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Researcher Project for Technological Convergence Related to Enabling Technologies

Financial scheme: Researcher Project

Application deadline: 16 November 2022, 13:00 CET

Relevant thematic areas for this call:
Enabling technologies

Target groups: Research organisations

Funding scale: NOK 12 000 000-15 000 000

Amount of funding presumed available for this call for proposals:
up to NOK 115 000 000

Project duration: 48-72 months

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Important dates

05 Oct 2022: Date call is made active

16 Nov 2022: Application submission deadline

01 Jul 2023: Earliest permitted project start

01 Jul 2024: Latest permitted project start

30 Jun 2030: Latest permitted project completion

Last updates

05 OCT 2022   ○   A new and amended template for project description is added to the call. Be sure to download the latest version of the template. In addition, changes have been made to the call for proposals on the following points: the assessment criteria and the text for the administrative procedures has been published.

Purpose

The objective of the call is to achieve radical new technological development across the enabling technologies. Examples of enabling technologies are biotechnology, ICT and nanotechnology.

A total of up to NOK 115 million is available, distributed between two calls for proposals; the call you are currently reading and the call for [Collaborative Project for Technological Convergence related to Enabling Technologies.](#)

Call for proposals   **Application results**

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About the call for proposals

The UN Sustainable Development Goals and major societal challenges dominate the political agenda, and new technology is expected to contribute solutions. Enabling technologies are key drivers behind change and transformation, and the technological convergence initiative aims to develop groundbreaking technology and radical innovations related to sustainability and societal challenges.

Relevant projects

Funding is available for projects that will lead to radical new technologies based on collaboration between established technological areas in the enabling technologies. Biotechnology, ICT and nanotechnology are typical examples of enabling technologies. The projects' objective must be to find solutions that can be implemented. The projects can be high risk/high gain, meaning there can be a high risk of not fully achieving the project's radical goals if the technological level of novelty is high and the technologies that are developed have a high potential. However, you must describe how you plan to handle various risk elements relating to the implementation of the project in the grant application.

There is uncertainty surrounding the effects of technology development and

innovation. In addition to solving societal challenges, using new technology can also play a part in reinforcing challenges or creating new ones. Both the technological development and the solutions must implement Responsible Research and Innovation (RRI). In the grant application, describe the processes and management structure for project participants' reflection on and discussion of intentional and unintentional applications and the impact of the technology you are developing. We expect you to involve relevant social actors in these discussions.

Challenges relating to health, safety and the environment must be clearly described where relevant.

Read more about how you can incorporate Responsible Research and Innovation in the grant application.

Also see the portfolio plan for Enabling Technologies.

Show that you want to engage in groundbreaking research

We want projects that are ambitious, advance the research front and are capable of radical technological development. We therefore make efforts through our administrative procedure to increase opportunities to identify groundbreaking projects.

Own funds for networks and learning arenas

Projects that are granted funding by the Research Council must be willing to participate in networks and learning arenas across projects. Separate funds will be earmarked for this purpose.

The Norwegian-language call for proposals is the legally binding version.

Contact persons

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Who is eligible to apply?

Only approved Norwegian research organisations may apply. See the list of approved Norwegian research organisations.

Who can participate in the project?

Requirements relating to the Project Owner

The research organisation listed as the Project Owner in the grant application must have approved the submission of the grant application to the Research Council.

Requirements relating to project managers

You must have an approved doctorate or similar qualifications before the date of

the application submission deadline. If you do not have an approved doctorate but are qualified at associate professorship level or have current or previous employment in a position as *forsker 1* (research professor), *forsker 2* (senior researcher) or *seniorforsker* (senior researcher) in the institute sector or a health trust, you are also qualified. You can only be the project manager for one application submitted either under this call or the call "Collaborative Project for Technological Convergence related to Enabling Technologies"; the submission deadline is 16 November 2022 for both calls. Project managers of a Researcher Project for Technological Convergence or a Collaborative Project for Technological Convergence already under way (funding granted in January 2022), cannot be project managers under this call for proposals.

Requirements relating to partners

Only approved Norwegian research organisations (see a list of such organisations under "Who is eligible to apply?" above) and corresponding research organisations in other countries are eligible to be partners and to receive Researcher Project funding.

