

Call for project proposals: *Achieving Climate Goals through targeted CCUS Innovation*

INNO-CCUS pool 4

Application Deadline: May 28, 2025, at 12:00 noon.

Project duration: Minimum one year. Projects are expected to start within the first half of 2026 and must be concluded by November 30, 2030.

Total budget for this call: Approximately DKK 70 million.

Funding per project: Minimum DKK 3 million per project, no maximum budget limit per project, but the INNO-CCUS Board of Directors expects to fund between 5 and 15 projects.

TRL levels: Between 3 and 7 (applies to projects focussing on technological development aspects)

The call details and application process are described in sections 1-7 below and in other call-related documents as listed in section 6.

1. About INNO-CCUS

As one of the four Innomission Partnerships, funded by the Innovation Fund Denmark, the INNO-CCUS Partnership is committed to advancing carbon capture, utilisation and storage (CCUS) solutions essential for achieving Denmark's climate goals. We support research and innovation by bringing together partners from companies, universities and other knowledge institutions, public bodies, and other relevant stakeholders, and by co-funding initiatives that accelerate the green transition through cutting-edge CCUS technologies and solutions. Our efforts are guided by the [Danish CCUS Roadmap](#), which establishes a shared vision and outlines the strategic and technological pathways needed to unlock the full potential of CCUS.

2. What is called for?

With this call the INNO-CCUS partnership wishes to co-fund ambitious research and innovation projects that accelerate the advancement of CCUS technologies and solutions.

Five priority areas of the Danish CCUS Roadmap have been identified for this call, all essential for advancing the development of the required solutions for the future. The five prioritised areas are listed below, and project proposals must specifically address one or more of the subthemes listed under the priority areas. Please note that the subthemes under some priority areas may overlap with subthemes under other priority areas. Project proposals may span across several priority areas and subthemes depending on the focus of and problems addressed by the individual proposal.

We are looking for cross-sectoral, innovative and excellent collaborative research and innovation projects, that unite the most relevant and competent partners and stakeholders. Where relevant, consortia are encouraged to include international partners to leverage global expertise and experience. The involvement of young researchers and practitioners is also encouraged to help build future CCUS competencies. Given the complexities of CCUS innovation challenges project proposers should incorporate diverse methodologies and professional perspectives to ensure comprehensive analysis and effective solutions.

Project proposals concerning technological development and innovation must operate on the

technology readiness level (TRL) scope of 3 – 7. More information on the TRL scale can be found [here](#).

When selecting projects for funding, the INNO-CCUS Partnership will also consider the balance of the entire INNO-CCUS project portfolio and other national CCUS innovation projects. Applicants should therefore note current national research and innovation activities in the CCUS field. A non-exhaustive overview can be seen [here](#). Where relevant, applicants should address potential synergies or complementarities between existing projects and the proposed new project.

Prioritised areas of the Danish CCUS Roadmap for this call:

2.1. Advancing CO₂ capture technologies and implementation across diverse emission sources

It is crucial to improve and advance point sources capture solutions for major emitters in hard-to-abate sectors, waste incineration, bio-based energy production, and chemical processes. Research and innovation efforts should be tailored to individual emitters, as technologies and processes need to be adapted to the unique gas composition and specific operational conditions.

Subthemes to be addressed by project proposals:

- 2.1.1. Source-specific solutions:* Projects should focus on capture technologies optimized for different emissions, addressing specific challenges such as (but not limited to) varying gas compositions and operational conditions and transport and storage requirements. This could include (but is not limited to) chemical stability under varying conditions, purity requirements and standards for storage and utilization, corrosivity challenges and exploring new materials in process or infrastructure applications, or improved monitoring systems and control processes, including AI integration.
- 2.1.2. Integration and scalability:* We are looking for projects with a focus on integrating capture technologies into existing industrial processes and enhancing scalability. This could include (but is not limited to) technical and logistical challenges in moving from pilot to full-scale applications or the development of modular and adaptable systems suitable for retrofitting.
- 2.1.3. Energy efficiency:* Innovations that enhance energy efficiency of capture processes are important for reducing operational costs of capture solutions and reducing the overall carbon footprint. This could include enhancing existing methods, like amine-based absorption, and advancing alternative low-energy processes or solvents.

2.2. Achieving negative emissions through advanced technologies and nature-based solutions

Achieving a 110% reduction by 2050 requires removing at least 7.8M tons of CO₂ annually from the atmosphere. A multitude of solutions and technologies is required to accomplish this. INNO-CCUS is focussing on advancing Direct Air Capture (DAC) technologies, achieving scalable storage in biochar solutions, and innovative practices for maximizing carbon sequestration in natural carbon sinks like forests.

