novo nordisk
foundation
Benefitting people and society

Guidelines for applicants

CHALLENGE PROGRAMME 2027

HARNESSING NOVEL EARTH-ABUNDANT MATERIALS FOR SUSTAINABLE TECHNOLOGIES

Facts about the call

Amount available per grant:
DKK 30 - 75 million (ca. EUR 4-10 million)

Total amount available for granting:
DKK 150 million (ca. EUR 20 million)

Call opens:
22 April 2026

Call closes:
Stage 1: 7 October 2026 14:00 (CEST)
Stage 2: 10 February 2027 14:00 (CET)

Applicant notification:
Stage 1: December 2026
Stage 2: June 2027

Earliest start date:
1 August 2027

Latest start date:
31 July 2028

Review panel:
Applications will be evaluated by an independent, international panel of scientific experts.

Contact e-mail: challenge@novo.dk
Please include the name of the call “Harnessing novel Earth-abundant materials for sustainable technologies” in the subject line.

All Grant Recipients must comply with the 'General Terms and Conditions' for grants from the Novo Nordisk Foundation (the Foundation).

The Foundation will treat all applicant and application information confidentially. Read more about how the Foundation processes personal data under 'privacy & security' in the online application system, NORMA. See how to access NORMA in section 2 of these guidelines.

You can find more information about the Foundation's application and granting process at the NORMA Help Centre. Detailed information about the different parts of the application is available in NORMA.

1 CHALLENGE PROGRAMME 2026 – Harnessing novel Earth-abundant materials for sustainable technologies

1.1 Purpose

The Challenge Programme aims to contribute substantially to the development of Danish and European research ecosystems within research areas of strategic priority to the Novo Nordisk Foundation. The goal is to develop innovative solutions to major scientific challenges, supporting leading researchers to form a consortium united by a clear vision and mission.

The Programme provides funding to enable scientific depth and focus and facilitate synergy between the research partners.

The grants awarded within the Challenge Programme will broadly fit within the Novo Nordisk Foundation Strategy.

1.2 Areas of support

Earth-abundant materials are elements and compounds that occur widely in the Earth's crust and may provide sustainable alternatives to scarce or hard-to-source resources. Enhanced utilisation of earth-abundant materials in modern technologies is important for reducing environmental footprint and for driving responsible and economical technological progress

The challenge is to develop novel materials for sustainable technologies that exploit the properties of Earth-abundant elements, aiming to match or exceed the performance of those that rely on rare or critical resources.

The Challenge calls for interdisciplinary collaboration between materials science, chemistry, engineering, data-science, and physics. The research should target fundamental material discovery and synthesis of Earth-abundant materials with unique properties for sustainable technologies or development of novel applications based on scalable and abundant materials. The research must be interdisciplinary and fall within technology readiness levels (TRL) 1-3, with a clear focus on fundamental material discovery, synthesis, and characterisation of Earth-abundant materials. The Novo Nordisk Foundation encourages high-risk approaches and strongly values the integration of experimental methods with modelling and a machine learning or data science component. However, proposals limited to theoretical approaches and modelling will not be prioritised. Also, projects that focus primarily on materials recovery are considered out of scope. Techno-economic analysis and environmental sustainability impact assessment cannot be the primary focus of a proposal, but it may be integrated if relevant, in particular as it pertains to evaluating the perspectives for societal applicability and commercial potential. The programme does not support prototype development or commercialisation.

Projects focused primarily on hydrogen production, building materials, perovskites, and biomaterials are considered out of scope for the call.

Supported research may include but is not limited to:

- Study novel earth-abundant materials for quantum technologies
- Utilise earth-abundant materials for in novel energy storage systems across relevant timescales.
- Discover and test cost-effective and sustainable materials for catalytic processes.
- Explore the use of Earth-abundant materials in semiconductors and other electronic components, promoting sustainable processes and alternatives to traditional materials.

1.3 Eligibility

The Challenge Programme supports collaboration between leading scientific experts to form a consortium of 2-4 research groups (main applicant plus 1-3 co-applicants).

