

Project Application

Evaluation

Swedish Electromobility Centre

Stage V

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Granting Funding for Research Projects at SEC

The project proposal must be in line with Swedish Electromobility Centre's (SEC's) impact goals and mainly within at least one of the five SEC theme areas.

Projects applied for funding from the Swedish Electromobility Centre will be evaluated and judged according to the following area which are explained further below:

- Potential
- Execution
- Actors
- Equality

1. Potential

The application will be evaluated according to the project's potential to contribute to Swedish Electromobility Centre's overall impact goals through relevant issues and innovation level. There are four perspectives that needs to be addressed in the applications:

1. National perspective – Swedish Energy Agency

The Swedish Energy Agency supports research and development about the supply, conversion, distribution, and use of energy, in different industry sectors like transports. The transport system is undergoing the biggest transformation of our time, and the deadline for meeting the global sustainability goals is fast closing. The transport system provides a vital part of society's functions, and the safety of goods and people, and provides a foundation for a welfare society. At the same time, today's transport system entails several challenges such as emissions, health effects and not least inefficiency. By electrification, these challenges can be addressed leading to less emissions, reduced deaths and illnesses, and increased efficiency.

The Swedish Energy Agency contributes with 92,25 MSEK for stage V of the Centre. Of main importance is the transfer to a fossil-free society by electrified transport. Other long-termed effects are to strengthen the Swedish industry in this important area, to create new jobs, and to develop national and international collaboration.

It should be clear in the application how the proposal contributes to the National perspective. The application needs to answer:

- How will the project lead to more electrified transports?
- What is the uniqueness and news value of the project?

2. Academic perspective – Academic partners

The academic partners provide knowledge and long-term competence in relevant areas that are useful for the Swedish society and industry. One of the most important tasks of universities and institutes of higher education is to examine MSc and PhD students, and higher academic degrees (Post Docs and assistant Professors). Participating universities and institutes of higher education conduct research in several important fields that concern electromobility, and they possess great expertise in fields such as *Power engineering*,

Electrochemistry, Automatic control engineering, Structural engineering, Materials technology, Numerical analysis & Optimisation and Systems engineering.

During Stage V, participating universities and institutes of higher education and research institutes also contribute 31,5 MSEK in cash funds and perform various research assignments via contributions in-kind worth an additional 59,5 MSEK.

It should be clear in the application how the proposal contributes to the Academic perspective. The application needs to answer:

- Which examination degrees will the project contribute to, if any? Are PhD students or Post Docs taking part of the projects?
- What is the background of the project?
- If the project can contribute to publication in internationally recognised journals?
- What the State-of-the-art is, which research gap is filled, and which research questions that will be addressed in the project?
- Does the project build important scientific activities? Does the project build important knowledge?

3. Industrial perspective – Industrial partners and stakeholders

The industrial companies involved in the project operate on a competitive market. They are all involved in the development of vehicles, infrastructure, systems, and components in the field of electromobility.

The companies contribute to the SEC Stage V with 25,25 MSEK in cash funds and 68,5 MSEK of various in-kind contributions. Industry's primary interest in participating in SEC is developing better or new products, business models and services that companies can then market and sell for their own benefit.

It should be clear in the application how the proposal contributes to the Industrial perspective. The following questions should be asked:

- Does the project help solve important challenges and meet needs that the industrial partners have?
- Will the project lead to the generation of commercially interesting results that can lead to increased sales of components, subsystems, or entire systems in the field of electromobility for at least one of the companies involved in the project?
- Will there be potentially patentable results?
- Will the project lead to a bettered market for selling electromobility solutions?

4. The Centre's perspective – Joint activities

To achieve the vision of the Centre, there are several Success Criteria, Objectives and Indicators (see Appendix 1). SEC funds three different types of projects; Pre-studies, Research projects <2 years and Research projects ≥2 years. These projects must contribute in various ways to achieving our objectives according to the specifications below.

All types of projects must:

- Contribute to one or more of SEC's objectives, see Appendix 1.
- Have presented the project proposal in the relevant theme (or for a theme leader) prior to applying to inform, invite and align with the corresponding theme areas.
- If they lead to further work funded by another funder, also be associated with SEC.
- Yearly reporting financial and scientific activities according to SEC instructions.

Maximal number of pages is indicated, excluding first page, CV and annex. Applicants have the possibility to include one appendix (max 3 pages) with images and tables, supporting the project description.

