

Tackling sustainability, environmental and climate challenges in the mining and metals industry

SIP STRIM-2020

Call for proposals within the Strategic Innovation Programme for the Swedish Mining and Metal Producing Industry (SIP STRIM)

The Strategic Innovation Programme for the Swedish Mining and Metal Producing Industry (SIP STRIM) is part of Vinnova, the Swedish Energy Agency and the Swedish Research Council Formas joint program for strategic innovation areas. The aim with the programmes within strategic innovation areas is to stimulate international competitiveness and sustainable solutions for global societal challenges.

For more information about the programme, see www.sipstrim.se.

In case of any discrepancies between this text and the Swedish version, the Swedish call text applies. The call text in Swedish is Utlysningstext SIP STRIM 2020, on the call's website found [HERE](#)

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1 Summary of the call

You can apply for funding for shorter pre-studies, full-scale innovation projects or pilot projects that addresses any of the challenges defined by the SIP STRIM Strategic Research and Innovation Roadmap (2019), see www.sipstrim.se. The Roadmap covers the branch-wide challenges of the mining and metals industry. Special focus for this year's call is innovations addressing sustainability, climate change and environmental impact.

Planned budget for the call is 20 MSEK.

Maximum funding for a pre-study is 500 000 SEK and for full-scale innovation projects 10 MSEK. Full-scale and pilot projects may be granted up to 50 percent of eligible project costs and for pre-studies up to 75 percent of eligible project costs may be granted.

Only legal entities can be granted funding. These include e.g. companies, public authorities (e.g. municipalities, counties), non-governmental organizations (NGOs), and research organizations (universities and research institutes).

Pre-studies, maximum duration of six months, will aim to develop, verify and validate the development and commercial potential for possible future full-scale projects. The project consortium can consist of only one partner, but the pre-study proposal must be able to demonstrate industrial relevance in the form of a letter of intent from at least one relevant organization that is not a university or a research institute.

Full-scale innovation projects, maximum of 36 months, which aim to develop and implement ideas that contribute to the realization of STRIM's overall objectives. The full-scale innovation projects must have a technology readiness level (TRL) between 4 and 7 (see appendix for a description of TRL) and focus on innovation, industrial engagement and benefits. The project consortium must consist of at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes.

Pilot projects, maximum of 18 months, which aim to demonstrate, test or implement new technologies, methods, processes or working procedures. The pilot projects must have a TRL between 5 and 7 and focus on innovation, industrial engagement and benefits. The project consortium must consist of at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes.

The applications will be evaluated by international reviewers, so it is strongly recommended that proposals are written in English.

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Important dates

Please note that the dates and times given are tentative. For the latest information, please visit www.vinnova.se.

Call for proposals opens	May 12, 2020
Call for proposals closes	November 5, 2020 at 14:00
Date of decision	February 23, 2021
Earliest date for project start	March 1, 2021
Latest date for project start	June 1, 2021

Person to contact concerning the call's focus, content and desired effects:

Lawrence Hooey, Technology and Innovation Manager, SIP STRIM

Tel: 0920-49 36 65

E-mail: Lawrence.hooey@sipstrim.se

Person to contact concerning the assessment process, administrative, legal and other questions about the call's contents:

Susanne Gylesjö, Programme Manager Vinnova

Tel: 08-473 31 87

E-Mail: susanne.gylesjo@vinnova.se

Contact for questions about the online application service:

Vinnovas IT-support

Tel: 08-473 32 99

helpdesk@vinnova.se

Updated information on the call and link to the eServices submission portal are found at www.vinnova.se.

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2 SIP STRIM's aims and objectives

SIP STRIM aims to strengthen the Sweden's mining and metal producing industry's competitiveness and sustainability by contributing to the development of a world leading industry which contributes to an economically, environmentally and socially sustainable society. The Strategic Research and Innovation Roadmap (2019)¹ describes the challenges and themes for development along the value chain for the mining and metals producing industry.

SIP STRIM seeks a broad range of stakeholders to collaborate to develop their innovation capacity and create new solutions that contribute to the goals of sustainable development in Agenda 2030, within the frame of the Strategic Research and Innovation Roadmap and the call's focus.