1. The main applicant must be an independent tenured/tenure-track researcher with their own research group, **employed at a European (European Union, Schengen Area plus United Kingdom)** university, hospital, or non-profit research organisation, which will be the host institution and will be responsible for administration of the grant.
2. The main applicant must be employed at the host institution with at least a 75% commitment and must be guaranteed their own salary for the entire project period.
3. Co-applicant institutions may be located anywhere globally.
4. At least one applicant (either main- or co-applicant) must be at least 75% employed and have their research group at a Danish university, hospital, or non-profit research organisation at the time of submission.

Industry collaboration is allowed, but industrial partners cannot receive funding (see section 3.3)

General rules for applications:

a. Applicants are only permitted to submit one proposal as main applicant across all four Challenge Programme 2027 calls. If a proposal is submitted as main applicant, the applicant cannot at the same time be a co-applicant on a different proposal.
b. A named co-applicant can only be included in a maximum of two applications across all four Challenge Programme 2027 calls.
c. Current and previous recipients of Novo Nordisk Foundation research grants are eligible to apply for a Challenge Programme grant.
d. Recipients of an active Challenge Programme grant may apply for a new Challenge Programme grant during the final year of the ongoing grant; however, a new Challenge grant cannot be activated until the existing grant is no longer active.
e. NNF does not allow double funding of project-specific expenses. If an applicant has applied for or has received funding for any part of the proposed project, it must be detailed in the budget of the application. If the applicant receives additional funding for the project, in part or in whole, following submission of the NNF application, NNF must be contacted immediately.

f. Please refer to our general terms and conditions (http://www.novonordiskfonden.dk/en/content/conditions-grants) for further information for applying and receiving grants from NNF.

1.4 Funding

A total budget of up to DKK 150 million (ca. EUR 20 million) is available for grants of DKK 30 - 75 million (ca. EUR 4 - 10 million) for projects of 6 years duration. Applicants may apply for funding for the types of expenses listed in Section 3.5.

1.5 Language

The application and all additional materials must be submitted in English.

1.6 Application process

There are 2 stages to the application process. **Stage 1** consists of an expression of interest (up to 10,000 characters) with a preliminary budget. After the initial evaluation, shortlisted applicants will be invited to submit a proposal in **Stage 2**, consisting of a comprehensive application with a detailed project proposal (up to 30,000 characters) along with a detailed budget. See Section 3.4 for detailed instructions on content.

As part of the **Stage 2** evaluation, the applicants will be invited to present and discuss their proposed research projects with the review panel in an online meeting.

The application must be completed and submitted using NNF's online application and grant management system, NORMA: https://norma.novonordiskfonden.dk

When all applications have been assessed, applicants will be notified about whether they have been awarded a grant. The notification e-mail will be sent from norma-noreply@novo.dk to the e-mail address used when creating a profile in NORMA.

PLEASE NOTE: The Foundation does not provide feedback on declined applications.

1.7 Assessment criteria

Applications will be evaluated by an independent, international panel of scientific experts. The selection of the successful Challenge Programme applicants will be primarily based on the following criteria:

1. Scientific quality and impact
2. Scientific approach
3. Scientific environment and collaboration

4. Investigators' track record

The financial situation and prior obligations of the applicants, in case it can compromise the dedication to, and quality of, the proposed work may be taken into consideration.

1.8 Dialogue Meetings and Thematic Symposium

To follow the progress of the individual Challenge Programme themes, the Foundation will hold dialogue meetings with grant recipients every second year. Grant recipients will receive information regarding the timeline and format of these meetings.

To facilitate network building and knowledge-sharing within each theme, the grant recipients within each theme are encouraged, to co-ordinate a thematic symposium during the grant period, in year 3 or year 4.

2 The application and grant management system NORMA

2.1 User Registration

The Foundation uses the application and grant management system NORMA: https://norma.novonordiskfonden.dk

If you do not have a user profile in NORMA, you can create one by clicking **Register** on the login page. The main applicant should only have one user profile. Please use your work e-mail address for registration.

The registered user who submits an application will be legally responsible for the truthfulness of the content of the application.

