IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Tenth DEMO and Fusion Plants Workshop

Hosted by the
Government of United States of America

through the

University California San Diego
and Lawrence Livermore National Laboratory

San Diego, United States of America

7–11 December 2026

Ref. No.: EVT2504024

Information Sheet

Introduction

The International Atomic Energy Agency (IAEA) fosters international collaboration and coordination to help close the existing gaps in science, technology and safety, and move forward in developing the peaceful use of fusion energy.

Although ITER is a multinational project, there are no such plans for demonstration (DEMO) or prototype plants. Rather, these concepts are being developed by individual governments, private companies and some public–private joint ventures. Such a diverse development framework can enable fast progress and increased innovation, but it is important to maintain strong international cooperation and government support to ensure that fusion energy can come to fruition. Against this backdrop, the IAEA launched a series of workshops in 2012 to strengthen international collaboration relevant to fusion demonstration, pilot and power plants and to identify R&D gaps and requirements. These workshops have continued over the years, and the 2026 meeting will mark the 10th edition.

Objectives

The purpose of the event is to examine a focused set of key R&D scientific and technological issues for demonstration, pilot and power plants, with the aim of identifying R&D gaps and requirements (e.g., facilities and development activities) needed to address them. The workshop will also highlight opportunities to accelerate progress through international collaboration, ideally leading to coordinated or joint efforts where they offer clear benefits.

Target Audience

The event is suitable for managers and senior scientists working on fusion energy research and development. A broad technical understanding of the current issues in fusion energy is assumed.

Working Language

The working language of the event will be English. All communication and papers must be sent to the IAEA in English. No simultaneous interpretation will be provided.

Structure and Topics

The programme will consist primarily of sessions featuring invited and contributed presentations (both oral and poster), along with dedicated discussion periods. A Programme Committee with broad international representation will oversee the selection of contributions, the organization of the technical and discussion sessions, and the overall scientific content of the event.

The sessions will cover the following three main topics:

1. **Inertial Fusion Energy (IFE)**

Chair: Tammy Ma (United States of America); **Co-Chair:** Constantin Haefner (Germany)

The inertial fusion energy session will address how recent advances in target physics, driver technology, chamber design, and high-repetition-rate operation can be translated into credible pathways toward fusion pilot plants and IFE DEMO–relevant facilities. The session will focus on the key scientific, engineering, and systems-level challenges in moving from single-shot ignition and high-gain experiments to reliable, efficient, and continuously operating fusion energy systems. Topics will include target fabrication and injection at scale, driver efficiency and durability, fusion chamber survivability, tritium breeding and accountancy, systems integration, and plant availability. Particular emphasis will be placed on identifying DEMO-relevant performance metrics for inertial fusion and on opportunities for international collaboration, shared infrastructure, and coordinated R&D strategies that could accelerate progress from experimental fusion performance to deployable inertial fusion energy concepts.

2. **Stellarators**

Chair: Felix Warmer (Germany); **Co-Chair:** Dave Gates (United States of America)

This session will explore stellarator-based concepts as a promising pathway toward magnetic confinement fusion power plants. Stellarators enable inherently steady-state operation through optimized 3D magnetic fields, reducing reliance on external current drive systems and enhancing operational robustness – albeit at the cost of increased geometric complexity. The session will review progress in next-generation stellarator devices and power plant concepts, alongside key engineering challenges associated with their complex 3D geometry, including remote maintenance, structural support, and divertor design. It will also highlight emerging opportunities for stellarators within the broader fusion landscape. In addition, the session will examine how advanced computational methods and AI can support and accelerate stellarator design by navigating high-dimensional optimization spaces and reducing design cycles. Finally, the session aims to identify critical research priorities and explore how strengthened collaboration between the public and private sectors can create synergies to advance stellarator-based fusion toward maturity.

3. **Radioactive Waste and Decommissioning**

Chair: Brenda Garcia-Diaz (United States of America); **Co-Chair:** Stephen Reynolds (United Kingdom)

As the global fusion community transitions from experimental machines like JET and ITER to DEMOs and fusion plants, there is a requirement to ensure focus switches in part to the practicalities of the full industrial lifecycle of fusion power plants. This session focuses on the radwaste/byproduct management and decommissioning aspects of a fusion power plant, the fusion fuel cycle, the breeding blanket, and will present the state-of-the-art status of strategies for waste/byproduct characterization, decommissioning, and the robotic systems required to execute these tasks in high-radiation environments. These aspects are essential for ensuring that fusion is perceived as a sustainable and socially acceptable energy source.

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 **20 November 2026**, 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 **20 November 2026**.

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

Participation is free of charge. No IAEA financial support will be provided.

Venue

The event will be held in San Diego, United States of America. Participants must make their own travel and accommodation arrangements.

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.

Programme Committee

Klaus Hesch (Chair)	Germany
Pattrick Calderoni	United States of America
Christian Day	Germany
Javier Garay	United States of America
Brenda Garcia-Diaz	United States of America
Dave Gates	United States of America
Constantin Haefner	Germany
Keeman Kim	Republic of Korea
Boris Kuteev	Russian Federation
Rachel Lawless	United Kingdom
Tammy Ma	United States of America
Francesco Maviglia	EUROfusion
Michael Porton	United Kingdom
Stephen Reynolds	United Kingdom
Hiroyasu Uto	Japan
Felix Warmer	Germany
Min Xu	China
Nagato Yanagi	Japan
Minyou Ye	China
Wulyu Zhong	China

IAEA Contacts

Scientific Secretary:

Matteo Barbarino
Division of Physical and Chemical Science
Department of Nuclear Science and Application
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 2638
Fax: +43 1 26007
Email: M.Barbarino@iaea.org

Administrative Secretary:

Marion Linter
Division of Physical and Chemical Science
Department of Nuclear Science and Application
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 25119
Fax: +43 1 26007
Email: M.Linter@iaea.org

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

Host Organization Contact Point

Javier Garay
University California San Diego
UNITED STATES OF AMERICA
Email: jegaray@ucsd.edu

Tammy Ma
Lawrence Livermore National Laboratory
UNITED STATES OF AMERICA
Email: ma8@llnl.gov

Event Web Page

Please visit the following IAEA web page regularly for new information regarding this event: https://conferences.iaea.org/event/461