Subthemes to be addressed by project proposals:

- 2.2.1. Direct Air Capture (DAC):* DAC technologies are currently costly and energy intensive. We are looking for research and innovation projects to improve efficiency and scalability of DAC, focusing on reducing energy consumption and exploring synergies with other

processes. If relevant, projects should integrate or build on international experiences and studies, adapting them to a Danish context.

- 2.2.2. Biochar development:** There is a need for optimizing and scaling biochar solutions to advance the CO₂ storage potential of biochar to receive negative emissions. Optimizing biochar use in agriculture and land restoration is essential, focusing on aspects such as (but not limited to) adaptation to different soils and climates to maximize carbon sequestration and co-benefits such as enhanced soil fertility and agricultural productivity. Challenges with biomass supply and the role of biochar in general land use strategies are also important to address.
- 2.2.3. Nature-based solutions:** Understanding long-term carbon storage in various biosystems and future climates is essential to enhance nature-based CO₂ reduction solutions. This includes research on plant selection, soil and crop management, and biomass utilization, as well as improving methods to quantify, monitor, and verify carbon storage in natural systems. A deeper understanding of natural systems, including (but not limited to) tree growth conditions and species selection for carbon sequestration, is needed. This is especially important in relation to the June 2024 Green Tripartite Agreement, which involves the establishment of 250,000 acres of new forest in Denmark by 2045. Project proposals relating to this afforestation effort should estimate and document their contributions towards innovative practices and optimization of the CO₂ uptake effect of the afforestation activities resulting from the Green Tripartite Agreement.
- 2.2.4. System integration:** Integrating DAC, biochar, and nature-based solutions into future carbon management systems is essential. This involves frameworks combining technological and natural carbon capture, optimizing land use, and ensuring that methods complement each other for maximum sequestration. Synergies with renewable energy and sustainable practices could also be explored to enhance efficiency and impact.

2.3. Optimizing and scaling CO₂ storage solutions

It is a priority for INNO-CCUS to drive research and innovation that facilitates the transition from exploration to full-scale operational CO₂ storage which is a central pillar of Denmark's climate strategy. Several large projects in Denmark are close to full-scale operational storage activity, but there is a need for further research and innovation to fully harvest the learnings from these first-mover projects and to prepare for more and different storage sites in the future.

Subthemes to be addressed by project proposals:

- 2.3.1. Geological storage and infrastructure development:** We are looking for research and innovation projects addressing aspects like site-specific injectivity, seal capacity, CO₂ migration risks, subsurface interactions, injection techniques, and CO₂ purity impacts on pipelines and storage systems. This includes (but is not limited to) exploring the technical and logistical aspects of CO₂ transport via pipelines, shipping, truck, and rail, and adapting existing methods to accommodate the specific requirements of CCUS.
- 2.3.2. Monitoring and verification:** There is a strong need for developing advanced monitoring methods for storage sites, especially for land-based sites with limited access for traditional seismic monitoring equipment. Ensuring safety and accurate data on stored CO₂

behaviour, while addressing leakage risks, groundwater contamination, seismic activity and other subsurface conditions as well as regulatory compliance, are also key priorities.

2.3.3. Public-private collaboration: Large-scale CO₂ storage requires innovative business models that reduce financial risks for private investors. Projects could address challenges like investment frameworks, integrating storage into industrial processes, and meeting regulatory and safety standards. There is also a great need for projects focussing on how to create clear, actionable frameworks that facilitate cooperation between research, public entities such as government bodies, and private companies.

2.4. Expanding CO₂ utilisation for non-fuel applications

If we are to succeed in achieving carbon neutrality in the future, we need to substitute fossil-based carbon in many materials and chemicals with other carbon sources. Currently, conversion processes and CO₂-derived products are far from commercially viable, and the aim for INNO-CCUS with this call is to fund research and innovation projects that contribute to building the foundation for a future market for CO₂-derived products.

Subthemes to be addressed by project proposals:

2.4.1. Non-fuel product development: There is a need for more and varied solutions for utilization of CO₂ and for developing new applications for CO₂-derived products. The focus of INNO-CCUS projects should be on chemicals, durable materials, and construction materials, currently relying heavily on fossil-based components/materials in the production process.

2.4.2. Process innovation: Most technologies for utilizing CO₂ in non-fuel products are currently at a TRL below 6. Enhancing the efficiency of CO₂ conversion processes is important to ensure commercial viability, aiming for lower energy consumption and higher process efficiency. This could include CO₂ purification, catalyst development for CO₂ utilization to chemicals and durable products or optimizing process parameters.

2.4.3. Market development: There is a need for investigating market potential and scalability of CO₂-derived products as well as demonstration and documentation of these applications' economic feasibility and environmental benefits. Other aspects of market development for CO₂-derived products such as value chain interrelations, finance models and regulatory conditions are also important to investigate and develop further.