You can find guidance on how to create and submit an application at: NORMA Help Centre.

If you experience technical problems and cannot find a solution in the NORMA Help Centre, please contact NORMA Support: norma-support@novo.dk.

2.2 Creating an application

Initiate an application by finding the call you wish to apply for in the OPEN CALLS section on the Applicant Portal in NORMA. Use the search filters at the top of the section to filter by e.g., overall funding area, and initiate an application by clicking APPLY NOW next to the relevant call.

Applications can be edited up until the deadline. A draft application can be saved by clicking SAVE DRAFT and may be cancelled at any time up until the deadline by clicking CANCEL.

An application is not submitted to NNF until an applicant has clicked SUBMIT and has received confirmation that the application has been successfully submitted.

You can review the application at any time by reopening from within NORMA. Opening the application will also allow you to download the application in its entirety as a PDF. Make sure the PDF is readable and formatted appropriately before submitting your application.

You can use the VALIDATE button at any time to check which required fields are incomplete in your application.

2.3 Text and Illustrations

For all applications, the individual fields must be completed in accordance with these guidelines and the instructions supplied in NORMA.

TEXT FIELDS
Text from Microsoft Word or comparable word processors can be copied and pasted into most text fields of the application. It is, however, important to check that formatting, special characters, and symbols have not been converted or lost in the text fields after copying and pasting. If the formatting looks wrong in NORMA or in the PDF, try changing all text to Normal using the FORMAT dropdown. It is the responsibility of the applicant to ensure that the PDF looks correct before submitting.

The available options for formatting text are at the top of the text fields. Some shorter text fields do not have the option to use rich text formatting.

ILLUSTRATIONS
Illustrations such as figures, charts, tables, images, etc. related to the project description can be uploaded under PROPOSAL. A maximum of four illustrations are allowed. The illustrations will be placed on a separate page in the application PDF but can be referenced throughout the project proposal as needed. For readability, please name the files numerically by the order in which they are referenced.

The following file formats for illustrations are accepted in the system: JPG, JPEG, PNG and BMP. The maximum accepted size for each illustration is 50 MB and 1050*1550 pixels.

2.4 Submitting the Application

The application in its entirety must be submitted electronically via the application system by clicking SUBMIT. It is not possible to submit an application or any part of it by standard mail or e-mail. Any material submitted outside the application system will not be included in the evaluation and will not be returned.
An application cannot be submitted unless all the required fields have been completed.

All applicants must read and accept NNF's Standards for Good Research Practice before submitting the application. Further, the applicant must declare that the information provided in the application is true and accurate.

3 Application content

This section provides guidelines on the content required in the sections of the online application form for this call. Detailed information about the different parts of the application is available in NORMA.

3.1 Applicant

The Applicant tab pertains to information about all those involved in an application, meaning the main applicant and the co-applicants.

3.2 Co-applicant(s)

There must be 1-3 co-applicants as part of the application.
Co-applicants are expected to actively participate in the project activities and should, consequently, be allocated a share of the grant. Clearly describe the role of all co-applicants in the project description and respective budget allocations. Co-applicants must be invited through NORMA and subsequently enter their details in the system. Please follow the instructions in NORMA on how to invite co-applicants to your application.

Please note that co-applicants can read, edit and upload information into the application portal, **but only the main applicant is able to submit the final application.**

Inviting co-applicants can be time-consuming.
Please invite any co-applicant(s) as soon as possible and well in advance of the submission deadline.

3.3 Institution

Please provide information about the host institution where the grant will be administered. This institution is where the main applicant will be employed during the grant period, and the institution that will ultimately be responsible for administering and allocating the grant, including budgeting, financial reporting and staff supported by the grant.

It can take up to five working days to register a new administrating institution in NORMA.
The application cannot be submitted before the institution has been registered.

3.4 Proposal

Describe the project using the fields in the **Proposal** tab.

PROJECT TITLE
Please provide a title for the project (maximum 150 characters, including spaces).

BRIEF PROJECT DESCRIPTION
Please provide a brief stand-alone summary of the project describing its purpose, target group and activities (maximum 2000 characters, including spaces, line breaks and special characters).

