

Shaping the Future of ESS

Call for Input to the Instrument Roadmap

ESS invites the scientific community to contribute to the development of its long-term instrument roadmap. Beyond the 15 instruments currently under construction, we seek scientifically driven conceptual ideas for future instruments to ensure that ESS remains globally competitive and scientifically impactful for decades to come.

Teams across Europe are encouraged to submit proposals from **February 3, 2025, to February 3, 2026**. These ideas will serve as the foundation for selecting new instrument designs that address scientific gaps and expand the capacity of ESS. Selected concepts will be incorporated into a structured roadmap, ensuring alignment with ESS's long-term mission.

A Strategic and Collaborative Process

As with all major research facilities, ESS will continuously upgrade. The first 15 instruments were developed during the facility's construction phase. This next phase will see ESS leading the strategic planning and management of projects while leveraging the expertise of the broader neutron science community within the context of ESS's long-term scientific strategy.

This roadmap initiative will unfold in two key phases:

- **Concept Identification** – Open submission of scientifically compelling instrument ideas.
- **Selection and Development** – Expert review and strategic evaluation of proposed concepts, followed by the formation of consortia to further develop selected ideas into detailed instrument concepts. Even if a submitted concept is not selected, proposers will have opportunities to contribute to other selected projects.

Selection and Development

Submitted proposals will undergo review by expert committees and internal ESS evaluation to ensure scientific merit, feasibility, and alignment with ESS priorities. The review process may consider merging similar proposals and assessing their impact on existing plans, including potential rescoping of current instruments.

The roadmap will be developed within a strategic framework that considers scientific priorities, technological advancements, and facility expansion. While funding for future instrument construction is not yet secured, the roadmap will provide a well-founded case for obtaining resources and ensuring smooth integration into ESS operations. ESS reserves the right to adjust or halt projects based on funding availability, technical feasibility, or evolving scientific needs.

How to Prepare and Submit a Proposal

The Call for Input is open February 3 2025 – February 3 2026.

Interested parties in ESS member countries are welcome to submit proposals. Collaborators from other countries may also be listed, but not as main proposers.

Make sure to contact us well before you submit a proposal, see below.

ESS will not cover costs incurred at the proposing institutes for the development of conceptual instrument ideas.

Propose an instrument concept, not a fully designed instrument. Focus on scientific capacity and capability, and explain how your concept would complement the current instrument suite at ESS as well as the global neutron landscape, and how it would enable ground-breaking science. Explain how technical solutions will make your concept feasible and excellent, but do not provide a full instrument design.

A proposal should include the following:

1. Executive summary
2. Scientific case
 - 2.1. Key scientific drivers
 - 2.1.1 Potential societal relevance of the science case
 - 2.2. Potential new science
 - 2.3. Potential user community
3. An initial technical overview of the proposed instrument, discussing technical feasibility.
4. An explanation of how the concept makes use of the ESS long-pulse source, if relevant.
5. Plans or requirements for sample environment and laboratory access.
6. Proposed location of the instrument at the ESS facility including motivation.
7. Gap analysis in terms of both capability and capacity, in relation to ESS and the global facility landscape.
8. Comparison to other similar instruments in the world, if possible.

Page limit: 12 pages.

E-mail your proposal to instrumentroadmap@ess.eu, with the subject line "Proposal submittal" no later than February 3, 2026.

Available Beamports and Space in the Instrument Halls

[Available beamports and space in the instrument halls.](#)

This document shows a possible long-term beamline configuration, including a possible future expansion of hall space. These slots may be modified to optimize space depending on instrument design. While not all these slots will be made available for this call for input, the graphic provides a view of possibilities and constraints as a basis for discussion.

Instruments Currently Under Construction

[Information about the 15 instruments currently under construction at ESS.](#)

Contact us First

Prior to submitting a proposal, please contact the appropriate Head of Division for a discussion on feasibility.

[Pascale Deen](#), Head of the Spectroscopy Division

[Mikhail Feygenson](#), Head of the Diffraction and Imaging Division

[Andrew Jackson](#), Head of the Large-Scale Structures Division

For Fundamental Physics, contact [Pascale Deen](#).

For general questions regarding the Call for Input, contact instrumentroadmap@ess.eu.

[Print version of this Call for Input.](#)