IAEA

*Atoms for Peace and Development*

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International Atomic Energy Agency
Agence internationale de l'énergie atomique
Международное агентство по атомной энергии
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National Liaison Officers /

National Coordinators

2024-10-08

Subject: Interregional Workshop on Infrastructure Development to Support Small Modular Reactors Focusing on High Temperature Gas Cooled Reactors (HTGRs) and Other Relevant Nuclear Activities, Beijing and Rongcheng City, China, from 12 to 14 December 2024

Dear National Liaison Officer / National Coordinator,

I am pleased to inform you that the International Atomic Energy Agency (IAEA) is organizing the above event under the IAEA technical cooperation project 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".

The purpose of the event is to discuss infrastructure development of a small modular reactor (SMR) with special focus on HTGRs as well as other relevant nuclear activities required to support infrastructure development issues for SMRs.

The attached Information Sheet provides further details, including technical and administrative aspects of the event. Selection of participants will be in accordance with IAEA procedures. Member States are strongly encouraged to identify women participants.

The IAEA will provide non-local participants with a round-trip air ticket based on the most direct and economical route between the airport nearest the participant's residence and Beijing and Rongcheng City or a travel allowance to purchase an air ticket. Travel details will be agreed with the participants upon receipt of their official nomination. Participants will also receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses for the duration of the event in line with IAEA rules and procedures.

**Occupational Exposure to Radiation:** This activity may involve occupational exposure to radiation. Therefore, persons nominated are required to duly complete and return the attached Occupational Exposure History (OEH) form. The IAEA will provide participants in due course with a dosimeter to monitor their occupational exposure during this event.

We would appreciate receiving your country's nominations by **15 October 2024** through the IAEA's InTouch+ platform (https://Intouchplus.iaea.org). Should this not be possible, applicants may download the Nomination Form for the course from the IAEA's webpage. Completed forms must be endorsed by the relevant government authority and may be sent to the IAEA, preferably by email to Official Mail - IAEA Mail address Official.Mail@iaea.org, with copy to Mr Jing Zhang J.Zhang@iaea.org. Please be advised that late nominations or replacements of participants after the closing date for nominations will not be accepted.

**NOTE: For the event, NLOs are kindly encouraged to nominate high level officials and/or senior managers who are directly involved in energy policy, strategy and planning of introduction and expansion of SMRs in the country's government authorities/ministries, regulatory bodies, NEPIOs and project management. The nominees can be national decision makers of up to 3 candidates who play a leading role in SMRs and infrastructure development and/or capacity building.**

**NOTE: This event is organised in conjunction with the *Interregional Workshop on Key Considerations regarding Infrastructure Development to Support Small Modular Reactors (SMRs) and Microreactors Deployment* (ME-INT2023-2404844-) taking place from 16 to 20 Dec.2024. Therefore, for this event, the same candidates should be nominated as for ME-INT2023-2404844.**

We look forward to receiving your early response.

Yours sincerely,

Jing Zhang
Programme Management Officer
Division for Europe
Department of Technical Cooperation

Enclosures: Information Sheet
OEH Form

IAEA
International Atomic Energy Agency
*Atoms for Peace and Development*

# Interregional Workshop on Infrastructure Development to Support Small Modular Reactors Focusing on High Temperature Gas Cooled Reactors (HTGRs) and Other Relevant Nuclear Activities

**Hosted by**

The Government of China

**through the**

Beijing and Rongcheng City, China

**12 to 14 December 2024**

**Ref. No.: ME-INT2023-2405907**

# Information Sheet

## Purpose

The purpose of the event is to discuss infrastructure development of a small modular reactor (SMR) with special focus on HTGRs as well as other relevant nuclear activities required to support infrastructure development issues for SMRs.

## Working Language(s)

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

## Deadline for Nominations

Nominations received after **15 October 2024** 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 production. To address the global interest to SMRs and MRs the IAEA launched the Interregional Project 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" with the objective to provide broad support to Member States in the development and deployment of SMRs and MRs. The project serves as a 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. It helps 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 targeting SMRs 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 partnership, 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 technical tour and relevant introduction session, the participants will visit two nuclear reactor sites in China: the microreactor in Beijing and the High Temperature Reactor-Pebble-bed Module (HTR-PM). The microreactor in Beijing designed for flexibility, safety, and efficiency in power generation. These reactors are often used in remote locations or for specialized industrial applications due to their compact size and scalability. The second stop will be the HTR-PM. This reactor represents the next generation of high-temperature gas-cooled reactors (HTGRs) and uses spherical fuel elements to enable high levels of safety and efficiency. These visits will offer participants an opportunity to explore both SMR technology, as well as pre-session to the following week workshop on the same topic 16-20 December in Hainan, China.

## Expected outputs:

The expected output of the visit is to strengthen knowledge and understanding in the SMR technology.

## Participation

The event is open to up to 60 participants from the following Member States participating in the INT/2/023 that have expressed an interest in developing a nuclear power programme targeting SMRs:

Algeria, El-Salvador, Estonia, Ethiopia, Guatemala, Indonesia, Jamaica, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Malaysia, Mongolia, Morocco, Myanmar, Nigeria, Niger, Paraguay, Philippines, Senegal, Serbia, Singapore, Sri-Lanka, Thailand, Tunisia, Tanzania, Uganda, Venezuela, Zambia and Zimbabwe.

**NOTE: For the event, NLOs are kindly encouraged to nominate high level officials and/or senior managers who are directly involved in energy policy, strategy and planning of introduction and expansion of SMRs in the country's government authorities/ministries, regulatory bodies, NEPIOs and project management. The nominees can be national decision makers of up to 3 candidates who play a leading role in SMRs and infrastructure development and/or capacity building.**

**NOTE: This event is organised in conjunction with the *Interregional Workshop on Key Considerations regarding Infrastructure Development to Support Small Modular Reactors (SMRs) and Microreactors Deployment* (ME-INT2023-2404844-) taking place from 16 to 20 Dec.2024. Therefore, for this event, the same candidates should be nominated as for ME-INT2023-2404844.**

## Participants' Qualifications and Experience

This special technical visit'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 , including energy policy and strategy senior makers, officials and senior managers who are involving planning and management of SMRs projects in the countries.

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

The tour is relevant for targeted countries who are preparing to introduce SMRs.

## Occupational Exposure to Radiation

This event may involve occupational exposure to radiation. Therefore, candidates are required to duly complete and return the Occupational Exposure History (OEH) form upon applying for the event. The IAEA will provide selected participants in due course with a dosimeter to monitor their occupational exposure during this event.

## 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 (EVT2405907) 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.

# IAEA Contacts

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