PROJECT DESCRIPTION
Please note that the application should address the assessment criteria listed in subsection 1.7.

The Stage 1 project description is an expression of interest (limited to 10,000 characters including spaces, line breaks and special characters), which should be structured around the following sections:

- The proposed research, including its relevance for the theme and clearly formulated hypotheses to be addressed.
- The project's originality, ambition, and expected outcome.
- Details on the scientific approach and methodologies.
- An outline of the research team:
  - The roles, how they constitute the needed expertise, and access to required facilities and equipment.
  - Leadership plan detailing group collaboration and its suitability for addressing the proposed challenge.
- High-level timeline with key deliverables and milestones (uploaded as Illustrations, see Section 2.3)

The Stage 2 project description:
If invited for a Stage 2 submission, a new tab called 'Proposal' will open in NORMA. Provide a detailed project proposal of up to 30,000 characters including spaces, line breaks and special characters that includes the following sections:

- A comprehensive research proposal that includes purpose, background, the significance of the project and the expected scientific and/or broader societal impact.
- The project setup, experimental design, and feasibility of the approach including details on methodology, work streams and connection to the overall hypothesis, and ethical permissions.
- A description of the involved research groups, roles and expertise, and access to facilities and equipment.
- A leadership plan, including the proposed governance and organisational structure of the project.
- Plans for establishing a learning environment to foster the next generation of researchers.
- A timeline with key deliverables and milestones (uploaded as Illustrations).

Abbreviations should be defined at the first use.

ILLUSTRATION UPLOADS
A maximum of four illustrations can be uploaded here. The following file formats for illustrations are accepted in the system: JPG, JPEG, PNG and BMP. The maximum accepted size for each illustration is 50 MB and 1050*1550 pixels.

LITERATURE REFERENCES
Please provide the reference information for the literature cited in the project description (maximum 8,000 characters, including spaces, line breaks and special characters).
If not applicable, please fill in N/A.

LAY PROJECT DESCRIPTION
Please provide a brief summary in lay language. If the application is awarded a grant, the text may be used for publication (maximum 1,000 characters, including spaces, line breaks and special characters).

3.5 Budget

A detailed budget is **not** required for the **Stage 1** application. However, please indicate the approximate total requested amount, the total additional contributions, and the total project cost in the Norma system under additional contributions.

A detailed budget is required for the **Stage 2** application. This budget should clearly indicate the co-applicants' share of the total budget.
Only budget information submitted via the **Budget** tab will be considered in the review process. Any additional budget information attached under **Appendices** (or any other tabs) will not be considered.

CREATE BUDGET
Before you can fill in the budget template, you must enter the start and end dates for the grant. This will determine the number of years included in the budget template. The budget should be entered in project years, not calendar years.

ELIGIBLE BUDGET COSTS
Applicants may apply for funding for the following types of expenses when directly related to the project:

SALARY

- **Salary** for technicians, analysts, and other technical assistance, including laboratory administrators.
- **Salary** for postdoctoral researchers.
- **Salary** for Ph.D. students.
- **Salary** for employees or project consultants at all staffing levels, including project management; however, main applicant and co-applicants cannot receive funding for their own salary.

Full-time equivalents (FTE). For each salary entry, please specify the FTE in years within the designated FTE field. This will indicate the proportion of a full-time position that the project funding will support for each year of the grant period. One full-time employee for one year equals 1.0 FTE.

OPERATION

- **Operating costs:** Direct expenses for developing, implementing, and operating the project, including materials, consumables, animals, services, etc., directly related to the project.
- **Operating cost related to the purchase of high-end compute power** for use in the research project.
- **Equipment:** Provided it is essential for the proposed project and its use after completion of the project can be clearly justified.
- **Infrastructure** required for the project. Infrastructure funded by the grant must be located at the host institution both during and after the project period. Free/excess capacity for the infrastructure must be made available to the wider research community. Infrastructure cannot comprise most requested funds.
- **Subcontractor cost.**
- **Bench fee:** Support for individual researchers for the coverage of direct expenses needed to conduct the research project applied for must be specified. Bench fee is calculated per academic employee actively working on the project and eligible to apply for salary. It may only be used for direct expenses related to the research project which cannot be included within another individual budget category. Bench fee may account for a maximum of DKK 8,000 / ca. EUR 1,071 per month per FTE. The budget must specify the expenses covered by the bench fee, which may include:
    - common or shared laboratory expenses and consumables
    - laboratory utilities (electricity, gas, water)
    - maintenance of essential equipment
    - service contracts
    - technical and IT support.

