

Call for:

## Mission-driven green research and innovation partnerships (Innomission partnerships)



Application deadline: 19 October 2021 at 12:00 CET

Innovation Fund Denmark (IFD) calls for mission-driven green research and innovation partnerships within four areas:

1. Capture and storage or use of CO<sub>2</sub>
2. Green fuels for transport and industry (Power-to-X, etc.)
3. Climate- and environment-friendly agriculture and food production
4. Circular economy with a focus on plastics and textiles

### Missions are to fulfil ambitious goals

Denmark is committed to act on and reduce climate changes and has set goals to:

1. 70% reduction of greenhouse gas emissions (GHG) in Denmark by 2030 and net-zero emissions by 2050, and strengthen environment and nature, and
2. contribute to increased competitiveness of the Danish businesses and industries.

To fulfil these goals the government and all parliamentary parties have defined four missions as stated in the “Green solutions of the future - Strategy for investments in green research, technology, and innovation” as well as the agreement for the Research Reserve for 2021.. These missions focus on challenges that are critical for Denmark to address in order to reach its GHG ambitions. And they present significant opportunities for the Danish economy, drawing on Denmark’s competitive advantages and capabilities. With the missions the government sets a long-term direction for green research, innovation, development, and demonstration accelerating the development of new green solutions and technologies. This is a strategic research and innovation effort over several years.

### Innomission partnerships: Translating mission roadmaps into sustained actions

The call for mission-driven green research and innovation partnerships is the second phase in Innovation Fund Denmark’s (IFD) Innomission program. Phase one generated roadmaps for each of the four missions (<https://innovationsfonden.dk/da/programmer/groenne-missioner/roadmaps-mission-driven-green-research-and-innovation-partnerships>). Phase two now asks for proposals to form Innomission partnerships to drive action based on the directions outlined in the roadmaps.

During phase one Innovation Fund Denmark received 12 roadmaps within the four mission areas. Of these 12 roadmaps, six roadmaps were selected by the IFD Board of Directors to provide direction to the partnerships in designing action plans. The six roadmaps are described below and are available at the IFD homepage. IFD is planning to invest in one partnership within each of the four missions, however, depending on the submissions IFD might decide to fund more than one partnership per mission.

The application for mission-driven green research and innovation partnerships should outline activities and the organisational structure proposed to implement the roadmaps and achieve the mission’s goals and visions. Each partnership will have to build on one final roadmap. The final, roadmap (according to the decision on roadmaps by the IFD as stated below) will be the backbone of the application. The final roadmap for each mission should be in accordance with the guidelines for roadmaps as stated in the call for roadmaps.

## General guidance for Innomission partnerships

The following is to be specified in the application for partnerships:

### 1. Value creation and impact

Based on the prioritized pathways the application should state and quantify: 1) the value creation and impact of each pathway. This includes quantifying and setting clear KPI's for the mission CO<sub>2</sub>e reduction impact as well as the partnership's contribution to fulfilling the strategic goals for climate, environment, and biodiversity, 2) the partnership's potential for increased Danish exports and international market opportunities, including the Danish job creation potential and identified job types within your mission. For an elaboration of the strategic goals please see the evaluation criteria below as well as the "Structure for Innomission-roadmap" at the IFD homepage (<https://innovationsfonden.dk/da/programmer/groenne-missioner/roadmaps-mission-driven-green-research-and-innovation-partnerships>). Moreover, the application should define the key inflexion points towards achieving the overarching goals of the partnership.

### 2. Prioritisation of activities

The application, based on the roadmaps' pathways and KPI's, should include a broad mission action plan that on an overall level shows that the partnership has a clear plan of how to reach the goals. In order to follow and execute this broad plan the partnerships should have clear decision criteria for new projects in place, so that the partnership (and IFD) will be able to make sound decisions about specific projects over the lifetime of the mission. Moreover, the partnership must specify concrete projects for the first years of the partnership (see more detail below: "IFD funding of partnership activities"). This in many cases means that the roadmaps should be updated at least once a year in relation to the investment review with clear and specific prioritisation of activities and expected outcomes of the early projects. Already ongoing national and international project-activities supporting or complementing the proposed activities must be taken into consideration when planning for partnership activities.

