



International Workshop on Infrastructure Development Issues for Small Modular Reactors & Microreactors Deployment, including Policy, Strategy, and Key Aspects

Hosted by

The International Atomic Energy Agency IAEA Headquarters
Vienna, Austria

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Information Sheet

Purpose

The purpose of this workshop is to provide a platform for senior officials and managers from government ministries, nuclear energy programme implementing organizations, regulatory bodies, and nuclear power plant owners/operators to meet and discuss infrastructure development issues.

Working Language

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

Deadline for Nominations

Nominations received after 4 October 2023 will not be considered.

Project Background

To meet the growing demand for energy and to mitigate global climate challenge, the interest in Small Modular Reactors (SMRs) and Micro-Reactors (MRs) is growing, especially with regions inaccessible to large electricity grids and regions with smaller electricity grids that need technology options deployed incrementally to closely match increasing energy demand. SMRs and MRs are also viable options for users that need beyond electricity supply, e.g., district heating, desalination, industrial process heat, as well as hydrogen. The purpose of the “INT2023 Supporting member States’ Capacity Building on Small Modular Reactors and Micro-reactors and their Technology and Applications as a Contribution of Nuclear Power to the Mitigation of Climate Change” project is to provide broad support to Member States in the development and deployment of SMRs and MRs. The project provides a broad range of forum to enable effective capacity building through training and technology transfer activities on all aspects of SMR development. The project also covers the emerging MRs, the deployment of SMRs for electric and non-electric applications, and the coupling of such nuclear systems with renewables in integrated energy systems. The aim of the project is to enable national stakeholders to gain enhanced understanding on key characteristics of SMR and MR technologies and their applications, and to formulate, in line with international safety standards, countries’ specific legal and regulatory frameworks, and generic user requirements and criteria for SMR technologies.

Event Background

Member States must consider a wide range of infrastructure issues to introduce nuclear power in a country. The IAEA in 2007 published the Milestones in the Development of a National Infrastructure for Nuclear Power, which has three phases of development laid out in a sequential process to develop a nuclear power programme. The publication provides a detailed description of the full range of infrastructure issues to be addressed and the expected level of achievement for each issue by the end of each phase. The Milestones in the Development of a National Infrastructure for Nuclear Power, or the ‘Milestones Approach’, has been well received and is widely used. Its framework and terminology have been broadly adopted.

In 2015, the Agency issued the first revision of the Milestones Approach. The revision considered lessons learned from the 2011 Fukushima Daiichi accident, the IAEA Action Plan on Nuclear Safety implementation, and lessons learned from 17 Integrated Nuclear Infrastructure Review (INIR) missions conducted until the revision is prepared. For example, the original publication was framed in the context of a competitive bidding process, assuming this would apply in most cases. However, other approaches have been implemented in embarking countries, such as strategic partners, sole suppliers, and direct negotiations through intergovernmental agreements. The revised publication reflects this new business model.

Six years after revision 1 of the ‘Milestone Approach, two embarking countries, developed their national programmes based on it and started operating their first units. Three more embarking countries are constructing their first NPPs. Other embarking countries are negotiating contracts with technology providers or are in an advanced stage of infrastructure development.

Recent interest among embarking and expanding countries on SMRs has requested the IAEA to support the application of the Milestones Approach to SMRs. A Technical Meeting held in 2020 concluded that

the 19 issues of the Milestones Approach also apply to programmes based on SMRs; however, some aspects of infrastructure could be implemented or considered differently. Those discussions have been introduced as Annex - “Specific Infrastructure Considerations for SMRs” in the second revision of the Milestones publication, which has been published as pre-print on the IAEA website and is waiting for final editing and printing.

Scope and Nature

During this (5-day) workshop, participants will receive lectures from experts and participate in interactive discussions. The workshop will focus on developing infrastructure, as outlined in the revised IAEA publication Milestones in the Development of a National Infrastructure for a Nuclear Power Programme focused on Small Modular Reactors (SMRs) and Microreactors (MRs), to include consideration of policies, strategies, and key aspects for deploying these novel technologies. The workshop will address the global nuclear power outlook and SMR trends, including nuclear safety, security, and safeguards (3S) considerations. Speakers with direct experience implementing infrastructure development activities for national nuclear power programme will highlight the how, why, and when policy, strategies, and key aspects of deploying SMRs and Microreactors. Short presentations on specific topics will stimulate ideas and discussions. Individual experiences of some aspects of infrastructure development in the Member States may be presented during panel discussion sessions, allowing for intense and engaging discussions. As previously mentioned, the workshop will focus on the policy and strategies for consideration by newcomer or expanding countries developing nuclear power development programmes, with an emphasis on the following topics:

- National Position
- Nuclear Safety
- Management:
- Funding and Financing
- Legal Framework
- Regulatory Framework
- Human Resource Development:
- Siting
- Fuel Cycle
- Waste Management:
- Emergency Preparedness and Response
- Industrial Involvement:

Expected outputs

The expected output of the workshop is to strengthen knowledge and understanding in the following areas:

- The IAEA Milestones approach and the 19 nuclear infrastructure issues;
- IAEA services in support of the development of nuclear infrastructure;
- Participants will participate in the exchange experiences to identifying and develop policies and strategies for some specific infrastructure issues, such as national position, legal and regulatory frameworks, financing for SMRs, etc.; and
- Participants will gain a better understanding of the evolving vendor deployment models and their potential impacts on legal and regulatory frameworks.

Participation

The event is open to up to 35 participants from the following Member States participating in the INT/2/023 that have expressed an interest in developing a nuclear power programme:

Algeria, Argentina, Belarus, Bolivia, Brazil, Bulgaria, China, Croatia, Czech Republic, Egypt, Estonia, Ethiopia, Ghana, Greece, Guatemala, Hungary, Indonesia, Islamic Republic of Iran, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Latvia, Libya, Lithuania, Madagascar, Malaysia, Mexico, Morocco, Myanmar, Namibia, Nigeria, Pakistan, Peru, Philippines, Poland, Qatar, Romania, Rwanda, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Sri Lanka, Sudan, Thailand, Tunisia, Türkiye, United Republic of Tanzania, Uzbekistan, Zambia.

At no cost to the IAEA, participants from the following countries can also be considered:

Australia, Canada, Czech Republic, France, Italy, Japan, Belgium, Denmark, Spain, China, Finland, India, Republic of Korea, South Africa, Russian Federation, United Kingdom, United States of America

Participants' Qualification and Experience

This workshop's target audience is those working in Member States' government ministries and agencies, regulatory bodies, and nuclear energy programme implementing organizations (NEPIOs) considering, developing, and expanding a nuclear power programme for SMRs and Microreactors.

The workshop will be conducted in English, and candidates should have sufficient English proficiency to participate in the workshop without difficulty.

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 (EVT2301516) 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 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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