PLEASE NOTE that bench fees cannot cover rent, administrative support, representation, or social contributions. A valid bench fee policy in line with the

Foundation's requirements must be available at the time of application, and this official documentation from the administrating/co-applicant's institution must be provided upon request.

DISSEMINATION, TRAINING, EDUCATION

- **Collaborative activities** encompass expenses directly related to the project, such as workshops, meetings, exchanges, seminars, and other efforts aimed at fostering productive collaboration among programme partners; expenses for conducting experiments in external laboratories for a limited duration; expenses associated with organising a Challenge symposium. The budget limit for organising a Challenge symposium is DKK 250,000.
- **Travel expenses** in relation to the project, e.g. conference and workshop participation and presentation of research results derived from the project.
- **Publication** of results originating from the project.
- **Communication** and outreach in the form of conferences, books, articles and other dissemination directly related to the project.
- **Tuition fee** for PhD students of up to DKK 80,000 / ca. EUR 10,713 per year. Tuition fee must be specified in the budget.

ADMINISTRATION

- **Direct administrative expenses** (up to 5% of the overall budget and included in the budget) to cover administrative expenses directly related to the project:
    - can cover expenses such as accounting, payment of salaries, purchasing, hiring, as well as auditing and financial reporting on the project.
    - cannot cover administrative expenses that are not directly related to the project.
    - is not automatically included in the grant and must be stated/applied for in the application budget but should not be specified in detail.
    - can via the host institution be shared between the institutions of the main- and co-applicant(s).

Please make sure it is clear which of the applicants each expense is dedicated to.

Please provide a high-level overview of the budget in the SUPPLEMENTARY INFORMATION field, explaining the distribution of funds among the co-applicants, collaborators and activities.
A collaborator in the project is an external institution, NGO or NPO which performs an assignment for the project and is subcontracted by the main applicant or one of the co-applicants.

The Foundation will not award funding for:

- Salary for the main- and co-applicants
- Commercial activities
- Overhead/indirect costs (such as rent, electricity, water and maintenance)
- Double funding of projects:
  - If the applicant has received funding for the proposed project from other sources, in part or in full, this must be accounted for in the budget, as no budgetary overlaps are allowed
  - If an identical or overlapping project proposal has been submitted to other funding institutions than the Foundation, it must be noted in the application
  - If the applicant receives funding for the project, or parts of the project, from other sources following submission of the application to the Foundation, the Foundation must be informed immediately.

3.6 Appendices

No uploads are required for Stage 1 application.

Mandatory upload for Stage 2 application:

Hosting letter in PDF format.
A hosting letter from the administrating institution confirming that, if granted:

- The administrating institution will host the project and be the Grant Recipient for the whole project period.
- The applicant is an established investigator with their own line of research, own research group and will be employed with full salary coverage for the duration of the project at the administrating institution.
- The hosting letter should be signed by the Head of Department. If the main applicant is Head of Department or otherwise part of the management, the hosting letter must be signed by someone from the management level above the main applicant.

Please *do not attach* other appendices such as recommendations, offers on equipment, etc. Appendices other than those specified here are not permitted and will not be included in the evaluation. NORMA automatically places uploads at the end of the application.

About the Novo Nordisk Foundation

The Novo Nordisk Foundation is an independent Danish enterprise foundation. Characterised as a non-profit organisation, it supports philanthropic purposes using funds deriving from its ownership of and investment in companies and other financial assets.

We support a wide range of projects and initiatives that help to promote human health and the sustainability of society and the planet.