

**5<sup>th</sup> Singapore-Germany International Collaboration**  
**“Integrated Carbon Management through Biological and Hybrid**  
**Pathways”**  
**CALL FOR PROPOSALS 2026**

(Guidelines for Singapore-based Public Sector Research Performers)

Call Opens: 30 June 2026

Submission deadline: 20 August 2026

## 1 SUMMARY OF INITIATIVES

- 1.1 The Agency for Science, Technology and Research (A\*STAR) and the Federal Ministry of Research, Technology and Space (Bundesministerium für Forschung, Technologie und Raumfahrt, BMFTR), jointly announce the **5<sup>th</sup> Singapore-Germany International Collaboration** Call for Proposals.
- 1.2 The goal of the Call for Proposals is to promote research and development bilateral collaboration between Singapore- and Germany-based public and private institutes and organizations through joint scientific projects. This collaboration calls for the union of at least **one Singapore-based and one Germany-based public sector research performer, with possible partnerships with one Singapore-based and/or one Germany-based industry collaborator highly encouraged.** Against the backdrop of globalization and the Singapore government's recent step-up to help companies stay competitive through innovation and technology adoption, this cooperation framework could incentivize Singapore-based companies to undertake open innovation partnership and provide an additional avenue for them to internationalize. For the 5<sup>th</sup> Singapore-Germany International Collaboration joint grant call, A\*STAR and BMFTR would like to invite researchers based in Singapore and Germany to submit proposals for joint research projects in the area of **Integrated Carbon Management through Biological and Hybrid Pathways.**
- 1.3 All joint proposals will be assessed and evaluated by scientific panels appointed by the respective implementing agencies from Singapore and Germany. Shortlisted proposals will then enter a second-stage joint evaluation and ranking.
- 1.4 All projects can be **up to 36 months** in duration starting from the project start date. For each project, a funding sum of **up to SGD 800,000 (inclusive of 30% overheads)** shall be granted for Singapore-based researchers, and **up to € 560,000** for Germany-based researchers.

## 2 INITIATIVE DESCRIPTION

- 2.1 The aim of this funding guideline is to catalyze collaborative research between Singapore and Germany in advancing integrated carbon management solutions. The programme focuses on leveraging biological systems and hybrid (bio–electro–chemical) approaches to capture, convert, and recycle carbon emissions into value-added products. By combining expertise across biotechnology, electrochemistry, materials science, and systems engineering, the call aims to accelerate the transition towards a circular carbon economy that is scalable, resource-efficient, and deployable in real-world environments.
- 2.2 Ideally, the research results should lead to new products, processes, procedures or services - or at least point the way to them.
- 2.3 This grant call serves to further strengthen efforts in research and innovation between Singapore and Germany in the area of **Circular Carbon Economy** to build a basis for mutual market access and sustainable economic alliance. The grant call is both competitive and multi-disciplinary in nature and is aimed at encouraging engagements between the Singapore and German research community and industry collaborators. Projects should also aim to achieve a Technology Readiness Level (TRL) of between 5 and 7 upon completion. The call

is structured around two complementary pillars that address both the conversion of carbon streams and the sustainable sourcing of carbon feedstocks:

- **Pillar 1: Biological and Hybrid Conversion of CO<sub>2</sub> and C1 Carbon Streams**
- **Pillar 2: Sustainable Sourcing and Recycling of Carbon Feedstocks**

2.4 Examples of issues in the two pillars are detailed below:

- **Biological and Hybrid Conversion of CO<sub>2</sub> and C1 Carbon Streams**

Development, optimization or scale up of innovative biotechnological processes for the conversion of CO<sub>2</sub> or derived C1 compounds (e.g., carbon monoxide, formic acid, methanol, methane) into high-value carbon compounds, for example:

- Methods for CO<sub>2</sub> fixation and conversion by enzymes, metabolic pathways or microorganisms (e.g., anaerobic and aerobic gas fermentation, strain optimization through metabolic engineering and synthetic biology, non-natural metabolic pathways design in vitro, bioprocesses including coupled fermentation, co-cultivation of microorganisms)
- Biohybrid processes and electro biosynthesis for CO<sub>2</sub> reduction and conversion (e.g., use of electricity for biocatalytic CO<sub>2</sub> reduction and conversion, biocatalysis with (modified) microorganisms, enzyme-catalyzed conversion in cell-free systems, biocatalyst and/or electrode development, bioreactor development and process control)
- Fermentative conversion of carbon-1 bodies derived from CO<sub>2</sub> or a combination of physico-chemical processes for CO<sub>2</sub> conversion with biotechnical processes for the synthesis of longer-chain functional carbon compounds (e.g., engineering of bioprocesses and/or development and optimisation of microbial strains)
- Developing resource-efficient biotechnological processes that could be feasibly deployed in urban settings (i.e., efficient use of land, does not require much water, does not produce too much waste)

