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Emerging Technology Solutions Stage 1 2023

A call within the program Technology areas, within the area Emerging innovations.

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Revisions

Date	Change
2023-04-14	Correct links in document
2023-05-16	Clarification regarding project coordinator

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1 Summary of the Call

The purpose of this initiative is to finance innovation projects at an early technical stage, where other investors in Sweden today have not yet invested. These projects will aim to achieve proof-of-concept in a first stage on the way to innovative emerging technology solutions.

Such solutions should be able to enable new future system solutions in one or more of all sectors such as health, public sector, prosperity, housing and real estate, industry, business and business, small and medium-sized enterprises, trade, travel, skills and talent, digital experiences and mobility.

Within this call emerging technology solutions mean, functional solutions made possible by deeptech. Here, “deeptech” means pioneering technology that requires intensive research and development with large time and capital requirements to go from idea to market application¹.

By “functional solutions”, we understand projects that aim to use deeptech to enable future functions that solve important tasks in systems and ecosystems. Most interesting are emerging technology solutions that enable new types of systems with potential for utilization in several different industries and sectors.

The following dates apply to the call:

Please note that the dates are preliminary. For up-to-date information see www.vinnova.se.

Opening date	2023-03-01
Last day to apply	2023-05-30, at 14:00 (2:00 pm)
Last decision date	2023-09-14
Project start no earlier than	2023-09-15
Project start no later than	2023-09-22

Contact person for the call:

Ulf Öhlander, call manager
08-473 3008
ulf.ohlander@vinnova.se

Jonas Tranell, call manager
08-473 3073
jonas.tranell@vinnova.se

¹ [The conditions for deeptech in Sweden | Vinnova](#)

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Administrative matters:

Jenny Johansson, administrator
08-473 30 13
jenny.johansson@vinnova.se

Vinnova's IT support:

Technical questions about Vinnova's e-services
Phone: 08-473 32 99
helpdesk@vinnova.se

Current information about the call and link to Vinnova's e-service for applications can be found at www.vinnova.se.

2 What do we want to achieve with this initiative?

This call aims to stimulate emerging technology solutions to contribute to increased future national resilience regarding deeptech. The initiative also creates opportunity to contribute nationally in terms of skills supply, branding, entrepreneurship and industrial renewal.

We are referring here to groundbreaking research-intensive technology that today lacks both national venture capital and global commercial use. The technology has the potential to generally enable future systems in several industries and applications in five to ten years' time.

Therefore, we are launching this effort, to take technology research to proof-of-concept, via technical work as well as in workshops. This is to enable continued validation and commercialization.

We aim for Sweden by 2032-2033 to have new technology solutions in leading systems and an improved national ability to deliver benefits from technology research. This may include materials research, biotechnology research, hardware, electronics or research-intensive algorithms.

Examples of deeptech can be different types of quantum technology, visionary eXtended Reality (XR), general AI (AGI), pseudomorphic hardware, synthetic biology, nanorobotics, visionary photonics, etc. However, we do not exclude other types of deeptech that are not listed here.

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This initiative will support efforts to bring research-intensive technologies with unique properties, closer to market-leading and enabling innovations for increased national resilience. It can be resilience considering as well technical solutions as the systems that said technical solutions enable.

Here, “resilience” means the ability to meet existing and future external disruptions and shocks that can affect for example skills, environment, geopolitics, energy supply, finance, equipment, raw materials, supply chains, distribution, logistics, customer markets and partners.

We are looking for projects with technology solutions that are in early technological maturity. At the time of application, the technology solutions should be maximum at Technological Readiness Level 2 (TRL2)², which means that the technology concept is formulated. We expect the Stage 1-projects to be completed in June 2024, i.e. approximately 8 months after the start of the project. By the end of the project, the projects are expected to have achieved at least the TRL3 "experimental proof-of-concept" and further to have developed plans for subsequent steps to create national benefits and to attract follow-up funding from private capital and/or the EU.

