IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Workshop on Economic Competitiveness, Marketability, and Bankability of Micro and Small Modular Reactor Technologies

Hosted by

The International Atomic Energy Agency (IAEA)
IAEA Headquarters
Vienna, Austria

15 – 18 August 2022, VIC room CR4

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Information Sheet

Purpose

The purpose of the event is to exchange information and views on issues of economic competitiveness, marketability, and bankability of Small Modular Reactor (SMR) technologies, including Micro Reactors (MR).

Working Language(s)

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

Deadline for Nominations

Nominations received after **30 June 2022**, will not be considered.

Project Background

Micro and Small Modular Reactors (MR/SMR) can be used to generate electricity, process heat and ancillary services in evolving power grids, relying increasingly on variable generation from renewables. Their reduced size, upfront costs, and construction times would make them easier to deploy compared to large nuclear power plants.

MR/SMR projects are currently under development. Their costs and delivery times need to be appropriately estimated, analysed, and optimised. Specific business models need to be developed to meet market needs and expectations while creating value for different stakeholders. New financing strategies are also required to support developers in the critical phases of the project, from conception to commercialisation. Finally, the economic impact associated with the development and deployment of SMR needs to be quantified and communicated to gain support from the government and society.

The IAEA initiated, in 2021, a Coordinated Research Project (CRP) entitled "Economic Appraisal of SMR Projects: Methodologies and Applications", addressing the challenges highlighted in the previous paragraph. In the context of this collaborative project, a framework for the economic assessment of SMR development and deployment is currently being co-developed, accounting for:

- Differences in technology readiness levels.
- Specifics of the technologies being considered.
- Potential end-users, revenue streams, and risk profiles attached to each concept.

This workshop is closely tied to the coordinated research effort and builds upon the preliminary results of the CRP. Meeting participants — both technology developers and potential end-users of SMR — are invited to present their perspectives, highlighting technical-economic challenges related to SMR development and deployment and sharing lessons learned from large reactor projects.

Expected Outputs

This workshop is expected to increase understanding among participating Member States of the costs, benefits, and other key economic and financial indicators associated with Micro and Small Modular Reactors for a variety of applications (electricity generation and ancillary services but also non-electric applications such as desalination and hydrogen production).

Participation

The training course is open to a maximum of **30 participants** from the following countries and international organisations:

Algeria, Argentina, Brazil, Bulgaria, Chile, China, Croatia, Czech Republic, Estonia, Ghana, Greece, Hungary, Indonesia, Jordan, Kenya, Kuwait, Mexico, Morocco, Philippines, Poland, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Sri Lanka, Tunisia, Türkiye, Ukraine.

And other participants on expert capacity from some developed /donors' countries or international organisations.

Scope and Nature

The workshop will focus on different Micro and Small Modular Reactor (MR/SMR) technology lines, developing topics such as:

- Supply chain options.
- Infrastructure issues.
- Safety standards applicable to MR/SMR.
- Licensability of the MR/SMR technology.

The implications on the economic competitiveness, marketability, and bankability of MR/SMR technologies will be addressed during the event. The workshop will also include a session covering funding and financing issues associated with the development and deployment of MR/SMR.

Participants' Qualifications and Experience

Participants should be knowledgeable about their country's national strategy and specific plans for Micro and Small Modular Reactor projects and willing to share their experience and lessons learned in assessing the economic competitiveness, marketability, and bankability of nuclear new build projects in their respective countries.

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 (**EVT2204092**) 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:

https://www.iaea.org/services/technical-cooperation-programme/how-to-participate.

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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