
European Spallation Source ERIC
Scientific Evaluation and Access
First 15 Instruments

1. GENERAL PRINCIPLES

1.1. Objective and Coverage

- 1.1.1. This Policy for Scientific Evaluation and Access ("Policy") covers all access to beamtime on the first 15 instruments to enter operations at the ESS European Spallation Source ERIC ("ESS").
- 1.1.2. This Policy fulfils the requirements of articles 2 and 17 of the ESS statutes [1].
- 1.1.3. All available beamtime at ESS shall be allocated in accordance with the ESS statutes [1] thereby facilitating top-level research, technological development, innovation and a challenge-based approach to societal challenges.
- 1.1.4. This Policy should be read in conjunction with the Policy for User Scientific Publications [2] and the Policy for Scientific Data [3].
- 1.1.5. This Policy has been prepared in accordance with the non-regulatory principles and guidelines provided in the European Charter for Access to Research Infrastructures [4].

1.2. Revisions

- 1.2.1. Revisions to this Policy shall be proposed by the Director General and subject to the approval of the ESS Council ("Council").
- 1.2.2. Every three to five years, this Policy will be presented to and reviewed by Council, and their advisory bodies, to ensure it continues to meet the needs of the ESS organisation.

1.3. Who is Responsible for this Policy?

- 1.3.1. In accordance with 1.2.1, the ESS Director General has overall responsibility for this Policy and has delegated practical implementation to the Research Coordination Office ("RCO").

1.4. Notifications

- 1.4.1. ESS shall publish this Policy on the ESS website and on the ESS user portal. This will be updated when the Policy is revised.

1.5. Infringements

- 1.5.1. Deliberate infringements of this Policy may result in denial of ESS proposals with the same Principal Investigator in the future.

2. NEUTRON PRODUCTION

2.1. Neutron Production Days

- 2.1.1. During routine operation at steady state, ESS will deliver 200 neutron production days per year, of which up to 20 days will be used for optional accelerator testing.

- 2.1.2. Each instrument in the user program, will consider 80% of these days as Beamtime Available to Users. The remaining 20% will be considered as Facility Time.

3. FACILITY TIME

3.1. General Conditions

- 3.1.1. Facility time is to be used at the discretion of the ESS scientists for commissioning activities including, but not limited to: instrument improvements, technical and methodological developments, sample environment testing and instrument calibration.
- 3.1.2. Facility time will provide opportunities for ESS instrument teams to carry out small interventions to remedy technical issues as they arise.
- 3.1.3. Facility time may be used for scientific and/or methodological training activities for the user community.
- 3.1.4. It may be possible to re-schedule user experiments to facility time should technical problems have caused issues during user time.
- 3.1.5. Facility time will, when practical, be used in cooperation with researchers from Member States.
- 3.1.6. Facility time is not reserved for in house research. ESS scientists should primarily apply for Beamtime Available to Users in the same way as external scientists.

4. BEAMTIME AVAILABLE TO USERS

4.1. General Conditions

- 4.1.1. This Policy refers to the percentage of beamtime available to users on an average ESS instrument which is both fully operational and fully staffed.
- 4.1.2. For every visit ESS Users are required to complete a user feedback survey within two months of the visit ending.
- 4.1.3. With the exception of Industrial Proprietary Access (IND), for every proposal ESS Users are required to provide an experimental report within three months of the experiment completion. This report will be taken into consideration if continuation experiments are proposed.
- 4.1.4. With the exception of IND, all ESS users are subject to three fundamental principles; the proposed work shall be reviewed by experts, all resulting findings shall be published in accordance with the ESS Policy for User Scientific Publications [2] and all resulting raw and meta data shall be made open access after an embargo period as outlined in the ESS Policy for Scientific Data [3].

