



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

Joint IAEA–Argonne National Laboratory Training Course on the Identification of Viable Sustainable Development Paths Using Energy System Assessment Tools

**Hosted by the
Government of the United States of America (USA)**

**through the
Argonne National Laboratory**

Lemont, Illinois, United States of America

12–23 August 2024

Ref. No.: EVT2304472

Information Sheet

Introduction

The International Atomic Energy Agency's (IAEA's) Planning and Economic Studies Section is helping Member States strengthen their capabilities to elaborate sustainable energy strategies and identify the potential role for energy technologies, including nuclear power. For this purpose, the Planning and Economic Studies Section has developed a set of analytical tools and methodologies for integrated energy planning, which are being used by more than 130 countries for their energy studies.

Appropriate methodologies and tools are needed to conduct the necessary assessments for developing national and sub-national plans, respecting national specifics and country-driven contributions to global energy and climate related goals. Many countries have announced their intention to reach Net-Zero or Carbon Neutral targets by mid-century, while exploring all demand and supply patterns, including deployment of nuclear options, not only for power generation, but for other potential applications (e.g. cogeneration, hydrogen production).

The Training Course is part of the Atoms4NetZero initiative launched by the IAEA Director General at COP27 and is a follow-up to the introductory training on this subject held in August 2023 where the IAEA and Net Zero World Initiative (NZW) demonstrated tools and methodologies provided through dedicated capacity building programs, for assessment and comparison of various energy system development paths for reducing related greenhouse gas emissions. The training provided overview of various tools capabilities and focused on several modeling areas, e.g. decarbonization of hard to abate sectors (e.g. buildings, transport, various energy intensive industrial processes) and power system development and operation (e.g. energy storages, variability and flexibility representation in the long-term models).

This Training Course will focus on modelling of the full-scale national case studies within the selected portfolio of tools, i.e. IAEA's tool MESSAGE, as well as other system-wide tools such as GCAM, LEAP, and TIMES, for decarbonization pathway analysis and identify elements and approaches how the different tools could be used to analyze transition paths towards low carbon energy systems of the future, including reaching net zero emission target. Various energy systems structures and interactions of low carbon technologies will be analyzed, including potential role of nuclear power, sector coupling and deep electrification options.

The event will consist of lectures, exercises and working sessions related to the use of the IAEA's tool MESSAGE, and parallel exercises and working sessions on the GCAM, LEAP, and TIMES tools.

The training will be conducted in-person.

Objectives

The objectives of the training course are to:

- Review the national case studies developed with the IAEA's tool MESSAGE, as well as the GCAM, LEAP, and TIMES tools; identify and implement case study improvements and apply tools to analyze national transition strategies towards future low carbon energy systems; and compare various paths and technological options, including nuclear power, sector coupling and deep electrification.
- Identify specific modelling approaches to be applied (energy system-wide analyses) to support and inform decision making on national plans for climate change mitigation, create alternative scenarios, run sensitivity analysis, extract, analyze, and present the results.
- Enhance the knowledge and skills of national analysts and modelers in assessing cost-effective energy technologies, including nuclear power, for developing sustainable energy strategies and plans and advising on adequate energy policies including reaching net-zero targets.

The event will also provide information on the Atoms4NetZero initiative launched by the IAEA Director General at COP27 in November 2022, which is open to Member States and organizations wishing to join the initiative.

Target Audience

Invited international energy system modelling experts with advanced knowledge of the IAEA's tools (emphasis on the MESSAGE tool) or other equivalent energy system assessment tools, such as GCAM, LEAP, and TIMES, that are used to analyze long-term development and transition towards low carbon or net-zero future. Training is open to national planning teams consisting of up to 2 (two) members who are specialists in energy modelling and techno-economic analysis. National teams are required to bring up-to-

date national case studies developed in one of the tools (MESSAGE, GCAM, LEAP or TIMES). These initial case studies will be further improved and used to analyze alternative development scenarios during hands-on breakout modeling sessions. The Training Course will be preceded by an online preparatory meeting during which national teams will present the structure of their case studies and outline planned/needed improvements to be implemented during the training. The existence of up-to-date, detailed case studies and a plan for case study improvements is a prerequisite for participation in the Training Course.

Working Language(s)

English.

Participation and Registration

All persons wishing to participate in the event have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend.

