

## TRANSNATIONAL ACCESS CALL 2022-2023

### CCUS RESEARCH PRIORITIES / GAPS

The second ECCSELERATE Transnational Access call offers funded access to ECCSEL ERIC facilities. Target groups for the call are researchers or research teams from academia, industry and small and medium size enterprises (SMEs). Goal of the call is to extend existing knowledge in CCUS and target specific knowledge gaps within CCUS research.

#### Conditions of the call

*Eligible applicants:* Researchers from academia working in the CCUS research field. Researchers from industrial companies and SMEs covering all industrial sectors relevant for CCUS. Transnational Access projects can be merged with other ongoing activities, if required.

*Technology Readiness Level (TRL):* All TRLs are covered in the call.

*ECCSEL ERIC facilities accessible:* All ECCSEL ERIC research facilities included in ECCSELERATE Transnational Access call are open for application. The full list can be found online and in table 1 of this document.

*Eligible costs:*

- Facility costs
  - The running costs of the installation
  - Costs for logistical, technological and scientific support for accessing the selected facility, including necessary training, preparatory and closing activities necessary to carry out the user work
- Visiting researcher's costs - travel and subsistence funding for one researcher
  - Up to € 500 for travel
  - Up to € 100 for each day at the facility
  - Travel claim with receipts for all claimed expenses must be submitted

Transnational Access offered by the participating research facilities within ECCSEL ERIC also comprises:

- Logistics support and advice for (level dependent on facility) travel and accommodation for one user per research project
- Free access to information and data in the public domain held at the ECCSEL ERIC research facility

Typical access duration (time needed) for a research project is calculated by multiplying the 'access unit' (specific for each facility) with 'unit quantity' (see Table 1). Maximum project length is three months or the guideline duration provided in table 1, Quantity of access provided for each facility, whichever is shorter. This information is also included on each facility fact sheet.

The call opens on November 1<sup>st</sup>, 2022 and will stay open until Transnational Access funding is exhausted, or latest July 2023. Funds are available on a first come first served basis for the peer review highest ranked projects. Early applications are therefore advisable.

Applications will be reviewed every two months, with the first cut-off date being December 31<sup>st</sup>, 2022.

Research projects must be completed by September 15<sup>th</sup>, 2023, and costs reported by November 1<sup>st</sup>, 2023.

Services relevant academic and industrial sectors within CCUS research considered by this call

- Collaborative research
- Knowledge sharing
- Capacity building

Research priorities

The second Transnational Access call is focused on specific knowledge gaps identified in the updated ECCSEL ERIC Research Priorities. Main gaps in CCUS to be addressed by project proposals are listed below:

- **CO<sub>2</sub> storage**
  - Dynamic storage capacity and understanding the pressure-connected volume
  - Storage optimisation through development of a range of injection strategies
  - Site selection and demonstrating security of storage
  - Monitoring for assurance and long-term containment
  - Developing remediation and mitigation techniques
  - Storage permitting
- **CO<sub>2</sub> transport**
  - Properties of CO<sub>2</sub> and CO<sub>2</sub> mixtures
  - Flow characterisation in pipelines and wells, ship transport
  - Fiscal metering and flow monitoring
  - Pipeline and tank integrity
  - Non-equilibrium phenomena
  - Flow monitoring and control
- **CO<sub>2</sub> capture**
  - Chemical post-combustion technology
  - Calcium looping and sorbent-enhanced water-gas shift
  - Oxyfuel combustion
  - Operating industrial processes with electricity or hydrogen
- **CO<sub>2</sub> utilisation**
  - Direct conversion onsite to valuable products

The full description of relevant Research Priorities is available at the following link:  
[https://eccsel.org/media/112827/d1-5updatedeerpsv1\\_0.pdf](https://eccsel.org/media/112827/d1-5updatedeerpsv1_0.pdf)

**To be eligible for funding, applicants must specify in their application which of the CCUS knowledge gaps will be tackled in their proposed research project and explain how their idea will foster the advancement of CCUS in that specific field.**

Applications will be considered also for target research gaps in CCUS not specifically listed in the ECCSEL ERIC Research Priorities. In this case the relevance of such additional research topics will be reviewed by an internal panel. The members of this panel were involved in creating the updated ECCSEL ERIC Research Priorities. The most important eligibility criterium is that the proposed research will expand knowledge to fill CCUS knowledge gaps.

You can contact ECCSEL ERIC<sup>1</sup> if you have questions to the listed research gaps or to possible additional ones.

