

# Key Enabling Technologies for Biobased Products

## Joint call Sweden-Finland BioInnovation and CLIC Innovation

The Swedish part of the call is funded by Vinnova within the strategic innovation program BioInnovation. The Finnish part of the call is funded by Business Finland within the program "Bio and Circular Finland".

We encourage Swedish-Finnish cooperation projects, but the call is also open for purely Swedish projects.

### 1 The offer in short

In this offer, we support projects that intend to create conditions for increased quantities of biobased products on the market. The projects should build on an idea that has already been validated in laboratory or small pilot scale. During the project, the process/technology shall be verified in a scale that companies consider relevant for decision on implementation in production scale. A techno-economic analysis and a market analysis shall be included that illuminate conditions for future technical and commercial competitiveness in the time perspective 2-3 years.

All BioInnovation's calls start from an overarching mission to increase the added value in the Swedish biobased sector and thereby create a more sustainable society. The overarching mission for Bio and Circular Finland is to strengthen the competitiveness of the Finnish industry within the circular bioeconomy, by developing sustainable solutions to global challenges.

The call is primarily directed to manufacturers/producers and technology suppliers. They are expected to take a leading role in the projects. The call will prioritize applications that clearly show that the project is of strategic importance for participating companies. Universities, university colleges, research institutes and other relevant actors are also included in the offer. Relevant research providers shall be engaged in the projects, and actors from later parts in the value chain are required for specification of market needs.

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The budget available to fund Swedish partners is 25 million SEK. Swedish partners in a project can maximally be funded with 6 million SEK. The estimated budget available to fund Finnish partners in Swedish-Finnish cooperation projects is 2,5 million Euro. For Finnish partners there is no pre-fixed maximum for funding of a project. The funding between Swedish and Finnish partners should be in reasonable balance based on the work needed to reach the project targets.

The duration of a project is maximally 2,5 years.

### Time plan for the call

Call opens:	<b>2019-03-28</b>
Deadline for applications:	<b>2019-09-17 at 2 pm (Sweden)</b> <b>2019-09-17 at 3 pm (Finland)</b>
Decision date:	<b>2019-11-06</b>
Earliest date for project start:	<b>2019-11-15</b>
Latest date for project start:	<b>2019-12-01</b>

### Contact persons regarding the call background, purpose and expected effects:

#### Sweden:

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#### Finland:

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tel: +358 (0)50 5577695  
[tuomas.lehtinen@businessfinland.fi](mailto:tuomas.lehtinen@businessfinland.fi)

### Revisions

Date	Change in call text
2019-04-12	Section 7.1 Foot note updated with an url link
	Section 7.3.1 The basis for funding has been specified

## 2 What do we want to achieve with the funding?

All BioInnovation's calls start from an overarching mission to increase the added value in the Swedish biobased sector and thereby create a more sustainable society. Cross-sectorial cooperation that creates competitiveness and new business opportunities is sought. Great emphasis is placed on the companies' interest and engagement. Products and services shall fill a clear marked need, be based on resource efficiency, and fulfill relevant environmental requirements.

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The overarching mission for Bio and Circular Finland is to strengthen the competitiveness of the Finnish industry within the circular bioeconomy, by developing sustainable solutions to global challenges.

Manufacturing of competitive products from biomass presupposes new and more cost-efficient processes. High production cost with existing technology prevents both producers and later stages in the value chain from investments in biobased alternatives. Processes that secure right and stable product quality despite variations in the biomass quality is another important aspect. Many good ideas are today discarded with the arguments that it is too expensive, that it is too unsecure, and for volume products also that the raw material supply is limited. Efficient raw material utilization and circularity are important aspects for the choice of products and processes. The modern industrial wood construction is a good example. The area is in an early development phase where the needs for both process and product development are large to compete with the steel and concrete industries on efficiency and performance.

The purpose of the call is to give a basis for decision on upscaling or implementation that means reasonable risk for actors along the value chain. The projects' purpose shall be to reach a target of at least TRL 5-7.<sup>1</sup>

The project shall be part of and contribute to BioInnovation's work with external communication, portfolio analysis, dissemination of results, and systematic learning. BioInnovation want its projects to create development within the aspects technology, market and sustainability in the area of the call.<sup>1</sup>

Cooperation and innovation will be crucial to reach the sustainable development goals in Agenda 2030. With this call, BioInnovation wants more actors to in cooperation develop their innovation capability and create new solutions that contribute to the goals.

