and development of power generation and transmission system (e.g., representative of national utilities, ministries, research/support organisations, energy planning institutions, market operators). Final number of selected candidates will depend on participants qualifications, relevance to the event and overall logistical limits. In any case not more than 35 participants (non-local and local) will be selected.

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. Download and complete the [Designation of Beneficiary and Emergency Contact Form](#), and upload to InTouch+ ('Profile' tab under the personal section) specifying the document name. If already provided, kindly discard this step; and
 - c. Search for the relevant technical cooperation event (EVT2500800) 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 training course 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 AX Travel Management, or a travel allowance, 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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