

Information regarding Moonshot call 2024

In 2024, Moonshot will accept new project applications of the following project types:

- Early Stage Innovation projects (ESI)
- Later Stage Innovation projects (LSI)

As part of the Moonshot call 2024, this document aims to inform on the ESI and LSI projects, for which knowledge institutions are the beneficiaries of the financial support.

In the future, more information will be made available on the possibility for other project types within Moonshot. This could be for example Feasibility studies for companies (FSC) and/or Company-driven research projects (ICON, O&O).

Early Stage Innovation projects (ESI)

This is the project type previously referred to as “cSBO”. These can be “full” ESI projects (max. 4 years, max. 3 million euros subsidy) or “continuation” ESI projects (max. 2.5 years, max. 2 million euros subsidy, as a continuation of previously approved “sprint” cSBOs). There is a requirement for the consortium to comprise of at least 2 research institutes and 3 research groups. The subsidy percentage is 100%.

Project ideas can be submitted using the early application form in attachment. A two-step evaluation procedure is foreseen. Each project idea will be discussed, and feedback will be given based upon this initial information. Outcome of the selection will be a “go/no-go” decision (a “go” decision can be accompanied with ‘minor’ or ‘major’ remarks) towards the preparation of a fully elaborated project application file.

Later Stage Innovation projects (LSI)

Later Stage Innovation (LSI) projects aim to further support and accelerate research that has already proven its feasibility at low TRL. LSI projects seek to bridge the gap between experimental process/product development and industrial implementation. LSI projects are important instruments to accelerate the future market introduction of new and innovative products, processes and services that significantly contribute to the overall Moonshot goals. LSI projects should also lead to greater economic and social added value and more robust international valorisation of knowledge generated by Flemish research and knowledge institutes. In practice, LSI projects provide support to research and knowledge institutes for subsidising infrastructure, knowledge build-up and de-risking of the intended technology.

The project modalities of the LSI project type remain unchanged: max. 3 years, max. 2 million euros subsidy. LSI projects can be applied for by a consortium or a single research partner. The subsidy percentage is 100%.

Project ideas can be submitted using the early application form in attachment. A two-step evaluation procedure is foreseen. Each project idea will be discussed, and feedback will be given based upon this initial information. Outcome of the selection will be a “go/no-go” decision (a “go” decision can be accompanied with ‘minor’ or ‘major’ remarks) towards the preparation of a fully elaborated project application file.

Timing

This first selection will be made by the Board of Directors (or their delegates) of Catalisti and Flux50 based on a written and leading advice given by the Scientific Advisory Board (WAR) of Moonshot.

Timing for the submission of the early application form for both ESI and LSI projects is 9th of February 2024. Feedback on the early application form (“go/no-go” decision, motivation included) is foreseen for the 22nd of March 2024.

Fully elaborated project applications will be given a submission deadline of 7th of June 2024.

Contact

Please contact moonshot@catalisti.be in case of questions or to obtain more information.

Research topics, themes and general reflections

Based on discussions within the Moonshot Scientific Advisory Board (WAR) and with selected industry representatives, we hereby provide a list of specific research areas which are deemed of interest to Moonshot, and which can be used for inspiration in setting up a research proposal. Furthermore, some general reflections and points-of-attention are also summarized. Other topics not specifically mentioned below are also welcomed, given a contribution to the realization of the Moonshot objectives.

MOT 1 – Bio-Based Chemistry

- Focus on feedstock (biomass) that is not competitive with the food chain, including organic waste (e.g., tomato waste, malt from breweries), but that is abundant and interesting as feedstock.
- Significant CO₂ impact is only achievable with high volume chemicals.
- Key hurdles towards technical and economic feasibility should be tackled first.
- It is highly recommended to provide some preliminary data in MOT1 applications in the early application file and/or full proposal regarding, for example, titer, productivity, price, etc. when regarding biotech processes (for the purpose of estimating the techno-economic feasibility).
- Research into proteins/peptides (can organize themselves and therefore have many functionalities) (e.g., surfactants, coatings, binders, enzymatic catalysis).
- Chemistry based on oils and fats.
- Polysaccharide chemistry based on e.g., algae, seaweed, insect/shrimp exoskeletons, etc.

MOT 2 - Carbon Circularity in Materials

- Detection and identification of different polymers: technology, digitization, optimization routines, etc.
- Focus on mono-materials that are more recyclable (design-for-recycling / eco-design, e.g., to address extended producer responsibility).
- Research into the design for simple mechanical recycling and research aiming the creation of a depolymerisation toolbox are currently underrepresented in the Moonshot project portfolio
- Bio-based materials and recycling: removal of impurities, separation, circularity.
- Composting organic waste (related to packaging): increasing speed and efficiency, circularity.
- Logistics about waste collection and circularity.

MOT 3 - Electrification and Radical Process Transformation

- Avoidance of CO₂ emissions (also look at other processes). Unit operations: intensified separation technology (especially optimizing the energy input).
- From batch to continuous.
- Conversion of CO₂ and partial oxidation (of e.g. ethylene and propylene) by means of electrochemical techniques (these will be needed for defossilization, along with cheap, renewable energy).
- Plasma technology (non-thermal): conversion, avoidance of solvents in coatings.
- Electrification of the chemical industry (inductive heating, etc.) to avoid Scope 1 and Scope 2 emissions. Focus on high-temperature processes (e.g., replacing natural gas heating with electrification). What effect does electrification have on full circularity? Use of surplus electricity.
- Electrification is not the sole solution: is there a need for cost-effective CCS/CCU technology for diluted point sources?
- Freed up (extra) fuel gas will have to be put to use.

MOT 4: Energy Innovation

- More efficient heat pumps (can be used at higher temperatures).

- Waste heat (low temperature heat): how to upgrade this?
- How to deal with intermittency (e.g., varying availability of electricity) in the chemical industry (storage of electrical energy (and in which products?) or production of heat if a lot of renewable electricity is available)?
- Research taking into account supply-demand and grid stability
- Interest for on-demand power generation: storage & release technologies, power generation from chemical processes