

**TECHNO-ECONOMIC ANALYSIS OF
CARBON MITIGATION TECHNOLOGIES**
CA21127

Call for Short-Term Scientific Missions (STSMs)

2nd call for STSM Applications
Third Grant Period, 1 November 2024 –
31 October 2025

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Scope of TrANsMIT COST Action

TrANsMIT proposes a COST Action to advance the techno-economic analysis (TEA) of the full CO₂ Capture, Utilisation, and Storage (CCUS) value chain. It aims to unite academia, research institutes, and industry in a cutting-edge, pan-European knowledge network. The Action will move CCUS TEA from fragmented, discipline-specific research towards a harmonized, holistic, and coordinated European approach. By standardizing methods and tools and leveraging knowledge from national and international projects, TrANsMIT will accelerate the development of the most technologically, economically, and commercially viable CCUS systems. The focus is on holistic chain assessment and key innovation areas such as direct air capture and CO₂ utilization. TrANsMIT also prioritizes knowledge sharing and career development, addressing disparities in expertise and opportunities across Europe.

For further details and specific objectives, please read the Memorandum of Understanding (MoU) of the TrANsMIT COST Action available at: <https://www.cost.eu/actions/CA21127/>

Description

STSMs are integral part of our TrANsMIT objectives. These missions aim to support Researchers and Practitioners in advancing their career goals and generating COST Action TrANsMIT deliverables. Applicants for STSMs should be engaged in an official research program as PhD students and postdoctoral fellows or be associated with an institution or legal entity maintaining an active research focus. Host institutions, where applicants conduct their primary research, will provide the required infrastructure and knowledge resources to help grant beneficiaries complete their proposed STSMs.

Proposed STSMs need to align with one or more scientific objectives of TrANsMIT COST Action, which emphasizes the techno-economic analysis and life-cycle assessment (LCA) of the comprehensive CCUS value chain (including carbon dioxide removal options). Information on these objectives can be found on the TrANsMIT website. **In addition, this grant period's STSMs need to contribute to development of the TrANsMIT database (next section).**

The possible STSM Home and Host Institutions must be framed in the scenarios summarized in the following table.

Applicant's Home Institution	STSM Host Institution
Located in a Participating COST Full Member/COST Cooperating Member	Located in another Participating COST Full Member/ COST Cooperating Member Located in a Participating COST Partner Member An Approved International Partner Country Institution An Approved NNC Institution The EU Commission or a EU Body, Office or Agency An Approved European RTD Organisation An Approved International Organisation

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Action MC observer from a NNC Institution	Located in a Participating COST Full Member/ COST Cooperating Member
Located in an Approved European RTD Organisation	Located in a Participating COST Full Member/ COST Cooperating Member

List of potential Hosts as declared in the survey send to all TrANsMIT COST Action members (on January 29th 2024) can be found under this link: [STSM Call 2023 24 HOSTs.pdf](#). Going to a Host beyond these on the list is also possible.

Purpose of the STSM

STSM are exchange visits to support individual mobility, strengthen existing networks and foster collaboration between COST Action Participants. An STSM should specifically contribute to the scientific objectives of the COST Action, whilst simultaneously allowing those partaking in the missions to learn new techniques, gain access to specific data, instruments and/or methods not available in their own institutions.

During this Grant Period (running until October 2025) we would like to highlight the importance of developing an **open-access database to support the CCUS** community. It is the most important deliverable of the TrANsMIT Action this year. We're inviting interested members to contribute by reviewing the literature and collecting key data from published studies on CCUS technologies and adding this to the database. In first instance, only STSM proposals contributing to development of the database will be considered.

The database will focus on key parameters across three core areas:

- **Process Modelling:** Includes data for model calibration and validation, such as modelling objectives, techniques, software used, key parameters (e.g., flow rates, concentrations), assumptions, and validation data. Of critical importance is also data for validation, i.e., experimental measurements, either at laboratory, pilot, of commercial scale.
- **Techno-Economic Analysis (TEA):** Contains information on capital and operating costs, economic parameters (e.g., interest rate), profitability indicators (e.g., payback periods), revenue streams, market size, cost-benefit analyses, and details on the process system and units considered. It also notes whether externality costs were considered and, if so, which methodology was used.
- **Lifecycle Assessment (LCA):** Includes data related to the process system, system boundaries (e.g., cradle-to-gate), and key assumptions (e.g., geographic location, technology, specific product category rules). It specifies the LCA approach used (attributional, consequential, or dynamic), the functional or declared unit, material and energy flows across system boundaries, data sources (e.g., primary process data, simulations, inventory lifecycle databases), allocation rules (if any), environmental impact categories (e.g., carbon footprint), and regulatory compliance.

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STSMs criteria

The following criteria will be used to assess the eligibility of each STSM:

- Each STSM must have clear outputs that are aligned with the objectives and deliverables of TrANsMIT. These will be evaluated considering:
 - Scientific excellence
 - Feasible plan and budget of the application
 - Active participation in the Action
 - Contribution of the proposed STSM to the Action outcomes
- Each STSM must last at least 5 days and a maximum of 3 months.
- All provisioned work must be carried out within a single grant period during the action lifetime.
- Following the completion of the STSM, the recipient will be required to write and upload the STSM report to e-COST platform not later than 30 days after the end date of the STSM.