Granted projects will, in collaboration with coaches, refine the application's hypothesis of resilience and define goals that can be evaluated going forward. During the fall of 2023 and spring of 2024 Vinnova intends to arrange workshops with the aim of increasing the likelihood that funded projects will be able to contribute to national utilization and resilience regarding deeptech.

In 2024, we intend to open the next call, i.e. Stage 2. The Stage 2 call is planned to be open also for applications that have not been granted in Stage 1. Stage 1-projects can apply to Stage 2 but are not guaranteed funding in Stage 2. Stage 1-projects that are granted funding in Stage 2 are expected to have final report of Stage 1 submitted and approved by Vinnova before the start of the project in Stage 2.

In stage 2, Vinnova plans to finance a fewer number but larger projects with a project length of about two years and with the expected two or more project partners. The stage 2 projects should also be prepared to participate in workshops with arrangements that Vinnova decides on.

Projects granted in Stage 2 are expected to be completed during the fall of 2026. These projects are expected at the end of the Stage 2 to have achieved at least the TRL4 “technology validated in lab”, and we also hope that some granted projects

² [H2020-WP1415-ANNEX-G-trl_en.pdf \(europa.eu\)](https://ec.europa.eu/euro-iss/annexes/2020/wp1415-annex-g-trl_en.pdf)

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may then have achieved the TRL5-6, “technology validated in relevant environment”, and that projects have secured follow-on financing for subsequent commercialization from private capital and/or the EU.

The purpose of this combination in two stages of initiatives from Vinnova is to contribute to Sweden to have commercial solutions from emerging technologies by 2028. Further that by 2032, Sweden has industrialized such solutions in leading systems and in addition to have improved its own ability in innovation methodology and skills supply. Emerging technology solutions requiring clinical trials are expected to be later introduced to the market.

We are aware that the above time indications, for annual TRL levels and commercial targets, will constitute a hypothesis in both the application and its assessment. Such hypotheses will be exposed to the complexity of reality to alter the conditions of the individual projects and hypotheses need be revised.

Vinnova is tasked with promoting sustainable growth and societal development. Through Agenda 2030, the countries of the world have reached a global agreement and understanding of what characterizes sustainable development. Through our efforts, we contribute to the global commitment to achieve the goals.³

Within Agenda 2030, Vinnova has specifically pointed out *climate* and *gender equality* as two central sustainability perspectives to which our funded initiatives should contribute positively. Projects funded by Vinnova are thus expected to pay special attention to the climate and gender equality aspects.

One aspect that Vinnova follows up and assesses is whether both women and men in an equal way take part in the grant, participate in and have influence over the project.

Another aspect is to analyze and decide whether there are gender and / or gender aspects that are relevant to the project's problem area, solutions and utilization⁴. This question is mandatory to answer for all applicants and can be found under the heading "Project tasks". In this call, the question is the basis for assessment under the potential criterion.

Results from research and innovation that are to be made freely available provide increased opportunities for more people to contribute to solutions to societal

³ See also Our work to contribute to the goals of Agenda 2030: [Agenda 2030 - the global sustainability goals as a driving force for innovation | Vinnova](#)

⁴ Read more about what our work for equal innovation means for you who apply for grants from us: [Equal funding of innovations | Vinnova](#)

challenges. The call will contribute to more results being made freely available to everyone and scientific publication will take place with open access.

3 Who is the call aimed at?

This call is aimed at organizations with researchers and/or technology entrepreneurs working with research-intensive technology, such as universities, research institutes and/or research-intensive startups.

4 What do we fund?

4.1 Activities for which funding can be applied for

In this effort, we fund such activities in research and industrial research that are needed to develop a proof-of-concept for the technology, as well as activities to participate in workshops.

4.2 Eligible costs

Our funding is done through grants. Grants to organizations carrying out economic activities are subject to state aid rules⁵. The rules govern, among other things, the types of costs and the proportion of them that may be covered by grants.