- **Sustainable Sourcing and Recycling of Carbon Feedstocks**

Recycling of carbon-rich material, as sub-topics:

- System-level integration and synergies (e.g., creating a regional/global value chain for transporting waste materials from source to location for carbon capture/mineralization)
- Mineralization products from novel waste materials, e.g., carbonates from old concrete or industrial residues (ash, fly ash, slag, serpentine, etc.)

2.5 For each new assessment, technology or concept to be developed under the two pillars stated above, a holistic perspective of the intended sustainability effects is required as a mandatory part of each project by Lifecycle Assessment (LCA), Life Cycle Cost (LCC) or Techno-Economic Assessment (TEA). The aim is to develop strategies with the highest impact on resource and energy efficiency, economic viability and social acceptance, as well as lowest environmental impact (e.g., reduction of environmentally harmful additives and residues).

2.6 The consideration of the following cross-cutting sub-topics in the proposal is of added value:

- New business models (implementation of circular carbon economy aspects)
- Improvement of methods or data for environmental impact assessment
- Social acceptance and trust as well as public perception of circular carbon economy aspects
- Health and safety issues
- Industrial symbiosis

2.7 Overall, the projects should:

- have a high practical relevance
- provide insights and usable research results that lead to new or advanced technologies, products and/or services (these can be both process and product innovations); in order to achieve these innovations within the project duration, project proposals are requested that have already reached a corresponding level of technological maturity, i.e., at least TRL 3
- identify strategies for implementing the research results in politics, society and industry
- develop solutions that can be implemented in major cities and metropolitan regions in Germany and Singapore
- include parameters for transferability to other cities and regions; in this context, test fields, real laboratories and pilot regions or cities for testing the developed circular economy concepts and technologies and for networking need to be involved, as far as possible
- promote young scientists (where appropriate)

### 3 ELIGIBILITY AND SUBMISSION INSTRUCTIONS

3.1 This Call for Proposals is a joint submission that involves at least **one Singapore-based and one Germany-based public sector research performer, with possible partnerships with one Singapore-based and/or one Germany-based industry collaborator highly encouraged**. Eligible Singapore-based public sector research performers include the Institutes of Higher Learning (including universities and polytechnics), A\*STAR Research Institutes, and non-defense-related public sector agencies (e.g., Ministries, Statutory Boards). Proposals must be submitted with the appropriate endorsement by the respective Host Institution (by the Chief Executive Director, Executive Director, the Director of Research or equivalent) to ensure that organizational support is clearly associated with the proposed research plan. Singapore-based applicants are required to submit their applications electronically via the Integrated Grants Management System (iGrants) by 20 August 2026, 23:59hrs SGT. The Germany-based public

sector research performer must also concurrently submit the joint proposal to BMFTR. Proposals received by A\*STAR and not submitted to BMFTR (and vice versa) will automatically be considered ineligible.

3.2 Each eligible institute must follow the application quota below:

- no more than 7 applications each for NUS, NTU and A\*STAR
- no more than 1 application each for all other institutes, research/healthcare groups

3.3 Each selected research project under this 5th grant call will be funded up to SGD 800,000 by A\*STAR (for Singapore-based public sector research performers) and € 560,000 by BMFTR (for the Germany component) for up to 36 months, and this includes funding for general overheads (30% indirect costs applicable for Singapore-based public sector research performers only).

3.4 Where industry collaborator(s) is/are involved, companies will be assessed on their contribution towards the quantitative and qualitative merits of the proposed project. These include the employment of research scientists and engineers, total business expenditure in R&D, investments in fixed assets, and the company's commitment to growing R&D capabilities in Singapore. Where two industry collaborators are involved in the same project, the two companies participating in the proposal must be separate entities. One of the companies should not be the Singapore/German office of the other participating company (i.e., Singapore company is the branch company or subsidiary of the German company and vice versa).