2.4.4. Reduction and replacement effects of CO₂ utilisation: There is a critical need for a deeper understanding of the reduction potential in long-term CO₂ storage within materials and products. This includes comprehensive life cycle analyses from both an emission reduction and environmental impact perspective. Projects could focus on assessing long-term CO₂ storage in materials or evaluating the scalability of CO₂-derived products, such as biochar in building materials or enhanced carbonization of construction and demolition waste.

2.5. Strengthening Societal and Systemic Integration of CCUS

Achieving a net-zero society depends significantly on CCUS technologies. However, their successful deployment requires more than technological advancements alone. A systemic and holistic approach is essential to identifying and addressing non-technical barriers that may hinder implementation. This prioritised area aims to drive progress across the identified subthemes and the broader CCUS field, ensuring the establishment of the necessary conditions, knowledge base

and societal framework to enable CCUS to fulfil its critical role in combatting climate change.

Subthemes to be addressed by project proposals:

- 2.5.1. Public engagement:** We need research to better and deeper understand public perceptions of CCUS technologies and develop strategies for engagement and education to advance effective integration of CCUS technologies in society. Understanding community preferences and effectively engaging them in decision-making processes is crucial for establishing storage facilities and other large infrastructures causing public concern. Projects could focus on effective collaboration models or co-creation approaches, perceptions of risks, the distribution of costs and benefits, and the role of media and communication strategies.
- 2.5.2. Regulatory and market Innovation:** Explore innovative regulatory approaches that facilitate the deployment of CCUS technologies, including CO₂ import/export regulations and incentives for CO₂ utilization. This could include examining modes of collaboration among the various actors along the value chain, understanding market drivers and the roles of regulators, assessing the impact of various financing and business models, including the interplay between public subsidies and market mechanisms. The development of reliable carbon credit markets including robust, transparent and reliable certification processes is a critical factor for driving the development, and research into this would be important for facilitating development of a sustainable CCUS sector.
- 2.5.3. System integration analysis:** There is a need for better understanding how CCUS technologies are integrated into Denmark's broader energy and industrial systems. Projects could focus on coupling CCUS with the energy grid, considering the fluctuating availability of renewable energy sources. But there is also a need for better understanding of the broader societal systems integration of and framework for establishing a new CCUS sector and how these fit with national climate and industry policies as well as energy strategies.

3. Who can apply?

Any legal entity (such as an enterprise, a research institution, an NGO, or a public institution) in or outside Denmark and directly involved in the project activities is eligible to apply, participate in, and receive funding from the INNO-CCUS partnership. However, the main applicant of a project proposal must be a Danish participant as defined by having a Danish CVR number.

The project consortium must include at least one partner which is a knowledge institution¹ and one industry partner. In some cases, an industry partner can be replaced by a non-industry partner, for instance public institutions, municipalities or NGO's – if such a partner is more relevant for the implementation or uptake of results and outcomes of the project. Still, attention should be given to engaging all stakeholders relevant to the proposed project. To strengthen Danish entrepreneurial industry capacities within CCUS and to draw on expertise and experience from abroad, we encourage applicants to include partners from small and medium-sized enterprises (SMEs) as well as international partners when relevant to the project.

¹ Including the Danish GTS-institutes, universities, university colleges, sector research institutes and other independent research and advisory institutions such as The Geological Survey of Denmark and Greenland (GEUS). See the document "Funding Rates, Cost Categories and State Aid Rules, INNO-CCUS 2025" for details.

Some organizations may be disqualified from receiving funding from INNO-CCUS according to the rules on state aid or due to EU sanctions. Please see section 8.1. of the [Guidelines Innomission 2024](#) for details.

INNO-CCUS is committed to promoting equal opportunities and diversity in all its aspects. Therefore, interested parties from all backgrounds regarding ethnicity, religion, gender identity, age, nationality, neuro-diversity, or disability status are encouraged to apply for funding from the partnership.

4. What and how much can be applied for?

INNO-CCUS can co-fund salaries and other expenses directly related to the project activities or to activities contributing to CCUS capacity building, for example through entrepreneurial PhD activities.

A maximum of 75,0% of the total project expenses may be financed by INNO-CCUS.

Funding from INNO-CCUS is granted in accordance with the EU rules on state aid and will either be categorized as block-exempted aid covered by Article 25 of the GBER or de minimis aid covered by the de minimis regulation.

All project participants must co-fund project expenses.

Specific maximum funding rates and other budgetary rules apply to the individual project partners depending on:

- The type of organisation (private company, university, etc.)
- Whether the partner organisation carries out economic or non-economic activities
- Whether the funding is under the GBER or de minimis regulation
- Whether the partner carries out industrial research or experimental development.