Other types of organisations, such as companies and other undertakings, may not be project partners in Researcher Projects.

Read more about partners.

Use of subcontractors

As the Project Owner and/or a project partner, you may hire subcontractors to provide services and contribute to individual tasks in the project. You cannot however grant subcontractors rights to the project results. Organisations that are subject to the regulations governing public procurements must select subcontractors in accordance with these regulations. R&D providers cannot be included in the project.

A project participant may not be assigned two different roles in the project. This means that a subcontractor for the project may not have the role of Project Owner or partner in the same project.

What can you seek funding for?

You may apply for funding to cover actual costs necessary to execute the project. The Project Owner is to obtain information about costs from each project partner. These costs are to be entered in the cost plan under the relevant category.

Funding may be granted for the following costs:

- **Payroll and indirect expenses**, related to researcher time (including research fellowship positions) at the research organisations participating in the project. For doctoral and post-doctoral research fellowships, this funding is limited to maximum three person-years.
- **Equipment.** This encompasses operating and depreciation costs for scientific equipment and research infrastructure necessary for the execution of the project.
- **Operating expenses**, which comprise costs for other activities that are necessary to carry out R&D efforts under the project. Procurements from

subcontractors that exceed NOK 100,000 must be specified.

Do not use the item **Procurement of R&D services**.

You will find detailed and important information about [What to enter in the project budget](#) on our website.

If the project includes doctoral and post-doctoral research fellowships and there are concrete plans in place for research stays abroad for the fellowship holders, the costs of such stays may be included in the grant application. The Research Council has also issued a separate call for funding for [Research Stays Abroad for Doctoral and Post-doctoral Fellows](#). The project manager may apply for funding under that call in the course of the project period for research stays abroad for research fellows affiliated to the project.

Scope of funding

The Research Council may provide NOK 12–15 million in funding per project under this call. There are no requirements for own funding, but if our rates for research time in the university and university college sector do not cover all costs associated with a researcher or recruitment position, you must cover this through own funding.

Conditions for funding

The project must start between 1 July 2023 and 1 July 2024. You must apply for funding from the Research Council for the start-up year. The latest permitted completion date for the project is 30 June 2030.

The Research Council will not award funding that constitutes state aid under this call. This means that the funding is only to go to the non-economic activity of the research organisations. We require a clear separation of accounts for the organisation's economic and non-economic activities. Our requirements relating to allocations and disbursement of funding for the first year and any pledges and payments for subsequent years are set out in the General Terms and Conditions for R&D Projects on the information page [What the contract involves](#).

If your project is granted funding, the following must be in place when you revise the application:

- From 2022, all grant recipients that are research organisations or public sector bodies (Project Owners and partners) must have a [Gender Equality Plan (GEP)](#) available on their website. This must be in place when they sign the grant agreement for projects we have awarded funding. The requirement does not apply to the business sector, special interest organisations or the non-governmental sector.
- The Research Council requires full and immediate open access to scientific publications; see [Plan S – open access to publications](#).
- You must prepare a data processing plan for any research data that will be processed in the project. Research data must be made available in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable).
- The Project Owner is responsible for selecting which archiving solution(s) to use for storing research data generated during the project.
- For medical and health-related studies involving human participants, the

Research Council stipulates [special requirements and guidelines for prospective registration of studies and disclosure of results](#).

Relevant thematic areas for this call

Enabling technologies

`TECHNOLOGICAL CONVERGENCE`

Practical information

Requirements for this funding scheme

Applications must be created and submitted via My RCN Web. You may revise and resubmit your grant application form multiple times up to the application submission deadline. We recommend that you submit your application as soon as you have filled in the grant application form and included all mandatory attachments. After the deadline, it is the most recently submitted version of the grant application that will be processed.

The application must meet the following requirements:

- The application and all attachments must be submitted in English.
- All attachments must be uploaded in PDF format.
- All mandatory attachments must be included.
- Requirements relating to the project manager and Project Owner (research organisation) must be satisfied.
- The project must start between 1 July 2023 and 1 July 2024.
- You must apply for funding from the Research Council for the year the project starts.