Additionally, the following requirements are valid for the different applications:

| | |
|---|--|
| Pre-studies | |
| Application: Max. 5 pages (excl. front page) | |
| <u>Requirements:</u> | <ul style="list-style-type: none"> ▪ Expertise building to form the basis of a larger project for which funding may also be applied for from another funding body. |
| <u>Delivery:</u> | <ul style="list-style-type: none"> ▪ A final report as per template with results, conclusions, and proposals for continuation. |
| Research projects <2 years | |
| Application: Max. 10 pages (excl. front page) | |
| <u>Requirements:</u> | <ul style="list-style-type: none"> ▪ Publish reviewed articles in international journals/at international conferences. |
| <u>Strong recommendation:</u> | <ul style="list-style-type: none"> ▪ Fund parts of PhD student projects. The PhD students should participate in SEC's Doctoral Student Network including the SEC's Doctoral Student Network PhD courses. |
| <u>Recommendation:</u> | <ul style="list-style-type: none"> ▪ Offer an interdisciplinary research environment. ▪ Involved in projects with other centres, research organisations and major international collaboration projects with operations that can be linked to SEC. ▪ Give an account of the possibility of patent applications. |
| <u>Delivery:</u> | <ul style="list-style-type: none"> ▪ A comprehensive final report as per template with results, conclusions, and proposals for continuation. The report must clearly state how the requirements and (strong) recommendations have been met. ▪ Yearly financial and scientific reporting according to SEC instructions. |
| Research projects ≥2 years | |
| Application: Max. 15 pages (excl. front page) | |
| <u>Requirements:</u> | <p>The project must:</p> <ul style="list-style-type: none"> – Either plan and work to ensure that the researcher or PhD student will work for a limited time on site at one of the industrial partners, – Or plan and work for international exchange. ▪ Touch on and collaborate with expertise from a field other than its main field. ▪ Publish reviewed articles in international journals/at international conferences. |

| | |
|-------------------------------|---|
| | <ul style="list-style-type: none"> ▪ Fund (parts of) PhD projects. The PhD students should be involved in the SEC's Doctoral Student Network including the SEC's Doctoral Student Network PhD courses. |
| <u>Strong recommendation:</u> | <ul style="list-style-type: none"> ▪ Offer an interdisciplinary research environment. ▪ Involved in projects with other centres, research organisations and major international collaboration projects with operations that can be linked to SEC. |
| <u>Recommendation:</u> | <ul style="list-style-type: none"> ▪ Give an account of the possibility of patent applications. ▪ PhD students that are funded in-kind should participate in the project. |
| <u>Delivery:</u> | <ul style="list-style-type: none"> ▪ A comprehensive final report as per template with results, conclusions, and proposals for continuation. The report must clearly state how the requirements and strong recommendations have been met. |

2. Execution

- The project has a well-thought-out strategy for realizing the potential and dissemination and utilization of results.
- The project takes its starting point from a solid monitoring of the surrounding world and a state-of-the-art description.
- The effectiveness of the project plan
 - Reasonable project time and budget for the problems to be solved
 - Adequate project plan with activities, work packages, milestones, deliverables, distribution of responsibilities, specific project goals and planning for how goal fulfilment is to be measured.

3. Actors

- Assessment of whether the right organisations and stakeholders are involved to the right extent and at the right time to realise the project's potential.
- The project participants' ability to carry out the project and achieve the project goals regarding the composition of the project group and the competence and resources of the actors.
- Assessment of whether there is a clear collaboration between the project's parties.

4. Equality

- Assessment of equality aspects (gender and/or gender perspective) which may be important to consider linked to the project's problem area, solutions and effects.
- The composition of the team regarding gender distribution, as well as the distribution of power and influence between men and women.
- Assessment of how well equality aspects have been integrated into the project plan.

Assessment criteria

The assessment is done according to the following table (0 Poor, 1 Less good, 2 Good and 3 Very good):

| Perspective | Points |
|------------------------------|--------|
| 1. Potential | |
| 1.1 National perspective | 0-3 |
| 1.2 Academic perspective | 0-3 |
| 1.3 Industrial perspective | 0-3 |
| 1.4 The Centre's perspective | 0-3 |
| 2. Execution | 0-3 |
| 3. Actors | 0-3 |
| 4. Equality | 0-3 |

In the evaluation groups all Full Partners and Program Partners of the Centre assess the written project applications based on the different perspectives. Partners actively participating in a project will not participate in the evaluation of that project application.