## 4 PROPOSAL REQUIREMENTS

4.1 Only COMPLETE proposals will be accepted for review, evaluation and assessment for award. Proposals must attempt to fully disclose the research ideas and approaches. It is important that proposals are well crafted and provide substantial description of the research plan for a fair review of the scientific and/or technical plans and approaches. Proprietary or confidential information must be clearly indicated in the proposal. Proposals must not be duplicative or substantially similar to any previous project or proposal submission, and public sector research applicants should not participate as Principal Investigator in more than one proposal.

4.2 The proposal shall contain the following; more details can be found in the application form

- The overall detailed joint project description,
- Details on the involvement and contribution of the Singaporean public sector research performers,
- Details on the interaction among public sector research performers of both countries,
- Details on the funding required for the Singaporean effort.

## 5 CRITERIA FOR EVALUATION OF GRANT PROPOSAL

5.1 Each project shall *inter alia*:

- Implement research findings to the industry or society (The project should have a minimum TRL level of 3 at the beginning and the team should indicate the target TRL level (5–7) at the end of the project in the application form).
- Apply state-of-the-art methods and advanced technologies.
- Be tackled in an inter-disciplinary approach involving scientists with different

- backgrounds in basic research and/or applied/closed research.
- Involve a mix of experienced and young scientists.

5.2 Projects should preferably provide leverage in one or more of the following means:

- Provide access to unique and/or specialized characteristics of overseas partner country (i.e., specific scientific knowledge or technique), availability of key manpower, common interest in seeking a breakthrough in a specific field, etc;
- Tap on specialized capabilities of overseas partner agencies, and through this, create strategic linkages to tap on specialized capabilities in the future; and
- Provide opportunities to learn/share/benchmark research with your international public sector research performer.

5.3 Other factors will include the following:

- Level of synergy of the proposed research to the collective set of activities,
- The abilities of the researchers, their past performances in prior awards, comments of the referees (if required),
- Effectiveness of project management, and
- Appropriateness of the requested budget.

## **6 PROPOSAL SELECTION AND AWARD PROCESS**

6.1 All joint proposals will be assessed and evaluated by scientific panels appointed by the respective implementing agencies from Singapore and Germany. These panels will consist of scientific experts who will review and recommend complete proposals for the award. Project proposals with clear strategies for implementing research findings to industry or society and show greater prospects of attaining a TRL level of 3 at the beginning and a higher target TRL level at the end of the project.

6.2 A\*STAR and BMFTR may seek referee reports, written submissions or presentations from some public sector research performers to justify, elaborate or clarify aspects of the research approach described in the proposal during the review process.

6.3 Notification of awarded projects will be sent to the respective employing organizations and copied to the respective public sector research performers.

## **7 INFORMATION OWNERSHIP**

7.1 The following should be satisfied prior to commencement of the project:

- Cooperating parties should enter into formal contract agreement, which should specify the roles and tasks to be undertaken by each party to the cooperation; and
- Share the ownership of Intellectual Property (IP) rights resulting from the cooperation, as well as the commercialization rights agreed amongst cooperating parties, and will be subjected to the contract assigned by both parties in the joint collaboration within reasonable limitations before the commencement date of the project.

7.2 A formal Research Collaboration Agreement (RCA) between the collaborating parties from Singapore and Germany would need to be signed and forwarded to A\*STAR and BMFTR not later than three (3) months after the Letter of Award of the project has been issued to the

team. Permission from A\*STAR and BMFTR must be sought at least one month in advance of this deadline if further time extension is required for the completion of the RCA. A\*STAR reserves the right to terminate the project should the team fail to submit the signed RCA within the stipulated deadline.

## **8 PROJECT REVIEW, MONITORING AND EVALUATION**

8.1 Each awarded project will be evaluated and assessed at the mid-term and end-term of the project for progress to ensure that proposed milestones and deliverables can be achieved. Successful grant applicants will be required to submit an annual progress report during the project term and a final report upon project completion to A\*STAR via iGrants and BMFTR.

8.2 Presentations and public seminars may also form part of the progress review of a project.

8.3 More details can be found in A\*STAR Grant Terms & Conditions and Guidelines on the A\*STAR Funding Opportunities website.

## **9 WHAT THE GRANT MONEY CAN BE USED FOR**

Grant funds may only be utilized on eligible activities incurred on the agreed project as defined in the grant arrangement.