Applications that do not satisfy the requirements listed above may be rejected.

Mandatory attachments

The designated template found at the end of the call for proposals must be used for all attachments.

- A project description, maximum 15 pages.
- A CV for the project manager, maximum four pages.
- The CVs of key researchers participating in the project, not exceeding four pages each.

Applicants themselves are to decide which project participants are most important and in which cases it will be of significance to the review process to assess these participants' qualifications.

Optional attachment

Applicants are free to enclose a brief description of qualifications or propose up to three referees who are presumed to be qualified to review their grant proposal. The Research Council is not under any obligation to use the proposed referees, but may use them as needed.

All attachments must be submitted together with the grant application. We will not accept attachments submitted after the deadline for applications unless we have requested further information.

We will not assess documents and websites linked to in the application, or other attachments than those specified above.

There is no technical validation of the content of the attachments you upload, so please make sure that you upload the correct file for the selected type of attachment.

Assessment criteria

We assess applications in light of the objectives of the application type in question and on the basis of the following criteria:

Excellence – potential for advancing the state-of-the-art art and creating radical technology development

The extent to which the proposed work is ambitious, novel, and goes beyond the state-of-the-art and leads to radical new technologies based on collaboration between established technological areas in the enabling technologies.
▪ Technological and scientific creativity and originality.
▪ Novelty and boldness of hypotheses or research questions.
▪ Potential for development of new knowledge beyond the current state-of-the-art, including significant theoretical, methodological, experimental or empirical advancement.

Excellence – quality of R&D activities

The quality of the proposed R&D activities
▪ Quality of the research questions, hypotheses and project objectives, and the extent to which they are clearly and adequately specified.
▪ Credibility and appropriateness of the theoretical approach, research design and use of scientific methods. Appropriate consideration of interdisciplinary approaches.
▪ The extent to which appropriate consideration has been given to ethical issues, safety issues and gender dimensions in the research content. The extent to which the use of stakeholder/user knowledge is appropriate and the extent to which Responsible Research and Innovation (RRI) has been incorporated.

Impact

Potential impact of the proposed research
▪ Potential for academic impact:
The extent to which the planned outputs of the project address important present and future technological and scientific challenges.
▪ Potential for societal impact:
The extent to which the planned outputs of the project address UN Sustainable

Development Goals or other important present and/or future societal challenges.
▪ The extent to which the potential impacts are clearly formulated and plausible.

Communication and exploitation
▪ Quality and scope of communication and engagement activities with different target audiences, including relevant stakeholders/users.

Implementation

The quality of the project manager and project group
▪ The extent to which the project manager has relevant expertise and experience, and demonstrated ability to perform high-quality research (as appropriate to the career stage).
▪ The degree of complementarity of the participants and the extent to which the project group has the necessary expertise needed to undertake the research effectively.

The quality of the project organisation and management
▪ Effectiveness of the project organisation, including the extent to which resources assigned to work packages are aligned with project objectives and deliverables.
▪ Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role.
▪ Appropriateness of the proposed management structures and governance.

Administrative procedures

We will assess the version of your grant application that you submit and will not take into account how an identical or almost identical application has been assessed in the past.

Please note that the evaluation process used for this call deviates from the process that was used to review applications for Researcher Projects submitted to the deadline 2 February 2022.

Preliminary administrative review

Once we have received the grant applications, the Research Council will conduct a preliminary administrative review to ensure that they satisfy all the stipulated formal requirements. Applications that do not meet the formal requirements will be rejected.

The applications will go through a two-step evaluation process

During the first step of the process, applications will be assessed solely on the criterium *Excellence – potential for advancing the state-of-the-art and creating radical technology development*. Referees participating in this step will combined have broad state-of-the-art competence within enabling technologies but may not have specialist competence in relation to each application. During this step, the referee panels will identify applications with potential to advance the research front and deliver radical new technologies. During this step we will ensure that only applications that meet a minimum requirement based on the objective of the call, will move to the next step and be subject to further assessment.

The threshold mark for this criterium is set to 5. This means that applications that receive the mark 4 or lower for this criterium will not be subject to further assessment and will not be eligible for funding.