Eligible costs are activities in research and industrial research that are needed to develop a proof-of-concept and also for activities to participate in workshops organized by Vinnova. For a detailed description of eligible costs, see point 4 of Vinnova's instructions to eligible costs.⁶

5 How much financing do we contribute?

In the call “Emerging Technology Solutions Stage 1 2023” Vinnova finances up to SEK 1 000 000 per project partner with up to 100% funding rate.

⁵ Read more about state aid on our website: [Rules for funding | State support for economic activities | Vinnova](#). There you will also find our general terms and conditions for contributions and Instructions to Eligible costs: [Vinnova's general terms and conditions for funding | Vinnova](#)
⁶ [Microsoft Word - Eligibility Costs Guide -January 1, 2019.docx 2020 Update 200206 \(002\) \(vinnova.se\)](#)

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We can provide support according to article 22 and/or article 25 in the European Commission's Regulation (EU) no 651/2014 (GBER), or according to the regulation on minor support (EU no. 1407/2013), or as 'non-governmental aid'.

6 Prerequisites for assessment

We will only assess applications that meet the following formal requirements:

1. The project coordinator of the application must be the legal entity at whose place of operation the project in question mainly will be carried out
2. All parties shall be legal entities
3. The application shall be drafted in accordance with the guidelines described in section 9

Foreign organizations with Swedish organization number and with branch/establishment in Sweden can be a party to the project but not a direct beneficiary of Vinnova's funds.

7 Assessment of applications received

7.1 What do we evaluate?

Decisions on grants will be based on an overall assessment of potential, actors and feasibility using the following criteria.

Potential

Applications with credibility and potential in described early, initial hypotheses of the following:

- *Thematic fit*: How well the innovation themes of the application are in line with the guidelines and objectives described in Section 2
- *Innovation*: That the proposed technology solution is innovative
- *Technology superiority*: Why and how the proposed technology solution will be functionally superior to other solutions from an upcoming customer perspective
- *Resilient deeptech*: How credible the application describes a hypothesis for future national ability to have control over solutions with the application's technology and how the technology can be provisioned with national resilience against disruption and shocks in e.g geopolitics and value chains

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- *Technology for resilient systems:* How credible and clear the application describes a hypothesis for how the applications intended technology solution would enable a future generation of systems in industry and society for improved national resilience
- *Paradigm shift:* Why and how the proposed project can constitute a paradigm shift with this technology, and if there is potential for applications across multiple industries
- *Gender equality:* The projects potential to contribute to increased gender equality. (Note that assessment should be made based on the applicant's answer to the mandatory question under "Project tasks")
- *Agenda 2030:* The project's potential to contribute positively to the global goals in Agenda 2030 and minimize the negative effects.

Actors

- *Team ability to deliver:* How project participants possess documented and demonstrated competencies in technology, solutions, entrepreneurship and upcoming business and application area(s). For beneficiary project partners where 100% funding rate is not eligible by state-aid-rules: financial ability of each such project partner to co-finance their respective costs
- *Project leader's competence:* How the applications project manager has a documented and demonstrated ability to project manage technology projects towards project goals of proof-of-concept and plan for follow-on financing, and preferably also future project Stage 2 to manage multidisciplinary competencies (technology, entrepreneurship, market, business)
- *Equal team:* How well the team (key people) is composed: Gender distribution and power distribution and influence between women and men. Imbalances need to be explained credibly and specifically.

Feasibility

- *Stated interest in mission-oriented approach:* Readiness and self-expressed intent, curiosity in and interest for to participate in Vinnova's workshops, and to be coached at these workshops, to work with forecasting ten years ahead and the back-casting to the present, with deeptech at the center of a system perspective. In addition, for system perspective and utilization, readiness to invite actors who are not researchers or technical experts, further willing and interest in dialogue with business coaches.
- *Clear and credible project plan with budget:* The credibility and effectiveness of the project plan for the implementation of the project within the set time,

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within budget and with expected results. Project methodology, control, organization and involvement of project partners and other relevant actors, including coaches, investors, industry partners and users. A project plan that shows all parties' activities, commitment, participation and mutual communication.