Gender equality is a prerequisite for sustainable growth and can be found in Agenda 2030, as an end in itself, but also as a perspective that should permeate the work with all goals. The call should therefore contribute to an equal development of society linked to two main perspectives.

One aspect is that both women and men in an equal manner take part of the grant, participate in and have influence over the project. Another important aspect is about analyzing and taking a position on whether there are gender aspects that are relevant in the problem area and utilization of the solution.

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<sup>1</sup> See the BioInnovation Application guide. TRL: Technology Readiness Level

## 2.1 Cooperation Sweden-Finland

New bio-based products are targeted for global markets. For this call, a clear cooperation possibility between strong bioproduct and biomaterial competences and leading engineering knowledge in Sweden and Finland has been identified. This also means a cooperation between Vinnova and Business Finland in supporting joint projects with complementing activities in both countries.

Both Finland and Sweden are developing new ways to encourage and support the development of novel biobased products. In Sweden, Vinnova has launched the Strategic Innovation Program *BioInnovation*, and in Finland, Business Finland and CLIC Innovation have supported the ecosystem around *New Cellulose and Fibre Products*. At the same time, the *Tandem Forest Values* call (Sweden's gift to Finland 2017) has generated new possibilities for academic researchers from the two countries to cooperate in forest bioeconomy issues, and a possible continuation of this is considered.

It is of great interest to further support joint research where Finnish and Swedish companies and research organizations can complement and benefit from each other's expertise and solutions, and where lab and piloting resources can be co-used in developing new biobased solutions. This is why Vinnova – through BioInnovation – and Business Finland – through the program Bio and Circular Finland and in cooperation with CLIC Innovation – are opening this call for joint projects of Finnish and Swedish companies and research organizations.

## 3 To whom is the call directed?

The call is primarily directed to manufacturers/producers and technology suppliers. They are expected to take a leading role in the projects. The call will prioritize applications that clearly show that the project is of strategic importance for participating companies. Universities, university colleges, research institutes and other relevant actors are also included in the offer. Relevant research providers shall be engaged in the projects, and actors from later parts in the value chain are required for specification of market needs.

The actors shall have ability to and interest in cooperatively contributing to the objectives for BioInnovation and Bio and Circular Finland according to section 1.

We encourage Swedish-Finnish cooperation projects, but the call is also open for purely Swedish (but not purely Finnish) projects. The project consortium must consist of at least three partners, of which at least two are companies. For cooperation projects, in which both Swedish and Finnish partners apply for funding, at least one partner must be a Swedish company and at least one partner must be a Finnish company. To be counted as two partners the Swedish and the Finnish companies cannot belong to the same group structure.

It is a clear ambition in this call to catch the concrete opportunities seen by different market actors. They can be manufacturers and suppliers of biobased materials, products and services. This call will prioritize applications that have market actors rather than research providers as project leader. Many market actors may find it difficult to set aside time for application work and it is therefore natural to cooperate with research providers, but hope is that with market actors and project leader more focus will be put on customer needs and market value rather than preparation and test of new research results. Market actors that represent different parts of a value chain can with advantage be engaged in a reference group.

## 4 What do we fund?

### 4.1 Activities applicable for funding

Projects in this call aim to give a basis for decision on upscaling or implementation that means reasonable risk for actors along the value chain. The projects' purpose shall be to reach a target of at least TRL 5-7.

The call includes different applications and technologies, from single process steps to integrated processes, from raw material to finished product. Some examples:

- Development of new cost-efficient process technology for fractionation of biomass streams or purification of products e.g. through filtration processes, chromatography, extraction.
- Processing of biomass or residual streams from biomass production for manufacturing of low molecular chemicals, polymers, materials, proteins etc. The processes can be chemical, biochemical or physical.
- Development of more efficient processes for manufacturing of products/systems for different application areas (wood construction, vehicles, packaging etc.) that fulfill the market's property demands (e.g. insulating, load bearing, damping, protecting).

Typical activities that can be funded include the following

- Research and development work
- Verification in a scale that companies consider relevant for decision on implementation in production scale
- Protection of developed technology (only applies for SME<sup>2</sup>)
- Techno-economic analyses and market analyses
- Preparation of a basis for decision on upscaling or implementation that means reasonable risk for actors along the value chain

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<sup>2</sup> <https://www.vinnova.se/globalassets/dokument/eu-definition-smf.pdf>

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- Roadmap for utilization of the results and for further upscaling

This call does not fund purely theoretical work or on smaller developments steps of commercial processes.