#### Information to be provided in the application

- Personal (and group) information
- Project description and objectives
- Equipment required and preferred facilities
- Consumables, chemicals, materials, and equipment from the researcher to be brought to the facility
- Ethical considerations and negative environmental impact
- Publication plans

#### General eligibility rules

(a) Access which must be provided:

- The Transnational Access to Research Infrastructure or installations for selected user groups or users must be free of charge
- Access must include the logistical, technological and scientific support and the specific training that is usually provided to external researchers using the infrastructure

(b) Categories of users that may have access

- Transnational Access must be provided to selected 'users or user-groups', i.e. teams of one or more researchers (users) led by a 'user group leader'
- The user group leader and the majority of the users must work in a country other than the country(ies) where the installation is located

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<sup>1</sup> [info@eccsel.org](mailto:info@eccsel.org)

- Users or user groups with a majority of users should be working in an EU or associated country

Since allowable access for user groups from outside the EU or associated countries has been used up in the first Transnational Access call, please note that applications from non-EU/non-associated country users are unlikely to be supported by the current call.

Only user groups that are entitled to disseminate the results they have generated under the project may benefit from the access, unless the users are working for SMEs. Intellectual Property Rights related to use of ECCSEL ERIC facilities may be protected under specific conditions agreed between the user group and the facility owner.

#### Procedure and criteria for selecting user groups

The users must request access by submitting (in writing) a description of the work that they wish to carry out and the names, nationalities and home institutions of the users.

The projects must be reviewed, evaluated and selected by a selection panel (Peer Review Panel) set up by the access providers. The selection panel must be composed of international experts in the field, at least half of them independent from the beneficiaries.

The selection panel must assess all proposals received and recommend a short list of the user groups that should benefit from access.

The selection panel must base its selection on scientific merit, considering that priority should be given to user groups composed of users who:

- Have not previously used the installation, and;
- are working in countries where no equivalent research infrastructure exists

The selection is based on several criteria<sup>2</sup> where the scientific quality of the application ranks high. This process aims for transparent, fair and impartial access to funds available.

#### User responsibilities

To enable the European Commission to evaluate the Research Infrastructure's participation, soon after the access to the infrastructure each user group leader of a supported user project is required to:

- Provide a Project Summary Report (PSR) highlighting the scientific output of the access received (preferably with one/two images) regarding the access to

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<sup>2</sup> The ECCSEL ERIC Peer Review Criteria: <https://www.eccsel.org/aboutresources/policies/>  
[www.eccsel.org](http://www.eccsel.org)

the ECCSEL Research Infrastructure. The PSR must include the names of the concerned Research Infrastructure and facility and its researchers/technology experts involved in the user project. The PSR may be published on the ECCSEL website and will be made available to the European Commission

- Complete the FAIR data spreadsheet together with the facility
- Complete the user group questionnaire available online at: <https://ec.europa.eu/eusurvey/runner/RIsurveyUSERS>
- Publish the research results within a reasonable time in the open literature, specifying that the project leading to the publication has received funding from the European Horizon 2020 Programme: **"This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 871143"**

Users should also note that the European Commission has the right to publish a list of users containing their names, home institutions and description of the work undertaken.

**Table 1** List of ECCSEL ERIC RI available for Transnational Access with details for access time

| Access Provider | Research infrastructure | Number | Short Name                | Country Location | Access unit | Quantity of accesses provided |
|-----------------|-------------------------|--------|---------------------------|------------------|-------------|-------------------------------|
| ANDRA           | ECCSEL                  | 69     | FR2.1 URL-Andra           | FR               | day         | 2.0                           |
| DICAM-UNIBO     | ECCSEL                  | 52     | IT4.1 MEMLAB              | IT               | day         | 4.0                           |
| ENEA            | ECCSEL                  | 53     | IT3.1 ZECOMIX             | IT               | day         | 5.0                           |
| HWU             | ECCSEL                  | 6      | UK4.5 PHOTO RIG           | UK               | day         | 10.0                          |
| HWU             | ECCSEL                  | 7      | UK4.4 Carbon Capture Rigs | UK               | day         | 10.0                          |
| HWU             | ECCSEL                  | 8      | UK4.3 Core Flood Rig      | UK               | month       | 1.0                           |
| HWU             | ECCSEL                  | 9      | UK4.2 X-Ray CT            | UK               | day         | 20.0                          |
| HWU             | ECCSEL                  | 10     | UK4.1 CompModSim          | UK               | week        | 1.0                           |
| IFE             | ECCSEL                  | 27     | NO4.1 GeoChem Lab         | NO               | day         | 10.0                          |