- *Utilization of project results:* A timed hypothesis how the project results will be used in subsequent commercialization, that is, a hypothesis about how and which actor or actors will commercialize the project results for external customers or for internal deployment.
- *Gender and gender aspects:* Describe how gender and gender aspects have been integrated into the project plan
- *Risk management:* Risk for the project = probability x consequence, for both project implementation and pre- and subsequent commercial exploitation
- *Sustainability:* How well relevant sustainability perspectives⁷ have been integrated into the project plan; socially, economically and environmentally.

7.2 How do we evaluate?

Applications that meet all formal requirements are assessed by a specially designated assessment team, consisting of technology and business experts. All assessors are appointed by Vinnova.

Based on an overall recommendation from the assessors, Vinnova then makes the formal decision to reject or grant applications and communicates this decision to all applicants. The assessment of the applications is made in competition between the applications received.

8 Decisions and conditions

8.1 About our decisions

How much each party to the project is awarded in grants is stated in the decision. We can provide support according to article 22 and/or article 25 in the European Commission's Regulation (EU) no. 651/2014 (GBER), or according to the regulation on minor support (EU no. 1407/2013), or as 'non-governmental aid'.

⁷ Relevant sustainability perspectives refer to Agenda 2030 with a special focus on climate and gender equality.

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The basis for aid is set out in the decision and determines which costs are eligible.

Our decision to grant or reject an application cannot be appealed.

8.2 Conditions for grants awarded

For awarded applications, our general terms and conditions for grants apply⁸. The terms contain, among other things, rules on project agreements, conditions for payment, follow-up, reporting and utilization of results. Scientific publication must take place with open access in accordance with Vinnova's instructions.

Additional specific conditions may be decided for individual projects.

If you do not comply with our terms and conditions, you may be liable for a refund. This also applies if you have been awarded a grant incorrectly or with an excessive amount.

9 How to apply

To apply for a grant, you fill in a web-based form in Vinnova's e-service for applications, which can be accessed via www.vinnova.se. There you also upload the following attachments⁹:

You must upload the project description and CV according to Vinnova's templates.

1. Project description, English (recommended as some assessors may be international)
2. CV, English (recommended as some assessors may be international)
3. Minor support certificate, signed by the project partners applying for de minimis support
4. Model declaration for SMEs, if any part in the project is a SME

⁸ Current terms and conditions can be found on our website, along with help to understand and comply with the terms and conditions: [Vinnova's general terms and conditions for funding | Vinnova](#)

⁹ Templates for the attachments can be found on our website: [Emerging technology solutions step 1 2023 | Vinnova](#)

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Only these attachments will be taken into consideration when applying. Attachments should be uploaded in PDF format.

We recommend that you use the templates in English and that the application is written in English. This is because assessors can be mainly English-speaking. If you choose Swedish templates and the Swedish language, Vinnova may use machine translation to translate the Swedish text into English for assessment.

Keep in mind that it takes time to make an application. You can start filling in information, saving and then continue at a later time. When the application is ready, mark it as ready. You can at any time fully unlock the application and make changes, right up to the last application date.

Mark the application well in advance of the closure of the call.

When the call has closed and the application has been registered with Vinnova, a confirmation will be sent out by e-mail to you who are responsible for the user account, project manager and signatory / head of department. It may take a few hours for you to receive the email.

If you have not received a confirmation email within 24 hours of closing the call, please let us know.

When the application period has expired, completion of the application can only be made at our request.

10 Who can read the application?

Applications submitted to us become public documents, but we do not disclose information about an individual's business or operating conditions, inventions and research results if it can be assumed that an individual will suffer damage if the information is disclosed.