BioInnovation does not fund projects that primarily aim to develop animal feed, food or pharmaceuticals, and not projects that primarily work with raw materials supply.

## 5 How large funding is available?

The budget available to fund Swedish partners is 25 million SEK. Swedish partners in a project can maximally be funded with 6 million SEK. The estimated budget available to fund Finnish partners in Swedish-Finnish cooperation projects is 2,5 million Euro. For Finnish partners there is no pre-fixed maximum for funding of a project. The funding between Swedish and Finnish partners should be in reasonable balance based on the work needed to reach the project targets.

The duration of a project is maximally 2,5 years.

## 6 Assessment of applications

### 6.1 What do we assess?

Decisions on funding are based on an overall assessment of the project regarding Potential, Feasibility and Consortium according to the following criteria.

#### Potential

- The project has potential to significantly contribute to and benefit from the conversion to a biobased economy
- The project has potential to clearly contribute to the purpose of the call according to section 2
- The project makes a clear transfer in at least one of the aspects TRL, MRL and SRL<sup>3</sup>

#### Feasibility

- The project's starting point in TRL, MRL and SRL<sup>3</sup> has documented verification
- How the planned transfer in TRL, MRL and/or SRL<sup>3</sup> will be performed is clearly described
- Activities in the project are clearly described and motivated
- The project plan is realistic in relation to budget and objectives
- Planned activities contribute to achieving expected results

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<sup>3</sup> See the BioInnovation Application Guide.

- The project plan describes relevant ways to handle equality in the project

### **Consortium**

- Individuals in the project have ability and credibility to complete the project
- Market actors have a requirement specifying role
- The consortium represents relevant parts of the value chain that the project addresses, and the project partners complement each other well
- The project team (key persons) is well assembled in terms of gender and the distribution of power and influence between women and men (an equal distribution is considered to be achieved when gender distribution and the distribution of power and influence in the form of work and roles are within the range 40/60 %)

## **6.2 How do we assess?**

This is a joint call with joint assessment, but projects will need to adhere to formalities of the funding agencies to which they apply (see section 7 and 8).

The applications will be assessed in competition with each other, and the assessment will be done based on the electronic application and the submitted project description.

Schematically, the decision process is as follows:

1. The application is submitted through the respective web portals (see sections 7 and 8 for instructions on how to apply).
2. Applications fulfilling the national formal requirements will be assessed with respect to the assessment criteria by external experts. This results in a funding recommendation.
3. Business Finland and Vinnova agree on which projects to fund based on the recommendation and available budget.
4. National decisions are made by Vinnova and Business Finland and are announced to the applicants. In Sweden the BioInnovation program management is informed of the outcome. In Finland the projects will be part of Business Finland's Bio and Circular Finland program, and their titles will be published at the program's web page.

## **7 For Swedish participants**

### **7.1 How to apply**

The BioInnovation Application Guide is available at Vinnova's webpage for the call. It aims to define certain key concepts so that they can be interpreted and used in a similar way in applications and by assessors, and it provides suggestions for



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tools for describing the application's ambition regarding technology, market and sustainability. Read it carefully to create as relevant an application as possible.

To apply for a grant, fill in a web-based form in Vinnova's application service ("Intressentportalen"), which is accessed through the web site. There you also upload the following attachments<sup>4</sup>:

- Project description in English according to template.
- CV annex, for the project leader and key persons in the project team. For each person, use max 1 A4-page according to template.

**At application, the attachment "Projektreferat" should be sent to BioInnovation via e-mail to [info@bioinnovation.se](mailto:info@bioinnovation.se).** It should be possible to freely disseminate and publish it, and it should not contain confidential or otherwise sensitive data. The template for this is available at Vinnovas webpage for the call. BioInnovation needs these data for project follow-up and statistics, and although the data may have been submitted to Vinnova in connection with the application, Vinnova must not pass them on to BioInnovation. This is the reason why this is in demand.

#### **Instructions for Swedish-Finnish cooperation project applications:**

Swedish partners submit the application to Vinnova according to the following:

- The Swedish consortium must have a project leader for the Swedish part of the project. The project leader submits one application for the consortium.
- One of the Swedish partners must be the coordinator organization for the Swedish part of the project. The coordinator organization must fulfill the requirements of a coordinator according to Vinnova's general terms for projects and grants (section 7.3.2).
- The project description and CVs attached to the application must be the same as the ones submitted by the Finnish partners to Business Finland.

