Swedish Electromobility Centre

Project Application

Evaluation

Swedish Electromobility Centre

Stage IV

Version 1.1

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Swedish Electromobility Centre

Contents

Granting Funding for Research Projects at SEC

As there are three different spheres of interest/parties that jointly contribute to the research at the Swedish Electromobility Centre (SEC) taking place and succeeding, we need to keep the three parties' result interests in the collaboration separate and assess them. SEC has also laid down joint objectives for operations, the fourth interest, which must also be considered when an overall assessment of each project application is made. These perspectives and objectives are described briefly below.

1. National perspective – Swedish Energy Agency

The Swedish Energy Agency contributes up to SEK 72 million in cash funds. These funds come primarily from taxpayers, and the interest of the Swedish Energy Agency is therefore to give taxpayers value for money. This can be achieved by industry growing and generating more jobs and/or important knowledge. Another important aspect is the transition to a fossil-free society.

Questions should be asked about the following matters:
- Production of commercially interesting results that lead to higher employment in the industry.
- Transition to a fossil-free society.
- Production of important knowledge/examination of licentiates and doctors

2. Academic perspective – University partners

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* and *Numerical analysis & Optimisation*. One of the most important tasks of universities and institutes of higher education is to teach and examine PhD students. During Stage IV, participating universities, institutes of higher education and research institutes also contribute SEK 18 million in cash funds and perform various research assignments via contributions in-kind worth an additional SEK 54 million.

The following questions should be asked:
- Can the project contribute to PhD students graduating from universities/institutes of higher education?
- Does the project build important scientific activities?
- Can the project contribute to publication in internationally recognised journals?

3. Industrial perspective – Industrial partners

The industrial companies involved in the project operate on a competitive market. They are all more or less involved in the development of vehicles, infrastructure, systems and components in the field of electromobility. The companies contribute to SEC Stage IV, partly with up to SEK 23 million in cash funds and partly with up to SEK 48.4 million of various contributions in-kind. Industry's primary interest in participating in SEC is in developing better or new products that companies can then market and sell for their own benefit.

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?

4. The Centre's perspective – Joint activities

To achieve our vision, we have a number of Success Criteria, Objectives and Indicators (***Appendix 1***). SEC funds three different types of project; *Prestudies*, *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. Max pages excluding first page, CV and annex.

Prestudies (max. SEK 200,000) Application: Max 5 pages

Requirements:
- Aim to contribute to one or more of SEC's objectives.
- Expertise building and the basis of a larger project for which funding may also be applied for from another funding body. If this leads to further work, this must be associated with SEC.

Delivery:
- A final report as per template with results, conclusions and proposals for continuation.

Research projects <2 years Application: Max 10 pages

Requirements:
- Publish reviewed articles in international journals/at international conferences.

Strong recommendation:
- Fund parts of PhD projects. The PhD students should participate in SEC's *PhD Student Network* and SEC's PhD courses.

Recommendation:
- 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.

Delivery:
- 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.

Research projects >2 years Application: Max 15 pages

Requirements:
- Must meet at least one of the following criteria. 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.
  - 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.
- Fund (parts of) PhD projects. The PhD students should be involved in *the PhD Student Network* and SEC's PhD courses.

Strong recommendation:
- 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.

Recommendation:
- Give an account of the possibility of patent applications.
- PhD students that are funded in-kind should participate in the project.

Delivery:
- 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.