4.2. Peer Reviewed Access

- 4.2.1. For all of the first 15 instruments, Peer Reviewed Access ("PRA") shall be the principal route of access to Beamtime Available to Users. 80% of the Beamtime Available to Users on each instrument will be for PRA.
- 4.2.2. The selection of research proposals shall be guided by a peer review process.
- 4.2.3. The review of proposals shall be carried out by the ESS Facility Access Panels comprised of external experts in their field, aided by ESS representatives. The reviewers shall be appointed by ESS management.
- 4.2.4. ESS management shall make the final allocation in light of the outcome of the review process as well as national balance as discussed in Section 6 below.
- 4.2.5. The experts reviewing proposals will be charged with ensuring the awarded proposals describe excellent research. In addition to excellence in fundamental science, excellence will also be viewed in terms of technological developments, innovation and addressing societal challenges. The reviewing instructions for each review cycle will be outlined to the reviewers according to the needs of the ESS organisation.
- 4.2.6. A subset of PRA time, not exceeding 10%, can be awarded to programmatic access. Programmatic access shall include long-term proposals, where several scientifically linked experiments are proposed to take place over a longer period of time, or thematic proposals, where several experiments are proposed to address a specific societal challenge. Programmatic access will be awarded for a duration no longer than three years.
- 4.2.7. Where suitable grants are available, up to 10% of PRA may be awarded to users accessing ESS through transnational access (TNA) arrangements.
- 4.2.8. To strengthen industry-academic partnerships and increase the collaboration between neutron and non-neutron research infrastructures, ESS management may establish additional review panels to promote new ways of working.
- 4.2.9. The success of PRA will be monitored *a-posteriori* by the review of ESS user feedback surveys and experimental reports.
- 4.2.10. PRA shall provide ESS users access to ESS Resources and Services, as necessary to facilitate a successful ESS neutron experiment.

4.3. Quick Access

- 4.3.1. Quick Access (QA) is intended for ESS Users who require small amounts of beamtime and need a relatively simple characterization experiment. Such experiments will be carried out in a mail-in mode, where the ESS User ships a sample to the Instrument Scientist, who carries out the experiment and returns the raw or reduced experimental data.

- 4.3.2. QA proposals will be reviewed for feasibility and excellence by ESS Scientists.
- 4.3.3. QA will account for no more than 5% of the beamtime available to users per instrument.
- 4.3.4. QA is only available to scientists from Member States.
- 4.3.5. Criteria for QA are that the experiment provides data to complete an experiment or provides a brief one-off test or characterization for the completion of a publication or thesis. Additionally, QA may be used to provide a proof-of-principle in support for a future ESS proposal.

4.4. Discretionary Access

- 4.4.1. Discretionary Access (DA) is intended for scientists who do not awarded access to ESS but are able to present a strong case for access to the Director for Science.
- 4.4.2. DA will account for no more than 5% of the beamtime available to users per instrument.
- 4.4.3. Criteria for Discretionary Access include cases where prioritised access is crucial due to the rapid emergence of the science, the high quality of the proposed science or short-lived samples becoming available.

4.5. Industrial Proprietary Access

- 4.5.1. Industrial Proprietary Access (IND) is a mode of access where the beamtime is paid for by the Industrial User and in return the user retains the intellectual property arising from the experiment.
- 4.5.2. IND will account for no more than 5% of the Beamtime Available to Users averaged across the ESS 15 first instruments. It will never exceed 10% of the Beamtime Available to Users on any one instrument.
- 4.5.3. IND is available to companies from any country. If capacity becomes limiting, priority will be given to companies based in Member States.
- 4.5.4. Users of IND negotiate a contract with ESS which describes the terms and conditions of their relationship with ESS. ESS will propose and Council will approve the cost of IND. This shall be reviewed every two years.
- 4.5.5. IND is not subject to proposal review and therefore it may be possible to access an instrument more quickly than through Peer Reviewed Access.
- 4.5.6. IND is not the only access option for industrial scientists; companies can apply for PRA, QA or DA either as a single entity, in collaboration with other companies or with academic researchers. When using PRA, QA or DA companies are not exempt from clause 4.1.4 above.

4.6. Reporting ESS Usage

- 4.6.1. Usage of ESS shall be reported to ESS management, the Science Advisory Committee and Council annually. Uptake of each access route will be presented alongside data showing which science areas are being studied and which societal challenges are being addressed.
- 4.6.2. On the basis of these data, recommendations can be made to adjust the balance of the ESS access routes.