|              |        |    |                          |    |       |     |
|--------------|--------|----|--------------------------|----|-------|-----|
| IFPEN        | ECCSEL | 67 | FR5.2 GasGeochem         | FR | week  | 1.0 |
| IFPEN        | ECCSEL | 68 | FR5.1 ESCORT             | FR | month | 2.0 |
| INERIS       | ECCSEL | 70 | FR4.1 SAFETY             | FR | month | 1.0 |
| INERIS       | ECCSEL | 71 | FR4.2 CATLAB             | FR | month | 1.0 |
| TUV NEL      | ECCSEL | 2  | UK7.1 NEL-CO2STATIC      | UK | day   | 1.0 |
| UABDN        | ECCSEL | 4  | UK5.2 ACEMAC             | UK | week  | 1.0 |
| UABDN        | ECCSEL | 5  | UK5.1 X-RAY OMOGRAPH LAB | UK | week  | 1.0 |
| USTRATH      | ECCSEL | 3  | UK6.1 AMRL               | UK | week  | 1.0 |
| USTRATH      | ECCSEL | 73 | UK6.2 SCCS-NYX XCT       | UK | week  | 1.0 |
| 2 - OGS      | ECCSEL | 59 | IT1.8 OGS DeepLab        | IT | day   | 5.0 |
| 2 - OGS      | ECCSEL | 60 | IT1.7 CTMO               | IT | day   | 5.0 |
| 2 - OGS      | ECCSEL | 61 | IT1.6 EXPLORA            | IT | day   | 5.0 |
| 2 - OGS      | ECCSEL | 62 | IT1.5 PITOP              | IT | day   | 5.0 |
| 2 - OGS      | ECCSEL | 63 | IT1.4 Latera Nat Lab     | IT | day   | 3.0 |
| 2 - OGS      | ECCSEL | 64 | IT1.3 Panarea NatLab     | IT | day   | 6.0 |
| 2 - OGS      | ECCSEL | 65 | IT1.2 BioMarineLab       | IT | day   | 5.0 |
| 2 - OGS      | ECCSEL | 66 | IT1.1 Research aircraft  | IT | day   | 3.0 |
| 3 - SINTEFER | ECCSEL | 38 | NO2.6 VISC-DENS          | NO | month | 1.0 |
| 3 - SINTEFER | ECCSEL | 39 | NO2.5 DEPRESS            | NO | month | 1.0 |
| 3 - SINTEFER | ECCSEL | 40 | NO2.4 SEPPIL             | NO | month | 1.0 |
| 3 - SINTEFER | ECCSEL | 41 | NO2.3 CO2Mix – VLE       | NO | week  | 5.0 |

|               |        |    |                             |    |       |      |
|---------------|--------|----|-----------------------------|----|-------|------|
| 3 - SINTEFER  | ECCSEL | 42 | NO2.2 COMBLAB (HIPROX)      | NO | day   | 15.0 |
| 3 - SINTEFER  | ECCSEL | 43 | NO2.1 CLC Hot Rig           | NO | week  | 2.0  |
| 3 - SINTEFER  | ECCSEL | 72 | NO2.7 HP- C-VLE             | NO | month | 1.0  |
| 4 - UKRI      | ECCSEL | 22 | UK1.5 Micro Lab (S16)       | UK | month | 1.0  |
| 4 - UKRI      | ECCSEL | 23 | UK1.4 Gas Mon               | UK | week  | 4.0  |
| 4 - UKRI      | ECCSEL | 24 | UK1.3 HTL                   | UK | month | 1.0  |
| 4 - UKRI      | ECCSEL | 25 | UK1.2 RMPL                  | UK | week  | 4.0  |
| 4 - UKRI      | ECCSEL | 26 | UK1.1 TPRL                  | UK | month | 1.0  |
| 5 - BRGM      | ECCSEL | 1  | FR1.1 BIOREP                | FR | month | 1.0  |
| 6 - TNO       | ECCSEL | 46 | NL1.6 ATCM                  | NL | week  | 4.0  |
| 6 - TNO       | ECCSEL | 47 | NL1.5 MobSeis               | NL | week  | 4.0  |
| 6 - TNO       | ECCSEL | 48 | NL1.4 High- P abs&des       | NL | week  | 4.0  |
| 6 - TNO       | ECCSEL | 49 | NL1.3 CLC                   | NL | week  | 4.0  |
| 6 - TNO       | ECCSEL | 50 | NL1.2 QSCAN                 | NL | week  | 4.0  |
| 6 - TNO       | ECCSEL | 51 | NL1.1 Mini Plant            | NL | week  | 4.0  |
| 7 - USFD      | ECCSEL | 16 | UK2.6 Analytical facilities | UK | day   | 10.0 |
| 7 - USFD      | ECCSEL | 17 | UK2.5 ICP Lab               | UK | day   | 10.0 |
| 7 - USFD      | ECCSEL | 18 | UK2.4 Gas Turbine(s) GT     | UK | day   | 5.0  |
| 7 - USFD      | ECCSEL | 19 | UK2.3 ACP                   | UK | day   | 5.0  |
| 7 - USFD      | ECCSEL | 20 | UK2.2 BGC                   | UK | day   | 5.0  |
| 7 - USFD      | ECCSEL | 21 | UK2.1 PCC Plant             | UK | day   | 20.0 |
| 8 - SOTACARBO | ECCSEL | 54 | IT2.5 Rock Analysis Lab     | IT | day   | 1.0  |
| 8 - SOTACARBO | ECCSEL | 55 | IT2.4 Sotacarbo Fault Lab   | IT | week  | 1.0  |