During the second step of the evaluation process, the applications that are above the threshold mark will be assigned to referee panels based on the research content of the applications. During this step, the experts will evaluate the applications on the three criteria *Excellence - quality of R&D activities*, *Impact* and *Implementation*.

The peer review process described above will be used for all applications submitted to this call and applications submitted to the call *Collaborative Project for Technological Convergence related to Enabling Technologies*. Applications submitted to these two calls will all compete for the total budget of NOK 115 million.

Prioritising applications for grants

When considering which projects should be funded, the mark for the criterium *Excellence – potential for advancing the state-of-the-art and creating radical technology development* will be given most weight. The three remaining criteria will be weighted equally. We will use so-called randomised selection to distinguish between applications in intervals where the applications are considered to have the same level of quality. Applications with women project managers will be prioritised among applications where randomised selection is performed.

Please note that the amount available for funding in the call is an estimate, and the final amount granted may deviate somewhat from this estimate. We will take into account any changes in the financial or scientific framework set by the ministries.

The plan is for the portfolio board for Enabling Technologies to take their final funding decision in a meeting in June 2023. The application results will be published on our website after the meeting.

Download templates

📄 Template for Project Description - Researcher Project for Technological Convergence.docx ⤓

📄 Template for CV researchers.docx ⤓

★ MANDATORY ATTACHMENT

Download all templates ⤓

About the results of the application assessment process

Total amount sought		1 804 700 000
Amount awarded		227 707 000
Total number of applications		123
Number of approved applications		13

Approved applications

Project no. ▾	Organization ▾	Project title ▾	Subject ▾	Sought ▾	Published ▾
342255	NORGES TEKNISK-NATURVITENS KAPELIGE UNIVERSITET	Enabling natural photonics through genetic manipulation of diatoms	Muliggjør ende teknologi er	14 999 000	16.06.2023
342167	UNIVERSITETE T I AGDER	SecureIoTM: Ultra-low-energy IoT Intrusion Detection Systems using Logic-based Tsetlin Machines	Muliggjør ende teknologi er	15 000 000	16.06.2023
342109	NORGES TEKNISK-NATURVITENS KAPELIGE UNIVERSITET	Self-healing lithium-ion batteries enabled by fiber/nano optic sensing and convergent data-driven analytics	Muliggjør ende teknologi er	14 991 000	16.06.2023
341989	UNIVERSITETE T I OSLO	LUBRIBOT: A sustainable soft robot facilitating non-contact adhesion and directed locomotion by vibration induced lubrication flow	Muliggjør ende teknologi er	14 999 000	16.06.2023

Approved applications

Project no. ▾	Organization ▾	Project title ▾	Subject ▾	Sought ▾	Published ▾
342132	HØGSKOLEN I ØSTFOLD FREDRIKSTAD	Tunable and Durable Seawater Adhesives	Muliggjørende teknologier	14 295 000	16.06.2023
342073	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET	Super Selective Separators for Battery Applications	Muliggjørende teknologier	14 999 000	16.06.2023
331821	NTNU	Spin-based Intermittent Computer	Muliggjørende teknologier	19 134 000	4.5.2023
331736	STIFTINGA VESTLANDSFORSKING	Violence-inducing Behaviour Prevention in Social-Cyber Space of Local Communities	Muliggjørende teknologier	19 319 000	4.5.2023
332004	Institutt for medisinske basalfag-UiO	Wireless Neuroprobe-On-A-Chip	Muliggjørende teknologier	20 000 000	4.5.2023
331912	Norsk senter for molekylærmedisin (NCMM)-UiO	CRISPR-Cas9 corrected T cells for personalized therapy	Muliggjørende teknologier	19 996 000	
331967	Kjemisk institutt-UiB	Integrated Catalyst Discovery for Biotechnology	Muliggjørende teknologier	19 958 000	4.5.2023
331890	UNIVERSITETET I OSLO	AB-AG-DESIGN: Rule-guided antibody and antigen design	Muliggjørende teknologier	20 000 000	4.5.2023
331725	UNIVERSITETET I BERGEN	New technologies for target discovery in neuropsychiatric disorders	Muliggjørende teknologier	20 000 000	4.5.2023

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