2.1 Focus areas of the call

The call is open to any applications which address the challenges described in the Strategic Research and Innovation Roadmap. In order to strengthen SIP STRIM's portfolio, prioritization will be given to innovation projects to meet climate and environmental challenges, and also improve workplace safety and diversity.

The call focus particular on the following topics (but is not limited to):

- Improving energy efficiency and/or shift to fossil-free energy, including supply of innovation-critical metals
- Improving resource efficiency and recycling
- Improving production efficiency
- Improving environmental performance (emissions to air, water, land)
- Improved remediation of industrial/mining sites
- Improved workplace safety and physical environment, and promoting progressive and gender diverse workplaces

Projects are expected to contribute to the development of an equal society by providing both women and men equal parts of the funding, influence and activities in the projects and by the projects' results benefiting both women and men. See more on Vinnova.se about how you can integrate equality and gender aspects in your project².

¹ <https://www.sipstrim.se/sv/agenda/>

² <https://www.vinnova.se/m/jamstallid-innovation/>

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3 Who may apply?

This call for proposals is aimed at consortia where companies, universities, research institutes and other relevant stakeholders contributing to SIP STRIM's objectives can be included.

Pre-studies can be applied for by a single partner as long as the proposal can demonstrate industrial and/or societal relevance in the form of a letter of intent from at least one relevant company or other organization that is not a university or research institute. Consortia applying for full-scale innovation projects or pilot projects at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes.

Project consortia covering the entire innovation chain from idea to end-user/market are considered positively as well as consortia with actors traditionally working in industries other than mining and metal extraction, so that more groundbreaking innovations can be created through new approaches. Involvement of SMEs is strongly encouraged.

The involvement of foreign organizations (companies, universities etc.) is encouraged provided the value to Swedish industry is clearly justified. Foreign organizations are not eligible for funding except in exceptional circumstances but can contribute with own funding.

4 What do we fund?

4.1 Project types eligible for funding

You can apply for funding for the following types of projects:

1) *Pre-studies*, with a maximum duration of six months that aim to develop, verify and validate methods, processes, procedures, pilot systems, testbeds or demonstrators for potential full-scale innovation projects. For pre-studies funding is a maximum of 75 percent of the project's eligible costs. The project consortium can consist of only one partner, but the pre-study must be able to demonstrate industrial relevance in the form of a letter of intent from at least one relevant company or other organization that is not a university or research institute.

2) *Full-scale innovation projects*, maximum of 36 months, which aim to develop and implement ideas that contributes to the realization of SIP STRIM's overall objectives. The full-scale innovation projects within SIP STRIM must have a technology readiness level (TRL) between 4 and 7 (see appendix for a description of the TRL) and focus on innovation, industrial engagement and benefits.

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It is desirable for the project to demonstrate an increase of TRL within the project's term.

The project consortium must consist of at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes. Funding level is up to a maximum of 50 percent of eligible costs and a maximum of 10 million SEK.

3) *Pilot projects*, maximum of 18 months, should aim to demonstrate, test or implement new technologies, methods, processes or procedures. The pilot projects within SIP STRIM must have a TRL between 5 and 7 and focus on innovation, industrial engagement and benefits. The projects should be able to demonstrate an increase of TRL within the project's term.

The project consortium must consist of at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes. Funding level is up to a maximum of 50 percent of eligible costs.

4.2 Eligible costs

Vinnova's financing is through grants. Grants given by Vinnova to businesses and other organizations that conduct commercial activities are regulated by the rules governing state aid³. The rules include, for example, which costs are eligible and how much can be covered by grants.

In this call for proposals funding can be granted for industrial research, experimental development and feasibility studies⁴.

5 Budget for the call

The planned budget of this call for proposals is 20 MSEK.

Pre-studies can apply for funding up to a maximum of 500 000 SEK. Full-scale projects can apply for fund to a maximum of 10 MSEK. For full-scale innovation projects and pilot projects the maximum funding level is 50 percent of the project's eligible costs, and for pre-studies it is 75 percent of eligible costs.