In order to be designated by an IAEA Member State or invited organization, participants are requested to submit their application via the InTouch+ platform (<https://intouchplus.iaea.org>) to the competent national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA by **1 May 2024**, following the registration procedure in InTouch+:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
 - Persons with an existing NUCLEUS account can sign in to the platform with their username and password;
 - Persons without an existing NUCLEUS account can register [here](#).
2. Once signed in, prospective participants can use the InTouch+ platform to:
 - Complete or update their personal details under ‘Complete Profile’ and upload the relevant supporting documents;
 - Search for the relevant event under the ‘My Eligible Events’ tab;
 - Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating Authority’ (if an invited organization is not listed, please contact InTouchPlus.Contact-Point@iaea.org);
 - If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations);
 - Based on the data input, the InTouch+ platform will automatically generate the Participation Form (Form A) and/or the Grant Application Form (Form C);
 - Submit their application.

Once submitted through the InTouch+ platform, the application, together with the auto-generated form(s), will be transmitted automatically to the required authority for approval. If approved, the application, together with the applicable form(s), will automatically be sent to the IAEA through the online platform.

NOTE: The application for financial support should be made, together with the submission of the application, by **1 May 2024**.

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to InTouchPlus.Contact-Point@iaea.org.

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency's Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. The IAEA may also use the contact details of Applicants to inform them of the IAEA's scientific and technical publications, or the latest employment opportunities and current open vacancies at the IAEA. These secondary purposes are consistent with the IAEA's mandate. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

Expenditures and Grants

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Upon specific request, such assistance may be offered to normally one participant per country, provided that, in the IAEA's view, the participant will make an important contribution to the event.

The application for financial support should be made, together with the submission of the application, by **1 May 2024**.

Visas

Participants who require a visa to enter the United States of America should submit the necessary application as soon as possible to the nearest diplomatic or consular representative of the United States of America.

Additional Information

Please note that some selected participants will receive financial support from the IAEA Programs at the Argonne National Laboratory in Lemont. They will receive a stipend for meals and incidental expenses as well as a contingency allowance from the host organization (Argonne National Laboratory); accommodation costs will be directly paid by the Argonne National Laboratory for these selected participants, and they will also receive a round-trip air ticket based on the most direct and economical route (lowest logical fare in economy class) between the airport nearest their residence and the airport nearest the event location.

Additional Requirements

All persons wishing to participate in the event have to submit a CV which should state the following information: place of birth, education, description of current work duties and level of English language.

IAEA Contacts

Scientific Secretary:

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on other matters related to the event to the Administrative Secretaries.

Participation Form

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To be completed by the participant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretaries Mr Mario Tot and Ms Yunshu Li, Division of Planning, Information and Knowledge Management, Department of Nuclear Energy (Emails: M.Tot@iaea.org and Yu.Li@iaea.org) and to the Administrative Secretaries, Ms Valerie Gartner (Email: V.Gartner@iaea.org) and Ms Eugenie Hartzell (Email: E.T.B.Hartzell@iaea.org).

Deadline for receipt by IAEA through official channels: 1 May 2024

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms
Institution:		
Full address:		
Tel. (Fax):		
Email:		
Nationality:	Representing following Member State/non-Member State/entity or invited organization:	
If/as applicable: Do you intend to submit a paper? Yes <input type="checkbox"/> No <input type="checkbox"/> Would you prefer to present your paper as a poster? Yes <input type="checkbox"/> No <input type="checkbox"/>		

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency's Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. The IAEA may also use the contact details of Applicants to inform them of the IAEA's scientific and technical publications, or the latest employment opportunities and current open vacancies at the IAEA. These secondary purposes are consistent with the IAEA's mandate. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

Grant Application Form

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To be completed by the applicant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretaries M.Tot@iaea.org and Yu.Li@iaea.org and to the Administrative Secretaries V.Gartner@iaea.org and E.T.B.Hartzell@iaea.org.

Deadline for receipt by IAEA through official channels: 1 May 2024

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms:
Mailing address:	Tel.:	
	Fax:	
	Email:	
Date of birth (yy/mm/dd):	Nationality:	
I plan to attend virtually:	Yes <input type="checkbox"/> No <input type="checkbox"/>	

1. Education (post-secondary):

Name and place of institution	Field of study	Diploma or Degree	Years attended from	to

2. Recent employment record (starting with your present post):

Name and place of employer/organization	Title of your position	Type of work	Years worked from	to

3. Description of work performed over the last three years:

4. Institute's/Member State's programme in field of event:

Date: **Signature of applicant:** _____

Date: **Name, signature and stamp of Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority** _____