### **9.1 Eligible activities**

Eligible expenditure must be focused on undertaking eligible activities, which are defined as being directly related to the project and may include – but are not limited to:

- employment of research personnel
- proof of concept activities (including field trials)
- other direct research costs
- exchanges and secondments of personnel between Singapore and Germany for project activities
- apparatus and small equipment required for the research project
- research project-related communication initiatives indicated in the methodology for the Research
- conferences, workshops, symposia related to the research.

This list is not exhaustive. We may update the guidance on eligible expenditure and activities from time to time.

### **9.2 Ineligible expenditure**

Grant funds may only be utilized on eligible expenditure incurred on the agreed project as defined in the grant arrangement.

For guidance on ineligible expenditure, please refer to Appendix A. We may update the guidance on eligible and ineligible expenditure from time to time.

## **10 TIMELINE OF GRANT OPPORTUNITY**

10.1 This Call for Proposal opens 30 June 2026. Singapore applicants are required to apply

electronically via iGrants [<https://igrants-app.a-star.edu.sg/>] by 20 August 2026, 23:59 (SGT).

Germany-based applicants are required to submit their applications to BMFTR's online system by 20 August 2026.

Grant recipients will be notified of the selection outcome via email by late-November to mid-December 2026.

10.2 The indicative timeline of grant call activities is as follows:

<b>Activity</b>	<b>Timeline (SGT)</b>
Application opening period	30 Jun 2026 to 20 Aug 2026
Assessment of applications and Cross evaluation	21 Aug 2026 to 14 Nov 2026
Joint Steering Committee review	15 Nov 2026 to 26 Nov 2026
Announcement of Outcomes	30 Nov 2026 to 18 Dec 2026
Project Start Date	1 May 2027

## 11 ENQUIRIES

11.1 For enquiries pertaining to this grant call, the respective contact personnel are:

### **A\*STAR (Singapore)**

E-Mail: [oga\\_bilats@a-star.edu.sg](mailto:oga_bilats@a-star.edu.sg)

### **DLR-PT on behalf of BMFTR (Germany)**

Dr. Ludwig Kammesheidt

E-Mail: [Ludwig.Kammesheidt@dlr.de](mailto:Ludwig.Kammesheidt@dlr.de)

## Appendix A – Ineligible Expenditure for Singapore applicants

This section provides guidance on what we consider ineligible expenditure.

The Program Officer-In-Charge (OIC) may impose limitations or exclude expenditure, or further include some ineligible expenditure listed in these guidelines in a grant agreement or otherwise by notice to you.

Examples of ineligible expenditure include:

Type of Expenses	Description
Salaries of Lead PI / Investigators / Visiting Professors & researchers/ Collaborators/ general administrative support staff	Not allowable unless specifically provided for in the grant and approved by Grantor.
Teaching buy outs	Not allowable for the hiring of substitutes to perform the Investigators' teaching duties.
Stipend top-up for existing post-graduate scholarship holders	Not allowable.
Undergraduate stipend and tuition support	Not allowable.
Costs related to general administration and management.	Not allowable unless specifically provided for in the grant and approved by Grantor. This includes common office equipment, such as furniture and fittings, office software, photocopiers, scanners and office supplies.
Costs of office or laboratory space	Not allowable unless specifically provided for in the grant and approved by Grantor. This includes renovation/outfitting costs, rent or depreciation of buildings and equipment, and related expenditures such as water, electricity, waste disposal and building/facilities maintenance charges.
Personal productivity tools & communication expenses	Not allowable, unless the use of mobile phones and other forms of smart devices were indicated in the methodology for the Research.
Audit fees (Internal and external audit) and Legal fees	Not allowable.
Entertainment	Not allowable.
Refreshment	Not allowable, unless this is related to a hosted conference or workshop, specifically approved by the Grantor for the Research.
Fines and Penalties	Not allowable.

Patent Application	Not allowable. This includes patent application filing, maintenance and other related costs.
Professional Membership Fees	Not allowable.
Staff retreat and team building activities.	Not allowable.

This list is not exhaustive and applies only to the expenditure of the grant funds. Other costs may be ineligible where we decide that they do not directly support the achievement of the planned outcomes for the project or that they are contrary to the objective of the program.

You must ensure you have adequate funds to meet the costs of any ineligible expenditure associated with the project.