### 3. Partnerships covering the entire value chain

Innomission-partnerships should aim to cover the entire value chain and collect all driving forces from researchers, investors, existing and new industries, technology providers, education and talents, legislators and authorities to users and customers, and will include description of technical, implementation/regulatory, and business/financial pathways to the vision.

### 4. Private sector engagement

To ensure the transition to market and scalability of solutions all partnerships are required to have significant industry involvement – both by engaging industry in driving the partnership and in co-funding projects. Strong industry engagement is highly relevant in terms of identifying early market trends- and business development directions at low TRL as well as for implementing solutions downstream along the roadmap routes at high TRL levels.

Industrial engagement should include start-ups, SME, large enterprise in all aspects of the partnership. Moreover, the engagement of risk capital organizations is a clear benefit to secure capital for solutions to reach the market. Partnerships are strongly encouraged to also consider elements of capacity building in relation to supporting good conditions for start-ups and SME's within each mission.

### 5. International expertise and talents

Based on the partnership's identification of Danish strongholds and research gaps the application must outline the partnership's plan for involvement of international expertise (e.g., from international private companies or international universities) – related to each work stream/activity. Collaborating with efforts abroad can complement the Danish activities and is an important way of adding relevant key knowledge to the missions. Moreover, it can attract and engage international talents to increase short- and long-term impact.

## **6. National and international gearing of investment and co-funding**

IFD has a role as key funding partner for starting up the missions but will not be able to fund the complete mission towards 2030 and 2050. The partnership application should also outline the plans for gearing of the IFD investment and co-funding activities with other public and private funds to complete the mission towards 2030 and 2050.

IFD asks all partnerships to specifically outline the plan for engagement in EU programmes and partnerships related to the mission.

## **7. Regulatory framework**

Partnerships should identify any current regulations and policies within the fields, and outline which regulatory barriers that may exist and thereby need to be altered to ensure that solutions can reach impact. The regulatory framework in many cases is not fully specified or implemented at mission start. It is thus relevant that the application relates to identify possible alternative roadmap routes depending on future expected regulatory framework scenarios and inflection points. Partnerships should include activities related to developing the required scientific basis for existing or new regulatory frameworks, new types of regulation, business models, consumer behaviour etc. that can help Denmark meet accomplish the mission.

## **8. Public demand as a driving force**

Partnerships are strongly encouraged to include activities related to models that can help municipalities, regions, etc. setting up new structures leading to economy-wide de-carbonization by creating market preferences for low-carbon products. It is therefore also strongly encouraged to include the public sector as active partners in the partnership.

## **9. Citizens' and end-users engagement**

Partnerships should outline how they plan to effectively engaging citizens and end-users in the proposed transition. This includes making use of how information, empowerment, regulations, and incentives affect citizens' behaviour and adaption to the proposed transition(s).

## **10. Communication on mission progress**

All partnerships should in their application commit to assist the IFD in organising an annual external event across all missions to secure ongoing involvement of relevant stakeholders and thus sufficient mission impact. This event should be organised to include other foundations, investors, politicians, industry organizations etc. Further communicative actions such as dissemination to the broader public, politicians, investors, other foundations to ensure full impact of the partnership activities should be described

## **11. Synergies between missions**

To avoid activity overlap between missions, partnerships should identify topics with potential overlap and suggest mechanisms to coordinate across missions in order to reap the synergies between missions.

## **12. Visualisation of roadmaps including deliverables**

Based on the prioritized activities for the partnerships, applications should provide visualisations of the roadmaps describing the presumed route to the target including the key inflexion points to be achieved. Roadmaps must include timing for expected deliverables on the CO<sub>2</sub>e-reduction. Please make the description approaching 2030 the most detailed and sketch remaining parts.