We recommend contacting Vinnova with any questions before the deadline for applications (section 7.5).

When the application deadline has expired, additional information concerning the application can only be requested from Vinnova.

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<sup>4</sup> Templates for the attachments can be found at the call web site <https://www.vinnova.se/en/e/the-strategic-innovation-program-bioinnovation/enabling-technologies/>



## 7.2 National rules

### 7.2.1 Formal requirements

Project applications must fulfill the following requirements in order to be eligible for funding:

- The project leader must be employed by one of the project partners
- The project consortium must consist of at least three partners, of which at least two are companies.
- The project consortium must have companies with operations in Sweden (through registered companies in Sweden)
- The project partners must be legal entities
- The application must contain all mandatory attachments according to section 7.1

### 7.2.2 Companies and eligible costs

Project partners that are companies must finance at least 50 % of the total eligible costs of a project. In Swedish-Finnish cooperation projects, Swedish companies must finance at least 50 % of the eligible costs of the Swedish part of the project. Companies must be limited liability companies (“aktiebolag”) or economic associations (“ekonomiska föreningar”) with active business operations. Research institutes in company form, university holding companies, incubators and consulting companies are in this context excluded from the category of companies.

Companies must have at least as much equity as applied funding according to the balance sheet at the time of application. The company must be at least one year old at the time of application according to the registration date at the Swedish Companies Registration Office (“Bolagsverket”).

Vinnova funding is made through grants. Grants to organizations engaged in economic activity, like companies, are subject to state aid rules<sup>5</sup> (see section 7.3.1). The rules cover, among other things, what type of costs and the percentage of those that may be funded by grants.

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<sup>5</sup> Read more about state aid rules at the Vinnova web site: <https://www.vinnova.se/sok-finansiering/regler-for-finansiering/statligt-stod/>. There you will also find the Vinnova general terms and conditions for grants, and a guide to eligible costs: <https://www.vinnova.se/sok-finansiering/regler-for-finansiering/allmanna-villkor/>

### 7.3 Decisions and conditions

Projects funded in this call will participate in and contribute to BioInnovation's work with external communication, portfolio analysis, communication of results and systematic learning.

#### 7.3.1 About Vinnova's decisions

How much each project partner is granted is stated in the decision. Grants will be based on the Commission's regulation (EU) No 651/2014. The basis for the grant will be specified in the decision letter and it determines which costs are eligible for funding.

Vinnova's decision to grant or decline an application cannot be appealed.

#### 7.3.2 Specific terms and conditions for grants

Vinnova's general terms and conditions<sup>6</sup> apply for grants. The terms include rules on project agreements, conditions for payment, follow-up, reporting and utilization of results.

Since the call is within the framework of the strategic innovation program BioInnovation, the following special conditions apply:

- At least one project partner must represent the project at the conferences and other activities that are arranged within the strategic innovation program BioInnovation, and where the project is invited and asked to contribute.
- 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 BioInnovation, a joint venture by Vinnova, Energimyndigheten and Formas. This applies to publication regardless of medium and to oral presentations.
- At final reporting to Vinnova, a separate final report must be submitted to BioInnovation via e-mail to [info@bioinnovation.se](mailto:info@bioinnovation.se). A template for this final report is available at the BioInnovation web page.

Additional special conditions can be decided for individual projects.

If you do not comply to the terms, you may be liable for repayment. This also applies if the grant decision was incorrect or with an excessive amount.

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<sup>6</sup> Terms and conditions can be found at the Vinnova web site, together with guidelines to understand and fulfill the terms: <https://www.vinnova.se/sok-finansiering/regler-for-finansiering/allmanna-villkor/>

#### 7.4 Who can read the application?

Applications submitted to Vinnova will be public documents, but we will not disclose information about business or operating conditions, inventions or research results if it can be assumed that any individual may suffer damage.

Documents sent to BioInnovation are not covered by Vinnovas privacy statements. Such documents should therefore not be deemed to be classified unless this is clearly stated.