|                |        |    |                        |    |       |      |
|----------------|--------|----|------------------------|----|-------|------|
| 8 - SOTACARB O | ECCSEL | 56 | IT2.3 XtL Pilot Plant  | IT | week  | 1.0  |
| 8 - SOTACARB O | ECCSEL | 57 | IT2.2 PEC Lab          | IT | day   | 1.0  |
| 8 - SOTACARB O | ECCSEL | 58 | IT2.1 COHYGEN          | IT | day   | 1.0  |
| 9 - NTNU       | ECCSEL | 44 | NO1.2 AbsLab           | NO | week  | 6.0  |
| 9 - NTNU       | ECCSEL | 45 | NO1.1 MemLab           | NO | week  | 6.0  |
| 10 - SINTEF    | ECCSEL | 28 | NO3.11 FP-Lab          | NO | day   | 5.0  |
| 10 - SINTEF    | ECCSEL | 29 | NO3.10 WILab           | NO | day   | 10.0 |
| 10 - SINTEF    | ECCSEL | 30 | NO3.8 pVT              | NO | day   | 4.0  |
| 10 - SINTEF    | ECCSEL | 31 | NO3.7 SCAL             | NO | day   | 4.0  |
| 10 - SINTEF    | ECCSEL | 32 | NO3.5 Tiller Pilot     | NO | day   | 20.0 |
| 10 - SINTEF    | ECCSEL | 33 | NO3.4 SDR              | NO | day   | 30.0 |
| 10 - SINTEF    | ECCSEL | 34 | NO3.3 Mlab             | NO | day   | 5.0  |
| 10 - SINTEF    | ECCSEL | 35 | NO3.2 PPLab            | NO | day   | 5.0  |
| 10 - SINTEF    | ECCSEL | 36 | NO3.1b S/ChLab – CHLab | NO | day   | 10.0 |
| 10 - SINTEF    | ECCSEL | 37 | NO3.1a S/ChLab – Slab  | NO | day   | 12.0 |
| 11 - UEDIN     | ECCSEL | 11 | UK3.5 CySim            | UK | day   | 1.0  |
| 11 - UEDIN     | ECCSEL | 12 | UK3.4 MFPCS            | UK | week  | 1.0  |
| 11 - UEDIN     | ECCSEL | 13 | UK3.3 MICROWAVE SWING  | UK | week  | 1.0  |
| 11 - UEDIN     | ECCSEL | 14 | UK3.2 SCCS-AGL         | UK | month | 1.0  |
| 11 - UEDIN     | ECCSEL | 15 | UK3.1 SCCS-PSA         | UK | day   | 10.0 |

### Glossary

Access provider: The ECCSEL participant in charge of providing access to the infrastructure/s or installation/s.



Infrastructure: A facility, a resource (or a coherent set of them) together with the related services, that are used by the scientific community to conduct research.

Installation: A part of a (research) infrastructure that could be used independently from the rest.

User: A researcher within a user group, including the user group leader.

User group: A research team of one or more researchers given access to the infrastructure under the project. A user group is led by a user group leader.

#### Application submission

Please apply using the following link: <https://www.eccsel.org/ta-projects/>



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