³ State aid: <https://www.vinnova.se/en/apply-for-funding/rules-for-our-funding/state-aid-to-companies/>. General conditions and guide to eligible costs: <https://www.vinnova.se/en/apply-for-funding/rules-for-our-funding/terms-and-conditions-for-our-funding/>

⁴ Table of funding levels for government support: <https://www.vinnova.se/globalassets/huvudsajt/sok-finansiering/regler-och-villkor/dokument/stodnivaer-statligt-stod.pdf>

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Note that funding to individual project partners is limited by rules for state support.

6 Prerequisites for the application to be assessed

For a proposal to be eligible for assessment the following requirements must be met:

- ✓ The project partners must be legal entities.
- ✓ The project may not have started prior to the application's submission.
- ✓ Pre-studies must demonstrate industrial relevance by including a letter of intent from at least one organization that is not a university or a research institute.
- ✓ Full-scale and pilot projects must include a letter of commitment from all partners that are not universities or research institutes.
- ✓ For full-scale projects and pilot projects, the consortium must consist of at least one research organization (institute or academia) and two other relevant organizations that are not universities or research institutes.
- ✓ Full-scale projects and pilot proposals can apply for a maximum funding level of 50 percent of the project's eligible costs.
- ✓ Pre-study proposals can apply for a maximum funding level of 75 percent of the project's eligible costs.
- ✓ Applications must include everything requested in Section 9.
- ✓ Templates provided for project summary (projektreferat), project description (projektbeskrivning) and verified letter of commitment (styrkt åtagande) must be used.
- ✓ Maximum project duration is 6 months for pre-studies, 36 months for full-scale innovation projects and 18 months for pilot projects.
- ✓ The project proposals should address at least one of the focus areas (see 2.1) or other area in the Strategic Research and Innovation Roadmap.

7 Assessment of proposals

7.1 Assessment criteria

Each application is assessed by the independent evaluators according to the criteria below. Full- and pilot scale projects are expected to have detailed work plan, dissemination and implementation plans, and well-defined KPIs (key performance indicators). Applications for pre-studies should describe clearly how the pre-study contributes to the next stage of development and expected impact areas. For project applications which meet the criteria for funding, priority will be given to projects in the call's focus areas.

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Assessment criteria, all project types (Sub-criteria in italics are support and not assessed individually)	
1	<p>Potential</p> <ul style="list-style-type: none"> • <i>The application's scientific quality</i> • <i>The projects potential impact with particular attention to the focus of the call</i> • <i>Extent of innovation</i> • <i>TRL of 3-7 (pre-study); 4-7 (full-scale) ; and 5-7 (pilot)</i> • <i>How the project contributes to sustainable development</i> • <i>Industrial and societal relevance</i> • <i>Commercialization potential including global markets (full & pilot-scale)</i> • <i>How well the project can contribute to a gender equal societal development</i> • <i>The possibility for implementation of results and/or continuation to e.g. EU projects</i>
2	<p>Implementation</p> <ul style="list-style-type: none"> • <i>The quality of the organizational structure, methods and implementation of work</i> • <i>Suitability of project deliverables with respect to the project's goals</i> • <i>The soundness of the work plan and budget</i> • <i>Resource allocation (staff, equipment, etc.)</i> • <i>How well gender equality aspects have been integrated in the project plan</i> • <i>Relevance of communication plan or other dissemination activities</i>
3	<p>Stakeholders</p> <ul style="list-style-type: none"> • <i>The expertise and relevant experience of the individual project members</i> • <i>The expertise within the consortium as a whole (incl. complementarity, the balance between industry, academia, research institutes, small and medium-sized enterprises, NGOs etc.)</i> • <i>Supplementary and interdisciplinary expertise within the project</i> • <i>How well the team (key persons) is composed regarding gender distribution, as well as the distribution of power and influence between women and men</i>

7.2 Assessment process

The assessment process is designed to identify the best proposals with reference to the assessment criteria. The assessments of the applications will be performed by a group of evaluators appointed by Vinnova and comprised of both Swedish and international independent experts working under confidentiality. Pre-studies, full-scale innovation projects and pilot projects are ranked separately.