Other important criteria for the STSM mobility are:

- The STSM needs to be carried out in their entirety within a single Grant Period and always within the Action's lifetime;
- The COST Association and the Grant Holder of the Action cannot to be considered as being an STSM grantee's employer, i.e. the STSM Grant cannot be considered as a salary;
- STSM grantees should make their own arrangements for all provisions related to personal security, health, taxation, social security and pension matters.

Grant funding

The total budget for STSM in this call is €20 000 and the number of STSM grants are anticipated to be around six (6).

An STSM Grant is a fixed financial contribution which takes into consideration the budget request of the applicant and the outcome of the evaluation of the STSM application. The grant amount is determined by evaluating the applicant's budget request and the reviewers' assessment of the STSM application. **Please note that STSM Grants may not necessarily cover all expenses related to a specific mission**, being only a contribution to the overall travel, accommodation and meal expenses of the Grantee. Applicants are encouraged to evaluate their budget request based on a high benefit/cost ratio and justify it based on the perceived cost of living in the host country/city.

Section A2-3 of the Annotated Rules for COST Actions defines a maximum limit €4000 of financial support for each STSM, which should not be disregarded in any circumstance.

Grant funding will be released after the completion of the mission and upon approval of all necessary reports and documentation. If the pre-payment is requested, request should

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be directed to the Grant Holder Manager, Katarzyna Piecha-Sobota (Katarzyna.Piecha-Sobota@polsl.pl).

Period of STSM and application deadlines

The period of STSM should be completely framed inside the Grant Period and yet reserve some margin for presenting the scientific report for approval and final payment. Therefore, **the STSM should be finished the latest by 30 September 2025**. The following two cut-off dates for the submission and notification of results of STSM proposals will apply:

Cut-off	Application deadline	Notification of results
2 nd	30 th May 2025	6 th June 2025

STSMs Application Procedure

The application procedure is legally bound to the Annotated Rules for COST Actions. Eligible STSM applicants must submit their STSM applications online at the following web address: <https://e-services.cost.eu/stsm>.

Prior to this submission, it is the responsibility of the applicant to obtain a written agreement from the Home and Host institutions stating that the applicant may perform the activities detailed in the STSM work plan on the agreed dates. **Templates for these declarations can be found at [STSM Template HOME.docx](#) and [STSM Template HOST.docx](#)**. Please **specify in your application your area of interest** (Process Modelling, Techno-Economic Analysis, Lifecycle Assessment) when developing an input to **CCUS database** and provide a reason for your choice. Moreover, STSM applicants should be also registered at the Action e-cost system.

The following information is needed for the on-line application form:

- Action number (CA21127);
- Title of the planned STSM;
- Start and end dates of the STSM;
- Applicant's details, including academic profile and workplan;
- Applicant's bank details;
- Host institution details;
- Requested budget.

Selection committee

A scientific committee – STSM Committee – composed of the Grant Awarding Coordinator, the Action Chair and/or Vice-Chair and the Working Group leaders will evaluate all the STSM proposals and define a seriation for the attribution of the grants. In case of conflict of interest, the member that is constrained in his duties should designate a substitute.

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The evaluation will return a value between 0 and a maximum of 10 points. The criteria for evaluation will include: scientific quality, alignment with Action objectives, expected impact, budget, etc.: up to 5 points; ITC participant outgoing or hosting: 0.5 point, Early Stage Researcher (up to 40 years old): 0.5 point; Academia-industry STSM: 2 points; Contribution to CCUS database development: 2 points.

STSM reporting and Payment

The STSM Grantee has 30 calendar days from the end date of the mission to submit a scientific report to the STSM Coordinator along with a proof of evidence of the stay (i.e. some pictures of the trainee working at the host institution facilities). Moreover, a written confirmation by a senior researcher affiliated to the Host Institution regarding the successful achievement of the objectives of the STSM and approval of the scientific report is also necessary.

Please note that failure to submit the scientific report, the proof of evidence of the stay and the Host Approval of the scientific report within 30 days will effectively cancel the grant.

The template of the scientific report can be downloaded at http://www.cost.eu/STSM_report_template; it includes:

- Purpose of the STSM and framing in the TrANsMIT Action;
- Description of the activities carried out during the mission;
- Summary of relevant results;
- Future collaborations, including forthcoming publications resulting from the developed work and/or joint project proposals agreed during the stay.

The payment of the Grant is subject to the approval of the STSM scientific report by the STSM Committee, on behalf of the Action's MC, and the final decision is uploaded in e-COST by the STSM Coordinator. Based on this, the Grant Holder will execute the payment of the grant directly to the grantee or the host institution as requested in the application.

STSM Contacts

Grant Awarding Coordinator	Action Chair	Action Vice-Chair	Database Coordinator
Dr Daria Katla	Prof. Anna Skorek-Osikowska	Dr Mijndert van der Spek	Dr Mohammad Reza Ghaani
daria.katla@polsl.pl	anna.skorek@polsl.pl	m.van_der_spek@hw.ac.uk	mohammad.ghaani@tcd.ie