### Mission-specific guidance for Innomission partnerships

Apart from the general directions mentioned above, these are the specific directions for the partnership within the specific missions:

#### **Mission 1: Capture and storage or use of CO<sub>2</sub>**

Mission partnership 1 should design its action plan based on roadmaps 1112-00004A & 1112-00010A in appendix 1 and 2.

Allocated IFD budget frame for mission 1: 195 mio. DKK as a minimum.

The proposed partnership initiatives should establish a appropriate balance between the activities suggested by 1112-00004A - CCUS Mission CCUS and 1112-00010A - GCCUS and to secure both short-term impacts and long-term innovation efforts along the value chain covering CO<sub>2</sub> capture, intermediate /permanent storage, infrastructure/ transport and sector coupling activities

#### **Mission 2: Green fuels for transport and industry (Power-to-X, etc.)**

Number of recommended roadmaps 2: (1112-00008A & 1112-00012A in appendix 3 and 4)

Allocated IFD budget frame for mission 2: 195 mio. DKK as a minimum.

Mission partnership 2 should design its action plan based on the two roadmaps 1112-00008A and 1112-00012A. The proposed initiatives should be based on the comprehensive roadmap (1112-00008A: Roadmap for Green Fuels in Transport and Industry) and include the specific projects outlined in roadmap 1112-00012A - E-transport with a clear focus on implementing key power-to-X technologies. All relevant activities should be included in the mission partnership proposal, distinguishing between the activities to be funded by IFD and those that will have to be financed by other means as stated below.

#### **Mission 3: Climate and eco-friendly agriculture and food production**

Number of recommended roadmaps (1112-00006A in appendix 5)

Allocated IFD budget frame for mission 3: 195 mio. DKK as a minimum

Mission partnership 3 should design its action plan based on roadmap 1112-00006A. The applicants should consider concentrating on a smaller number of activity areas than outlined in the roadmap. The applicants should consider creating a partnership to economize on costs, while organizing activities in two different tracks; 'Land use and management and plant-based biomass', and 'Animal based and processed plant based food production and alternative protein sources', given the considerable autonomy of the activity areas outlined in the roadmap.

#### **Mission 4: Circular economy with focus on plastic waste and textiles**

Number of recommended roadmaps 1: (1112-00007A in appendix 6)

Allocated IFD budget frame for mission 4: 100 mio. DKK as a minimum

Mission partnership 4 should design its action plan based on roadmap 1112-00007A.

### IFD funding of Innomission partnership activities

The Innomission partnerships will execute a set of activities that covers a longer time-frame than for other IFD programs. The funding structure offered by IFD reflects this difference, and the need for flexibility to continuously align the partnership roadmap and activities that will be specified in detail during the course of the Innomission based on gained knowledge and other national / international initiatives in the course of the partnership duration. A full budget for the total investment must be submitted along with the partnership application. The proposed budget should be divided into two 'pools':

- **Pool 1**

The first pool can include up to 50% of the total budget the partnership is applying for. It must cover all activities within the first period (minimum one year) of the partnership duration, and cover all activities that the partnership has already fully specified. Cost that relate to the full duration of the partnership, e.g., administrative and management costs, equipment and initiation of longer lasting activities should also be included here.

All activities corresponding to the first pool must be described in detail in terms of work breakdown, deliverables, dependencies between the activities, milestones, stop/go decision criteria and graphical illustrations of the work in the form of Gantt-charts or similar. Also, a resource-breakdown per participating partner is required.

- **Pool 2**

In the second pool (the partnership can decide to further split this pool) the corresponding activities are not expected to be described in detail in the application. However, as mentioned in point two in the general guidance above, in order to follow and execute the partnership's broad plan and reach the defined milestones the application has to outline clear decision criteria for new projects, so that the partnership (and IFD) will be able to make sound decisions about specific projects over the life time of the mission.