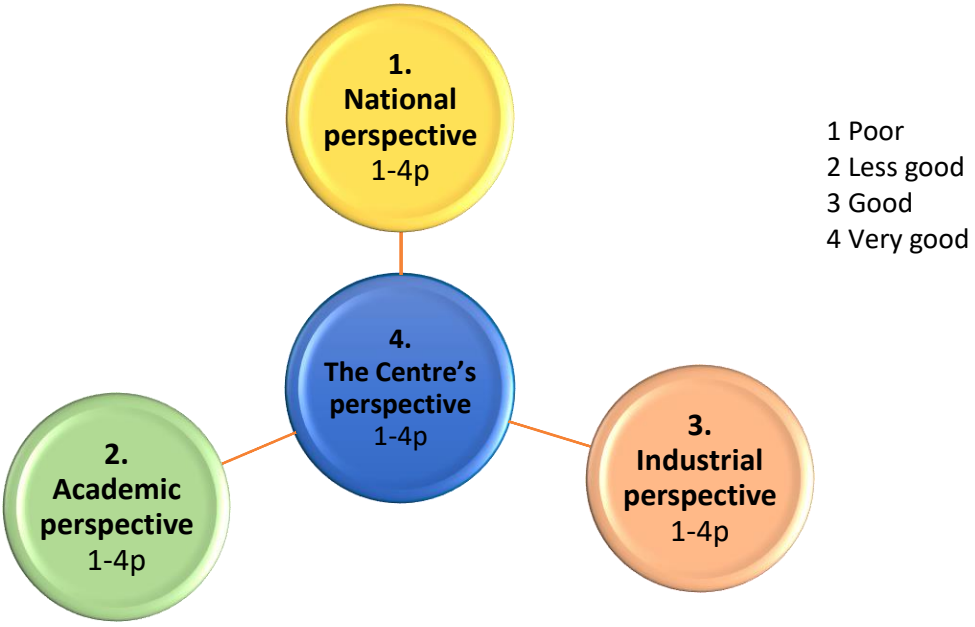
The following questions should be asked:
- Will the project contribute to the Vision?
- Will the project contribute to the objectives for Stage IV (***Appendix 1***)?
- To which indicators will the project contribute (***Appendix 1***)?

Assessment criteria

In order for all parties in the project to receive a dividend for their interests and for the project's joint objectives to be met, each project should assess on a points scale. The assessment must also be accompanied by supporting reasons, for example:

- Planned publications [Yes/No; number].
- High/low relevance.
- Relevant research group behind the application.
- No/strong commitment from industry.
- Great need for expertise in the field.
- Good from gender perspectives.

The perspectives can be described using the figure below. Each perspective is assigned between 1–4 points, depending on how well the research project meets the interests of the various spheres, i.e. how suitable the project is to receive funding.



All *Full Partners* and *Program Partners* of the Centre assess the project applications based on the four different perspectives: *Academic*, *Industrial*, *National* and the joint objectives of the *Centre*. In addition, *Theme Leaders* will assess the project applications regarding the fulfilment of the Theme Area Road Maps. Partners participating in a project application will not participate in the evaluation of that project.

Each partner has a vote for each perspective and assign points to them using the points scale above. Then all the votes for one perspective are combined and the average value becomes the final value for each perspective. This is entered in a table as shown below.

Perspective	Points (1-4)
1. National perspective	XX
2. Academic perspective	XX
3. Industrial perspective	XX
4. The Centre's perspective	XX
Total points	**XX**

The project should not have received any one-point responses. The total score is only supporting the evaluation, if a project is considered to be very important from one or more perspective(s), it can be recommended for financing even though it did not have the highest total score.

Based on the assessment the *Full Partners* will decided on a recommendation for funding.

Appendix 1 – SEC objectives

All SEC projects must contribute to meeting the Centre's overall aim. Six success criteria with associated targets have been formulated to measure how well this is achieved. All must have been met by the time SEC Stage IV has been completed (30 June 2023). There are also a number of indicators that must be monitored and report in annual reports and that the end of the phase (***Table 1***). The success criteria 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.

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 researches 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 touch on and collaborate with expertise from a field other than its main field.

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 phase, publish at least thirty reviewed articles in international journals and/or at conferences every year.

Objectives 4 – Dissemination of knowledge & research findings

The subject groups must convene subject group meetings three times a year, and SEC must arrange an activity that concerns all subject areas every year.

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.

Table 1. *Indicators that are monitored annually.*

Indicators	Total	Theme				
		1	2	3	4	5
Patent applications	**4**	1	1	1	-	1
Reviewed journal articles/conference contributions	**120**	25	25	25	25	20
Master theses	**20**	4	4	4	4	4
Doctors & Licentiates	**25**	6	6	6	4	3
Knowledge reported in writing to the Programme Council	**15**	3	3	3	3	3
Thematic workshops	**20**	4	4	4	4	4
International collaborations	**5**	1	1	1	1	1
Gender equality	**40/60**	-	-	-	-	-
E-Mobility Day	**4**	-	-	-	-	-
SEC in the media	**8**	-	-	-	-	-