Please see the document “*Funding Rates, Cost Categories and State Aid Rules, INNO-CCUS 2025*”, which can be downloaded [here](#), for further explanations, specific maximum funding rates per type of partner and other budgetary rules and restrictions.

The total budget for this call is approximately DKK 70 million, and the INNO-CCUS funding per project is minimum DKK 3 million.

5. What are the requirements?

All projects and project proposals must:

- Address one or more of the targeted themes listed in the call text.
- Include at least one partner from a knowledge institution and one industry partner. In some cases, an industry partner can be replaced by a non-industry partner, for instance public institutions, municipalities or NGO's – if such a partner is more relevant for the implementation or uptake of results and outcomes of the project.
- Have secured co-financing of at least 25,0%
- Start at least at TRL 3 and reach a maximum of TRL 7 in the project period (only relevant for projects with a focus on non-technological development aspects)
- Have a project duration of at least 1 year and start no later than during the first half of 2026
- End no later than November 30, 2030.
- All project participants must accede to the INNO-CCUS Partnership Agreement upon confirmation of successful application and prior to receiving the first instalment of funding from INNO-CCUS

- Adhere to all formal requirements as stated in this call text, the application template and appendices, the Innomission Guidelines 2024 and the Instructions for INNO-CCUS applicants, pool 4 projects.

6. What must be included in the application?

Applications must be written in English using the INNO-CCUS pool 4 application template and the appendix templates listed below.

The maximum text limit is 30,000 characters for the project proposal, including spaces but excluding mandatory tables.

Only the appendices listed below can be included in the application.

All applications must be submitted via “Filkassen” no later than 12:00 noon on May 28, 2025, and must include the following documents:

1. Key Application Information
2. Application
3. Appendix A – Figures, pictures, tables. Max. 5 pages (*optional*)
4. Appendix B – Key persons incl. 1-page CVs
5. Appendix C – Partner motivation
6. Appendix D – Gantt chart
7. Appendix E - Budget

Mandatory templates for all application documents can be downloaded [here](#).

Please follow the instructions on file format and titles as specified in the document “Instructions for INNO-CCUS applicants, pool 4 projects”.

The INNO-CCUS partnership does not accept applications in which a successful outcome is dependent on receiving additional funding (e.g. projects that involve financing in multiple phases).

Other documents relevant to the application:

- Process for funding INNO-CCUS pool 4 projects
- Assessment criteria for INNO-CCUS pool 4 projects
- Instructions for applicants, INNO-CCUS pool 4
- Funding Rates, Cost Categories and State Aid Rules, INNO-CCUS 2025
- Guidelines Innomission, 2024
- Danish CCUS Roadmap
- State of CCUS (national project overview)

All documents can be downloaded [here](#).

7. How is the application evaluated?

After the application deadline, the INNO-CCUS Secretariat will conduct an eligibility check of all applications to ensure that they comply with the formal requirements and that all requested information has been received. Failure to comply with the requirements specified in sections 3-6 of this call text and with the instructions in the application and budget templates will result in the application receiving an administrative rejection without substantive consideration.

All eligible applications will then undergo an assessment based on the following four main criteria:

- 1: Quality of the idea**
- 2: Impact**
- 3: Quality of execution**
- 4: Strategic fit to the INNO-CCUS mission and roadmap**

A detailed description of these evaluation criteria is available in the document “Assessment criteria for INNO-CCUS pool 4 projects” to be found [here](#).

International peers will evaluate criteria 1-3, and the INNO-CCUS Board of Directors will evaluate criteria 4.

The assessments by international peers of criteria 1-3 are subject to consultation (in Danish: “partshøring”). The applicants will receive the assessment reports from the international experts and are allowed to submit a consultation response to be considered by the INNO-CCUS Board of Directors in their further assessment process.

Based on the assessment results on all four criteria, the INNO-CCUS Board of Directors will invite a number of project proposals for brief interviews, before making the final funding decision.

The INNO-CCUS Board of Directors will make the final decision regarding which projects to fund, and applicants will be notified of the result in writing (e-mail). Before notifying the applicants, the Innovation Fund Denmark will ensure that the decision is compliant with state aid rules and with the regulations and conditions pertaining to the Innomission Program.

With calls currently open for both pool 3 and pool 4 projects, the INNO-CCUS partnership is giving applicants with project proposals fitting the themes and requirements of both calls the opportunity of having the application evaluated under both calls under certain conditions. The document “Process for funding INNO-CCUS pool 4 projects” available for download [here](#), describes this and all other elements of the evaluation process in more details.

8. Contact info

For questions, please get in touch with the INNO-CCUS secretariat at application@inno-ccus.dtu.dk. Please note that the secretariat is not allowed to advise on the specific content of an application, and neither is the Board of Directors.