Theme Leaders will assess that project applications are in line with the goals of the Theme Area Road Maps.

Based on the assessment the program council will decide on a recommendation for funding.

Appendix 1 – SEC objectives

All SEC projects must contribute to meeting the Centre’s overall aim. Six objectives with associated targets have been formulated to measure how well this is achieved. All must have been met by the time SEC Stage V has been completed (28 February 2027). There are also a number of indicators that must be monitored and reported in annual reports and at the end of the stage, **Table 1 for Stage V**. The objectives and the indicators have been chosen so that together they provide a picture of the scientific excellence of the research and its importance to companies, both in terms of results and the need for qualified workers, as shown below.

Table 1. Indicators that are monitored annually for Stage V.

| KPI Focus | Key Performance Indicator | Total Stage V | SEC overall | Theme | | | | |
|--|---|---------------|-------------|-------|----|----|----|----|
| | | | | 1 | 2 | 3 | 4 | 5 |
| Scientific quality and competence building | Peer reviewed journal articles & conference contributions | 150 | - | 30 | 30 | 30 | 30 | 30 |
| | Post docs meriting | 15 | - | 3 | 3 | 3 | 3 | 3 |
| | PhD & Licentiate examina | 25 | - | 5 | 5 | 5 | 5 | 5 |
| | International collaborations | 10 | - | 2 | 2 | 2 | 2 | 2 |
| | Master thesis | 100 | - | 20 | 20 | 20 | 20 | 20 |
| Knowledge sharing | SEC annual conference | 5 | 5 | - | - | - | - | - |
| | Thematic workshops | 75 | - | 15 | 15 | 15 | 15 | 15 |
| | Cross-thematic workshops | 25 | - | 5 | 5 | 5 | 5 | 5 |
| | SEC attention in relevant media i.e., impact stories | 10 | - | 2 | 2 | 2 | 2 | 2 |
| | Reports presented to the program council incl. thesis | 100 | - | 20 | 20 | 20 | 20 | 20 |
| Gender Balance | Equality (ratio between women and men) | 50/50 | 50/50 | - | - | - | - | - |
| | University workshops | 10 | 10 | - | - | - | - | - |

Objectives 1 – Interdisciplinary projects

80 % of all projects that last for two or more years and are funded by SEC must meet at least one of the criteria below:

- The project must plan and work to ensure that the researcher or PhD student will work for a limited time on site at one of the industrial partners. SEC also encourages industrial researchers to work at one of the academic partners for a limited time within the project.
- The project must plan and work for international exchange.
- The project must work interdisciplinary and combine expertise from more than one field of research.

Objectives 2 – Interdisciplinary research environment

SEC must offer researchers, PhD students and those working on degree projects from industry an interdisciplinary research environment. The industrial parties must also have the opportunity to participate in SEC’s planned PhD courses.

Objectives 3 – Scientifically competitiveness

SEC's projects must be scientifically competitive internationally. SEC must, on average over the period of the stage, publish at least thirty reviewed articles in international journals and/or at conferences every year.

Objectives 4 – Dissemination of knowledge & research findings

The theme groups must convene thematic workshops four times a year, and SEC must arrange an activity that concerns all themes areas every year (E-mobility day).

Objectives 5 – Collaboration

SEC must be involved in at least two projects with other centres or research organisations or major international collaboration projects with operations that can be linked to SEC.

Objectives 6 – Competence supply

Half of SEC-funded research projects that last for two years or more must be PhD student projects. The PhD student should be involved in the *PhD Student Network* and SEC's planned PhD courses.

Appendix 2 – Gender equality strategy

Objective

The goal for *Swedish Electromobility Centre (SEC)* is a gender balance of 50/50. This is a challenge as our technology area has a clear male dominance.

From the Program Description:

“ Gender equality for those who work at SEC is an issue we work actively with, and a reasonable balance is something we strive for. The issue of gender equality has a high priority for the centre’s operational management and the Program Council and the goals is 50/50 distribution on accordance with the program description.”

In addition to the goal of gender equality, SEC considers it important to combat all forms of discrimination and promote equal rights and opportunities for all individuals regardless of transgender identity or expression, ethnicity, religion or other belief, sexual orientation or age in accordance with the Discrimination Act.

