
Call Details

Reference No.	CfP-FSD-AWP26-ENR-03	PMU contact	Denis Kalupin
Due Date	26/09/2025	Department	Fusion Science Department
		Status	Draft

Call for Enabling Research Proposals in the area of Inertial Fusion Energy (EnR-IFE) for the period of 2026-2027

Description:

Enabling Research (EnR) is a key ingredient of the EUROfusion Consortium activities as it provides a special path to bring new ideas and techniques into the programme in ways not easily achieved within the strongly goal-oriented main Work Packages (WPs). This Enabling Research call is open for any proposal relevant to the EUROfusion programme and distinct from the Work Package activities.

Topic area Inertial Fusion Energy (IFE)

This call addresses the proposals in the field of the laser-driven **Inertial Fusion**.

The research should concern on the conceptual design of a next-generation laser-fusion research facility dedicated to demonstrate ignition via Direct Drive (DD) approach to Inertial confinement fusion (*in line with HiPER+ Roadmap HPLSE, (2023), Vol.11, e83, p.31*) and then to achieve energy gains significantly exceeding those demonstrated by the National Ignition Facility (NIF), operate at much higher repetition rates, thus approaching reactor-relevant conditions, and support the development of key technologies required for future commercial fusion power plants. These include efficient and high-repetition-rate laser systems, advanced targets and diagnostics, materials and systems capable of withstanding extreme thermal, mechanical, and radiation environments.

The projects submitted in reply to this call should focus on following topics.

High-gain Implosion Physics and Target Design, including improvements to laser-plasma interaction and energy transport models.

Proposals in this area should address following topics:

- *Improvement of the laser-plasma interaction model for radiative-hydrodynamic codes*
- *Improvement of the model of energy transport in laser-produced plasma for radiative-hydrodynamic codes*
- *Target design for high-gain direct-drive implosions*
- *Use of low-density structured materials (e.g. foams) in target design for mitigation of laser imprint and hydrodynamic instabilities*
- *Study of non-cryogenic solid-state targets*
- *Mitigation of Laser Plasma Instabilities (LPI) and control of laser energy transport*

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- *Optimization of the Shock ignition design for DD laser-fusion*
 - *Other Direct-Drive ignition schemes*
 - *Validation of models with tailored experiments*

Laser Technologies, from component-level design to performance specifications for both research and reactor-scale systems.

Proposals in this area should address following topics:

- *Identification of best laser parameters (laser smoothing, temporal shaping, broadband)*
- *High efficiency (diode pumped) laser systems at HRR (up to 10 Hz)*
- *Build Knowledge Base on Industrial and Laboratory Laser Technology*
- *Specification List of Staged Laser Parameters*
- *Laser subsystems and industry*
- *Design of Laser System for Research Level performance*
- *Laser Design Issues for Reactor Level Performance*

Laser plasma and nuclear fusion diagnostics

Proposals in this area should address following topics:

- *Development of novel diagnostics approaches for validation of models with tailored experiments*
- *Selection and optimization of diagnostics for implosion and high gain physics*
- *Design of ultra-fast particle and radiation-based diagnostics*
- *Assessment of reactor level diagnostics*

IFE reactors issues, Target and HRR

Proposals in this area should address following topics:

- *Neutron & radiation damage and activation to materials and reactor components*
- *Assessment and plan for licensing procedures*
- *First Wall and Optical materials for Ignition in Burst mode and for future reactors*
- *Electromagnetic safety*
- *Target technology and requirements vs. industry*
- *Target injection, positioning, control and metrology*
- *Experimental assessment of materials, systems and produced radiation.*

Nature of projects and eligibility criteria

Proposals must meet the following eligibility criteria in addition to general expectations of **scientific excellence, relevance, innovation**, and use of **state-of-the-art methodologies**:

- **Alignment with topics described in this Call:** Projects must be broadly covering most of above-mentioned topics, specifically focusing on the conceptual design of future IFE facility.
- **Novelty and distinction:** Proposals must introduce the study of unresolved scientific or technological issues relevant to direct drive IFE.
- **Added value:** Applicants must articulate how their project complements or enhances the existing programme—e.g., via improved modelling capabilities, novel computational approaches, novel experimental efforts to study physics and technology issues, innovative diagnostics or materials studies.