#### 7.5 Contact

**Contact person regarding the application process, the assessment process, funding issues and other questions about the contents of the call:**

Anders Holmgren, Call manager at Vinnova  
+46 8-473 3213  
[anders.holmgren@vinnova.se](mailto:anders.holmgren@vinnova.se)

**Contact person regarding the call background, purpose and expected effects:**

Anna Wiberg, BioInnovation program manager  
+46 8-762 7995  
[anna.wiberg@bioinnovation.se](mailto:anna.wiberg@bioinnovation.se)

**Administrative matters:**

Bengt Larsson, Vinnova  
+46 8-476 3114  
[bengt.larsson@vinnova.se](mailto:bengt.larsson@vinnova.se)

**Contact regarding the application web service:**

Vinnova IT support  
+46 8-473 32 99  
[helpdesk@vinnova.se](mailto:helpdesk@vinnova.se)

Current information about the call and link to Vinnova's application service is at [www.vinnova.se](http://www.vinnova.se).

#### 7.6 Information about BioInnovation

The strategic innovation program **BioInnovation** is a part of a joint venture by **Vinnova, Energimyndigheten and Formas** on strategic innovation areas. The purpose of the effort is to create conditions for international competitiveness and sustainable solutions on global societal challenges.

For more information about the program, see [www.bioinnovation.se](http://www.bioinnovation.se).



## 8 For Finnish participants

### 8.1 How to apply?

Finnish companies and research organizations participating in the call are asked to contact Business Finland prior to the application.

Each Finnish company and research organization applying funding needs to submit its own funding application to Business Finland through online submission portal (<https://www.businessfinland.fi/en/for-finnish-customers/online-services/>)

For Swedish-Finnish co-operation projects, the following documents should be attached when submitting the funding application:

- Project description in English according to template. The project description may be up to 10 pages with 12-point text, and it should provide the information requested in the template.
- CV annex, for the project leader and key persons in the project team. For each person, use max 1 A4-page in English according to template.

For Swedish-Finnish co-operation projects, the project description and CVs attached to the application must be the same as the ones submitted by the Swedish partners to Vinnova.

### 8.2 Formal requirements

In this call Business Finland can fund companies, research institutes and universities. Business Finland is especially looking for projects, which give new possibilities for SME's in the international growth markets, but also larger companies are welcome to participate.

Business Finland funding criteria for Finnish participants in the call:

1. For SME's Business Finland can fund up to 50 % of grants or 70 % of loans of the total project costs. Funding criteria for SME's:  
<https://www.businessfinland.fi/en/for-finnish-customers/services/funding/sme/research-development-and-piloting/>

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2. For large companies Business Finland can fund up to 40 % of grants or 50 % of loans of the total project costs. Funding criteria for large companies: <https://www.businessfinland.fi/en/for-finnish-customers/services/funding/large-companies/research-development-and-piloting/>
3. Finnish research organizations can participate in this call in a project consortium with companies. In each consortium there should be at least two companies. At least one of them should be a Finnish company with its own sub-project with possible Business Finland funding. In co-innovation projects a minimum requirement of one Finnish SME in the consortium may be considered, but more SMEs are expected. In addition, it is important that relevant companies (including SME's) that can utilize the research results are participating in the consortium (with their own project or e.g. in a steering group).

For research organizations Business Finland can fund up to 70 % of the total costs. Funding criteria for research organizations is following the criteria for Business Finland's co-innovation projects: <https://www.businessfinland.fi/en/for-finnish-customers/services/funding/research-organizations/co-innovation/>

### 8.3 Who can read the application?

By applying to this funding the applicants agree that the joint project proposal written by the consortium can be evaluated by an expert panel which may include experts outside the funding organizations. The company specific application form submitted through the online submission system (excluding the joint project proposal by consortium) is evaluated only at Business Finland.

### 8.4 Contact

**Contact persons regarding the call background, expected effects, practical matters and funding principles:**

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Business Finland  
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**Contact person regarding networking possibilities and R&D needs in the biobased products area:**

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## 8.5 Information about Business Finland

Business Finland's goal is to enable companies to grow internationally and to create world-class business ecosystems and a competitive business environment in Finland.

Business Finland has launched the Bio and Circular Finland program which aims to make Finland a forerunner in the circular economy. The circular economy is an opportunity for the industries traditionally important to Finland, but also opens incredible opportunities for a new kind of business. The expected volume of the four-year program is EUR 300 million, of which the share of Business Finland's innovation funding is EUR 150 million. In addition, the program will offer internationalization services and renewing ecosystems that will also attract foreign experts, companies and investors to Finland. This call supports the networking of the Finnish and Swedish biobased product ecosystems. The call is open for all Finnish companies and research organizations.

More info:

Business Finland: <https://www.businessfinland.fi/en/>

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CLIC Innovation's New Cellulose and Fibre Products Ecosystem:

<https://newfibres.fi/en/>