Action plan based on the different parts of the Centre

Program Council

The full partners member has 45 % female and 55 % male. Thus, meets the centre’s objectives.

The centre’s management

At present, the management team has 20 % women and 80 % men, due to the dominance of men among the theme leaders. Excluding theme leaders, see strategy for the theme leaders below, the management team is 50 % women and 50 % men.

Theme leaders

10 % women and 90 % men. Here, future work is needed to identify suitable female candidates at each university. For the coming stages, the goal must be to increase the number of women further. During Stage III, 100% were men, but then we only had four theme leaders. In Stage V we have ten. The fact that we have not succeeded in finding more women again reflects the male majority in our field of technology; in the next stage, the balance should be improved.

Theme researcher

Gender equality, together with other aspects such as merit and a suitable background, should be considered when we appoint theme researchers.

Project activity

The gender equality aspect was already considered in the application for a project. The project information shows that "gender equality" is one of the indicators that the SEC monitors. The goal is to reach 50/50. The distribution of men and women in the project group, as well as the distribution of funding between men and women, must be stated in each project application. We do not expect every project group to be equal between men and women, however, this information is essential for the center as a whole. We will compile and follow up this information to keep track of what it looks like.

When project applications are evaluated, “gender” is one of the points included in our evaluation template. In the project's final report, the participants must state in their project information how many women and men have been included in the project, and how the project funds have been distributed between each gender.

Evaluation of applications

It is the program council that will evaluate the project applications that come in. Here the gender balance is even. There is a majority of men in the field of electrical engineering, which is reflected in which applications reach the SEC and in what the gender distribution looks like within the projects. The goal of 50/50 can therefore be difficult to achieve when it comes to the distribution of money, but by being aware of this, we can follow up on what the distribution looks like in reality each year. We want to increase equality as much as possible. In this work, it is important that the SEC ensures that the program council has relevant knowledge about gender equality. This means, for example, that they are informed prior to the evaluations of the applications regarding gender equality. We use material from "Gender equality aspects of research applications" (from the gender equality coordinator at Chalmers):

1. What is the **gender distribution** among participants?
2. What is the gender distribution if you look at the different participants' positions regarding responsibility?
3. What development opportunities are there for participating men/women, for whom participation is meritorious and which have non-meritorious positions?
4. How is money and other **resources** distributed in the application: who/who receives money, who receives heavy administrative tasks and who represents at conferences?
5. What **knowledge-enhancing** initiatives are planned within the framework of the application; for example, workshop on gender mainstreaming, to bring in a gender expert to get help to analyze gender equality perspectives on research, etc.?
6. Is it possible to see gender equality aspects that are about **benefit/enforcement** in the extension of the application?
7. What is the gender distribution of intended **users** of a possible product, whose working life /everyday life can be affected? (Based on the fact that the Swedish labor market is gender segregated, men and women have different transport patterns and take different part in the unpaid home and care work.)

Our responsibility

We consist of many partners from both academia, industry and government. The SEC is not an employer. It is the responsibility of each partner's employer to ensure that the workplace is equal and free from discrimination. What we as a center can do is to distribute the resources in an equal way, and to strive to achieve equality for the users of the technical solutions generated through the center. Transparent recruitment to important functions within the center is also important. We can promote gender equality by, for example, inviting lecturers to our events.

If any form of harassment comes to our knowledge, we must act by contacting the employer. Again, the SEC is not an employer, but as a financier, we have an obligation to ensure that the funds are handled responsibly.

Another part of increasing gender equality is to schedule meetings within the SEC at times that make it possible to combine professional life with toddler life. Therefore, we strive to provide online opportunities for our meetings. We must also actively work to reduce the risk of stress that results in burnout, as burnout is something that mostly occurs among women.

Links

<https://www.do.se/arbetsgivare-ska-forebygga-diskriminering/forebygga-sexuella-trakasserier-och-trakasserier>

<https://www.do.se/kunskap-stod-och-vagledning/stodmaterial-forebygga-diskriminering/arbetslivet/sexuella-trakasserier-och-trakasserier-pa-jobbet>

www.chalmers.se/sv/om-chalmers/miljo-och-hallbar-utveckling/satsningar-pa-jamstalldhet/jamstalldhet-for-excellens/Sidor/default.aspx