In connection with the release of funding from pool 2, the IFD shall perform an Annual Investment Review (at least once a year) together with the mission partnership and international experts invited by IFD such as members of the *Missions International Advisory Board*. The application must describe the partnership governance for how investments will be distributed over time and how the IFD Annual Investment Review will be incorporated into this process in order for the partnership to execute the mission goals. The pool 2 funds are to be released according to the same evaluation criteria as applied for the partnership application (below) and the process approved by the Innovation Fund's Board of Directors, and the release is subjected to approval by the Innovation Fund's Board of Directors.

The budget must for each pool specify partner co-financing. For further details regarding budget details such as maximum IFD funding rates and co-financing, please refer to *Guidelines for Grand Solutions and Innomission-partnerships (August, 2021)*.

In the case that gaps in relation to the quality of the partner group and the organisations (both public and private) capacity are identified the budget related to capacity building should be included. Capacity building as the improvement in the organisation's capability to reach the mission goals, including internal improvement at an individual and organisational level.

The partnership must have an overarching grant-holder of the partnership grant from IFD and the application must describe how the grant-holder will administer the grant and redistribute the grant to existing and potentially new partners according to planned activities corresponding to the pools. The grant-holder must be a legal entity such as an association (formed by the partners).

It is mandatory to describe the overall organisation of the work and activities within the partnership for the full duration in a more generic overall structure, e.g., in the form of a workstream structure, portfolios, or thematic areas all in connection with the mission roadmaps.

Partnerships should include all activities to be performed by the mission partnership, however, it is important to distinguish between activities that are to be funded by IFD and are therefore limited by the state aid rules from activities financed by other means, e.g. private investors.

### Governance and leadership

The application must describe the following:

- The partnership governance model, decision-making mechanisms and how the partnership will be lead and managed, including the qualifications of management team, diversity in the team, etc.
- Why the proposed partnership constitutes the right partner composition for the purpose of achieving the goals of the mission, including how the organisational structure and decision-making mechanisms match the complexity and international scale of the partnership.
- The partnership engagement plan and associated communication strategy allowing for flexible uptake of new ideas and partners, and continuous alignment of the roadmap with other initiatives at all levels.
- How the partnership will build an eco-system across the whole value chain that can implement the required innovation for the specific mission.
- Composition of a partnership Board of Directors with authoritative representatives from the various partners including project beneficiaries, leadership experience, plan for rotation etc.
- How the partnership plans to include IFD into its governance to ensure a smooth process in defining, approving and monitoring the activities corresponding to the additional funding pools.

### Evaluation criteria

Innomission-partnership proposals will be evaluated based on their overall impact on GHG-reduction and their potential for increasing Danish competitiveness, including the partnership's potential for securing existing and creating new jobs, building start-ups and enabling exports of green solutions. Moreover, the partnership's ambitions will be assessed against their ability to reach the Danish strategic goals based on the framework described in the "Green solutions of the future - Strategy for investments in green research, technology, and innovation" as well as the agreement for the Research Reserve for 2021, the visions and recommendations described in the "13 climate partnerships" reports, the "Climate plan for Waste, water and circular economy", and the evaluation of Danish strategical goals for strengthening nature and biodiversity will be based on the overall "EU Biodiversity strategy 2030".

For the purpose of evaluating the robustness of the Innomission-partnerships as well as their impact and value creation the four evaluation criteria as stated below are used. The evaluation criteria include the abovementioned 12 guiding points:

- 1) **Impact** – outline the actual and potential contribution to the goals and green objectives as well as the creation of new green international industrial strongholds in Denmark.
  - Outline of the value creation, impact and prioritisation of activities. Potential impact by the Innomission-partnership on each mission-goals (climate, nature, environment, sustainable economically green growth), by which routes/method/standard they are measured, which trade-off decisions are made, and on how follow-up on these goals will be carried out.
  - Business model(s), scaling, strategy for financing (national and international gearing of investment and co-funding), advancement in Technology Readiness Levels (TRL) and Societal Readiness Levels (SRL) etc.
  - Actions undertaken to ensure that beneficiaries implement the results or take the results to the next step and highlighting the economic, regulatory framework, technical and societal barriers for implementation and a strategy for overcoming these barriers.
  - Strengthening green transition competencies, capacity and interplay across the innovation ecosystem, including creating an open innovation environment targeting start-ups and SME's
- 2) **Execution** – implementing the roadmaps.
  - Plan for organising the partnership (governance and leadership) ensuring efficient and effective implementation of the roadmap activities, taking into account contingencies throughout the time-frame of the mission, and continuous alignment of the roadmaps with other initiatives.
  - Plan for ongoing dissemination of the partnership progress to all relevant stakeholders across the mission areas aiding the collaboration between partnerships where synergies arises, and aimed towards peers, other foundations, investors, politicians, industry organizations etc

- Quality of partner group across the entire value chain including experiences, resources, and complementarity from both the public and private sector in a national and international setting including technology providers, public and private market drivers, citizens and end-users. In the case that gaps in relation to the quality of the partner group and the organisations (both public and private) capacity are identified an outline of capacity building should be included.
- 3) **Innovation** – moving beyond existing thinking and implementing new technologies;
- Degree of innovation within implementing new technologies, solutions and business models that provide novel approaches on an international level towards creating environmental and economic value.
- 4) **Excellence** – challenges, needs, gaps, key questions met by Danish strongholds within the partnership that cover the area of each mission.
- Quality in relation to unmet needs, State-of-the-Art and competing scientific, behavioural or technical solutions based on current and future Danish strongholds with a clear European and global perspective and outlook.

### Decision process

The decision on which partnerships will be invited for contract negotiations is the responsibility of the impartial members of the Innovation Fund's Board of Directors. The cornerstones in the process are a two-step evaluation:

Step 1: Evaluations of the written proposal are conducted by a minimum of two internal IFD evaluators (including the below mentioned contact persons from each mission) and 2-5 international peers (selected from the EUREKA expert database). Evaluations from external peers will be subject to a hearing process. Evaluators score each proposal on a scale from 1-6 based on the evaluation criteria. The total score and joint evaluation form the basis of the decision by the impartial members of the Innovation Fund's Board of Directors of which proposals will advance to step 2.

Step 2: Applicants are invited for an interview (which will be arranged for week 48), with a panel of national and/or international experts and possibly IFD board members and other relevant stakeholders. A final assessment based on the first and second step will then inform the decision by the IFD Board of directors to render an invitation for contract negotiations, which will form the basis of the final investment.

All experts and peers, both internally and externally involved in the work of evaluating partnership applications must declare their impartiality before accessing the material, re the rules of IFD (<https://innovationsfonden.dk/da/saadan-arbejder-innovationsfondens-bestyrelse>). Ultimately, the impartial members of the Innovation Fund's Board of Directors decide on the investment in partnerships.

### Instructions - links

- Guidelines for Grand Solutions and Innomission-partnerships (August 2021)
- Instructions for eGrant
- Vejledning om effektiv tilskudsforvaltning - <https://oes.dk/media/14941/vejledning-om-effektiv-tilskudsforvaltning-2016.pdf>

### Appendix:

Appendix 1: 1112-00004A - Mission CCUS – a roadmap for Carbon Capture, Utilisation and Storage

Appendix 2: 1112-00010A - The Green CCUS Roadmap - Towards a fossil free future

Appendix 3: 1112-00008A – Roadmap for Green Fuels in Transport and Industry Innomission 2 (2021)

Appendix 4: 1112-00012A - Innomission Roadmap Leveraging Danish strengths to mature and scale up e-fuels for transport

Appendix 5: 1112-00006A - AgriFoodTure - Roadmap for Sustainable Transformation of the Danish Agri-Food System

Appendix 6: 1112-00007A Circular economy with a focus on plastics and textiles A 2030 & 2050 Roadmap

**Contact:**

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