Additional selection guidelines:

- Projects should be **curiosity-driven** but still firmly connected to EUROfusion priorities.
- Coordinated proposals addressing all the areas and the largest number of topics will be prioritised.

Scientific Monitoring and Reporting

A final report on the outcome of the project, outlining the main results, must be submitted at the end of the project. There will be a simple annual progress monitoring. All reports will be available to the SB, so if necessary, the corrections to the project schedule or scientific objectives might be requested to the PI.

Please submit your proposal through the Information Management System (<https://ims.euro-fusion.org>) by **26.09.2025 at latest**.

Contact

For questions or clarifications, please contact:
denis.kalupin@euro-fusion.org

Proposals are expected against following active call positions

CfP-FSD-AWP26-ENR-03- 03

Projects 2026-2027

Description

Eligibility and Funding

- **Who Can Apply:** Teams of researchers from EUROfusion beneficiaries and Affiliated Entities.
- **Funding Available:** the successful projects will be funded according to applicable internal financial rules (see below). **The financial support is subject to the extension of the EUROfusion Grant Agreement to 31st December 2027 and to availability of funds.**
- **Project Duration:** up to 24 months, starting earliest by 1st January 2026 and closing by 31st December 2027 at latest.
- **Evaluation Criteria:** Scientific merit, alignment with programme objectives, project team, and feasibility to deliver.

Submission Guidelines

Proponents are required to submit their proposals in accordance with the attached instructions and templates. Proposals must include:

- **Executive summary** (max. 1 page) - *provided through online application form (Abstract)*
- **Scientific proposal**, including project description and work plan aligned with EnR-IFE objectives including annual deliverables, and risk mitigation plan - *to be attached to the online application form ([following provided template](#))*
- **CV(s)** of main contributors - *to be attached to the online application form ([following provided template](#))*
- Accompanying Document (if needed) - *to be attached to the online application form ([following attached template](#))*
- **Project team** (annual commitments) - *provided through online application form*
- For proposals involving several beneficiaries - **Confirmations of commitments** - *to be attached to the online application form ([following attached template](#))*

Project rules on staff commitment levels

The minimum commitment for the **PI and collaborators is 6 person months (PM) per year and 2 PM per year**, respectively.

Since projects are selected partly based on the quality of the named participants, it will be important that participants are available for all projects in which they participate (all the projects may be selected).

Projects may include **open positions** and unidentified staff, but they **should not exceed 10% of the total project effort** and there must be a recruitment plan (in the Accompanying Document). Proposals exceeding this limit should provide a firm justification. All open positions **must be filled before 1st of July 2026**. The average salary cost system shall be used to determine the personnel cost in the proposal.

Requested **Equipment/Consumables/Services** and **Mission** budgets should be clearly detailed and justified. Mission costs will be assessed by the PMU before being granted.

Internal financial rules applicable for this position are:

PM 50% standard

Personnel standard

Eq./OGS 40% standard

Equipment/Other Goods&Services standard

Eq./OGS 40% Op. facilities standard

Equipment/Other Goods&Services Operation Facilities standard

PM 0% AR

Personnel Accompanying Research

Eq./OGS 0% AR

Equipment/Other Goods&Services Accompanying Research

Mission 70%

Travel costs and national subsistence allowance

Attachments:

The Call includes following attachments available for download at the EUROfusion Information Management System:

TEMPLATE_Scientific_Proposal.docx

TEMPLATE Scientific Proposal.docx

TEMPLATE_CV_(surname)_(name).docx

TEMPLATE CV_(surname)_(name).docx

TEMPLATE_Accompanying_Document_.docx

TEMPLATE Accompanying Document .docx

TEMPLATE_Confirmation_from_(beneficiary).docx

TEMPLATE Confirmation_from_(beneficiary).docx

Selection_Process.pdf

Selection Process.pdf

Personal_Data_Protection_Policy.pdf

Personal Data Protection Policy.pdf

Call_Document_(CfP-FSD-AWP26-ENR-03).pdf

Call Document (CfP-FSD-AWP26-ENR-03).pdf