The following is a schematic representation of the evaluation and decision-making process:

1. Proposal and all forms are to be submitted via Vinnova's eServices portal

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2. Proposals that meet the formal requirements will be assessed by external national and international independent experts. Their assessment may include a short interview via Skype or telephone with the project leader for full-scale and pilot projects. This will result in a recommendation concerning financing and a ranking of the proposals.

3. Vinnova decides which projects will receive financing based on the recommended projects' contribution to the balance in SIP STRIM's project portfolio.

4. Applicants are notified of the decisions and SIP STRIM's management is informed of the results.

8 Decisions and Conditions

8.1 Vinnova's decision

The funding for each partner in approved applications will be stated in the decision. In this call funding is granted for industrial research, experimental development and feasibility studies. The basis of the funding decision is stated in the decision which also determines what costs are eligible.

Vinnova's decision to accept or reject an application cannot be appealed.

8.2 Conditions for granted funding

Vinnova's general terms and conditions for funding, as applicable on the date of decision, apply to this call for proposals.⁵ The terms and conditions include rules for project agreements, conditions for payment, follow-up, reporting and use of results.

As the call for proposals is made within the framework of strategic innovation programme the following special terms and conditions apply:

- The project should be represented by at least one project partner at conferences and other activities arranged within the SIP STRIM programme, circa 2 times per year for full- and pilot scale projects; 1 per year for pre-studies.
- For information about the project and for each publication of project results, it must be stated that the work has been carried out within the Strategic Innovation Program STRIM, a joint program from Vinnova, the Swedish Energy Agency and the Swedish Research Council Formas.
- When the project submits its final report to Vinnova a summary of the project results shall be sent to SIP STRIM programme office via e-mail. The

⁵ Terms and conditions: <https://www.vinnova.se/en/apply-for-funding/rules-for-our-funding/terms-and-conditions-for-our-funding/>

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summary can be shared and published freely and should not contain any confidential or otherwise sensitive information. See www.sipstrim.se for the template.

Additional special terms and conditions may be added for specific projects.

If you do not comply with Vinnova's terms and conditions, you may be liable for repayment. This also applies if you have been granted funding incorrectly or with an excessive amount.

9 How to apply

Applications are to be submitted electronically via the web-based application submission system (eServices portal) which can be accessed at Vinnova's website. The following documents are also to be uploaded⁶:

- Project summary (Projektreferat) using the template, maximum two A4 pages
- Project description (Projektbeskrivning) using the template
- CV for key persons in the project team (at least one person/project partner). Maximum of three A4 sized pages per CV.
- Signed letters of commitment, using the template, from all partners except universities and research institutes (full-scale and pilot projects)
- Letter of intent from at least one company or other relevant organisation that are not a university or research institute (pre-studies). No template is available
- If the proposal is a continuation of a project previously granted funding within SIP STRIM a summary of the content and results should be attached to the proposal (max. 2 pages). It should be clear in the proposal what was done in previous project and how the proposed project will continue this work. No template is available.

When submitting the proposal, the project summary should also be emailed to the STRIM Programme office Lawrence.Hooey@sipstrim.se. The project summary can be shared and published freely and, should therefore not contain any confidential or otherwise sensitive information.

The applications will be evaluated by international reviewers, so it is strongly recommended that proposals are written in English.

After the submission deadline, no changes can be made to the proposal unless requested by Vinnova.

⁶ Templates are available on the call's webpage at [insert link]

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10 Confidentiality

Applications received by Vinnova become public documents but Vinnova does not release data of individual business or operating conditions, inventions and research results in cases where it can be assumed that the individual could suffer damage if the information were to be made public.

Documents sent to the organization responsible for the strategic innovation programme (SIP STRIM Programme Office) are not covered by Vinnova privacy policy. Documents sent to the SIP STRIM Programme office should not contain confidential or sensitive information.

Appendix 1 – TRL

STRIM uses the following TRL

TRL 1 – basic principles observed

TRL 2 – technology *concept formulated*

TRL 3 – experimental *proof of concept*

TRL 4 – technology *validated in lab*

TRL 5 – technology *validated* in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 6 – technology *demonstrated* in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7 – system *prototype demonstration in operational environment*

TRL 8 – system *complete and qualified*

TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