100% Neutron Production Days				
85% Beamtime Available to Users				15% Facility Time
>80% PRA	5% QA	<10% IND	5% DA	15% FT

PRA	Peer Reviewed Access
QA	Quick Access
IND	Industrial Access
DA	Direct Access
FT	Facility Time

Figure 1: Distribution of Neutron Production Days to different access routes.

5. ESS SUPPORT OF EXPERIMENTS

5.1. The Role of ESS Scientists

- 5.1.1. ESS Scientists have access to Facility Time as described in section 3.1. They also have the option to apply for all other access modes in the same way as any other ESS User.
- 5.1.2. ESS will provide every experiment with a Local Contact who will support and guide the user through their experiment at ESS and subsequent data reduction. Additional support with data reduction, analysis, modelling and simulations will be available from the ESS Data Management and Software Centre.
- 5.1.3. The local contact and other scientific staff should be offered co-authorship of any publication in accordance with our publication policy [2].
- 5.1.4. Where a publication depends on the use of an instrument, laboratory or workshop at ESS or a service provided by ESS an acknowledgement statement must be included in any publication [2].

6. NATIONAL BALANCE

6.1. National Balance

- 6.1.1. In accordance with the ESS ERIC Statutes, ESS shall provide effective access to European and international researchers as well as other relevant users.
- 6.1.2. With the exception of IND, the use of ESS Resources and Services will be free of charge to all ESS Users. ESS reserves the right to make a charge for providing services outside the ordinary range of ESS Resources and Services.
- 6.1.3. ESS shall categorize all proposals according to the affiliation of the members of the proposal team [5]. The awarded access for each Member State shall be proportionate to percentage share of the operational costs provided by that Member State when averaged over time, as stated in Article 18 of the ESS ERIC Statutes [1].

7. DEFINITIONS

- 7.1. "Beamtime Available to Users" are the neutron production days that will be made available to ESS Users for access via PRA, QA, DA and IND as described above.
- 7.2. "Discretionary Access" is an access mode whereby the Director of Science can use their discretion to provide instrument access, on receipt of a suitable proposal.
- 7.3. "ESS Users" includes scientists and engineers from academia, research councils and charitable institutions and researchers from commercial or non-commercial organizations.
- 7.4. "ESS Resources and Services" include the first 15 ESS instruments and sample environments, samples prepared entirely or partially in ESS laboratories, ESS User laboratories providing enabling sample manipulation and complementary techniques, ESS User workshops to prepare and adapt equipment and data reduction, analysis, modelling and simulation services provided by DMSC.
- 7.5. "Facility Time" includes all the neutron production days that are not made available to ESS Users.
- 7.6. "Industrial Proprietary Access" ("IND") refers to the access granted through purchase for the purpose of proprietary confidential activity.
- 7.7. "Instrument(s)" refers to any and all instruments, including beamline instruments, used at ESS during the execution of experiments.
- 7.8. "Neutron Production Days" are days on which the ESS machine will operate, producing neutrons that can be used by Instruments at ESS.
- 7.9. "Peer Reviewed Access" ("PRA") refers to the access granted through the external peer review process.
- 7.10. "Proposal Team" ("PT") refers to anyone designated by the Principal Investigator (PI) with the right of access by way of notification on the original experimental proposal or via written communication to RCO.
- 7.11. "Quick Access" ("QA") is a mail-in access mode, enabling the simple characterization of a small number of samples.

8. REFERENCES

[1] ESS ERIC statutes:

https://europanspallationsource.se/sites/default/files/ess_eric_decision_20151478ec.pdf

[2] Policy for User Scientific Publications (ESS-)

[3] Policy for Scientific Data (ESS-

[4] European Charter for Access to Research Infrastructures (ISBN 978-92-79-456):

https://www.rcc.int/files/user/docs/open_access/European%20Charter%20for%20Access%20to%20Research%20Infrastructures.pdf

[5] ESS Guidelines for Administrating National Balance (ESS-)

DOCUMENT REVISION HISTORY

Version	Reason for revision	Date
0.1	Outline of Policy in new format	2023-10-26