RECORD

Regions in Europe Coordinate and Optimize innovation and competitiveness policy instruments towards improving the sustainability of transport - study case of SMEs in the railway sector

Action Plan for the region of Västmanland (SE).

Innehåll

Part I – General information

Project: RECORD

Partner organisation(s) concerned: Region Västmanland, in collaboration with the Railway cluster of Sweden

Country: Sweden

NUTS2 region: East Central Sweden (ECS), SE12

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Part II – Policy context

The Action Plan aims to impact: Investment for Growth and Jobs programme

Name of the policy instrument(s) addressed

2014 SE16RFOP004 East Middle Sweden Operational Programme 2014 2020 Investment priority 1

With the ReactEU reinforcements the program will continue into 2023. In parallel the first version of operational programme for the period 2021-2027 has been submitted to the national level in the end of December 2020. Subsequently the final version of a programme will most likely

The policy context and how the action plan contribute to improve the policy instruments

An important aspect to keep in mind is that the regions within the ECS NUTS area have worked together for the past seven years focused both on ERDF and on smart specialization, so there is a strong structure for collaboration in place. At the same time there are five regions working together, that need to see the connection between their different innovation ecosystems and focus areas and the whole. In East Central Sweden, we work together with Smart specialization for strengthened growth, competitiveness and future innovation capacity. After a joint work during the current program period, we are now focusing on four challenges for society in which we believe we can make a difference during the period 2021-2027. The smart specialization work has meant that we have mapped and invested in strong research and innovation environments, strong concentrations of companies and industries as well as forward-looking projects and initiatives. The picture that emerges of where we are today is interesting.

Sweden is today ranked as an innovative nation in different scoreboards and rankings such as the Regional scoreboard and OECD listing. East Central Sweden is part of a group called Innovation Leaders in the EU's Regional Innovation Scoreboard (RIS) 2017, which identifies us as one of Europe's and Sweden's stronger innovation regions. Located here are some of Sweden's largest innovation companies and several universities that have contributed to a significant number of high-tech companies emerging in recent decades. The region has a well-developed innovation support system with universities and colleges, incubators and business accelerators, science parks, research institutes, clusters and innovation platforms. This means that we have a unique opportunity and ability to address important development areas and challenges that we face - and in this way strengthen the conditions for growth, competitiveness and future innovation capacity. This provides opportunities, but also puts a high bar for what we must achieve in our efforts.

A starting point is the recommendations according to the country report for Sweden 2019, which proposes a focus of the ERDF on initiatives that improve research and innovation capacity and the use of advanced technology. Some parts to take note of here are: “In order for Sweden to achieve the ambitious national target of R & D expenditure of 4% of GDP and maintain its position as a leader in innovation in the EU, the country must purposefully broaden the innovation base and continue to invest significant funds in research and development. There are clear regional differences in terms of

innovation performance and competitiveness." ECS sees this as part of the focus in the work. Furthermore, it is recommended to "Promote coordination between smart specialization strategies and national partnership programs for innovation as well as other relevant strategies (in particular the EU Strategy for the Baltic Sea Region) and other countries both in Europe and abroad". With that as a basis, there is also a smart specialization strategy as a starting point, also to be able to develop this aspect.

The five regions making up ECS have together identified four areas within which there is collective competence and ability to address important challenges and opportunities for future growth in the business sector. These are based together on the strengths identified in all five regions and have a clear link to national and European strategies. The four areas are:

- Smart industry
- Future energy solutions
- Sustainable food supply
- Life Science, focused on welfare technology and e-health

No single actor has enough knowledge and resources to meet the challenges. By strengthening our innovation climate, we want to contribute to meeting the major challenges and changes we face, in Sweden and across Europe, but also to strengthen our competitiveness. It requires a structural transformation and making the common innovation capacity available. With increased access to innovation capacity and the efficiency of the common system, we can increase access to support for companies, increase exchanges with research environments and create conditions for a sustainable structure for continuous interregional cooperation

Going forward a lot of focus will be put in ERDF on the four challenges identified and railway and its relation to other portions of the electromobility area has a strong presence in Future energy solutions. There is also a strong connection to the area identified as Smart industry, the industrial transformation, which in part also provides opportunities and access to leading suppliers and competence in several other industrial sectors necessary for the railway sectors development, as well as for strong industrialization of new solutions. These cross-sector connections will be a key to innovativeness in the railway sector, and there are synergies for working together across sectors.

ERDF in East Central Sweden is a very important fund for investments in these areas. At the same time the limited volume of funds means that it will not be a key source for investments in infrastructure, larger equipment etc. Subsequently ERDF’s interplay with other instruments targeted at R&I and industrial investments, as well as interaction with public authorities making such investments, is another key for the transformation and suggestions put forward in this action plan for increased innovative capacity in the railway sector.

This action plan is based on input from study visits and subsequent discussions and international experiences. These have given a broad spectrum and ideas, which to base stakeholder discussions and interactions on as well as trying to renew our thinking. A larger number of interactions have also taken place with different stakeholders during the project so far. The actions have been inspired by different action plans to start developing our own. In this we are grateful for great discussions and ideas from our partners in this project.

Part III – Details of proposed actions

ACTION 1: Leveraging R&I funding in targeted areas, connecting them to EU and national funding

1. Relevance to the project

There is limited participation in R&I calls for funding nationally from the sector in our region, and this also holds for the EU level. Few if any SMEs participate in calls and projects and even among the larger companies there is a limited understanding of the opportunities that exist. Universities and research institutes participate to some extent, but oftentimes in other areas, and mostly with the same partners.

The challenge is three-fold:

- First, there is a limited interaction between academic organisations and companies, which means few are participating together in calls on a national or EU level. A better understanding of how one can participate and what it means to collaborate is needed.
- Second, research and innovation topics among companies need to be mapped so partners in our region better can identify what calls are relevant but also so a strategic agenda and important questions can be raised with funding authorities and addressed in future calls.
- Third, support on how to engage and push the agenda in projects need to be developed, so companies can work together with relevant partners and develop proposals and engage fully in them.

ERDF funding is a source of funding to develop support for the different challenges and developing the infrastructure/support structure that allows the sector to be more engaged.

This action stems from best practice from Slovakia learnt during the RECORD Study Visit in Poprad in January 2020 and from interactions with national authorities and stakeholders during the spring 2020. It is suitable to improve East Middle Sweden Operational Programme 1a - To improve the research and innovation infrastructure and the capacity to develop cutting-edge expertise in research and innovation and the promotion of centers of excellence, in particular those of European interest.

It can leverage the approach in Shift2Rail (or Horizon 2020) of “Topics” to push the local companies, universities and research centers to join together to give answer through collaboration to sectorial edge topics. “Top-down” topics and regional strategic agenda that stems from industrial and sector needs can be used to can leverage companies’ competitiveness on the European and international markets.

The visit to Tatravagonka industry made this clear, showing in a very clear and evidence-based way how beneficial and impacting a similar approach can be towards the achievement of concrete R&I results that help companies to reach the final market better and faster with high-value / edge solutions.

The identification of Topics could be done by clusters/consortia of actors in the innovation ecosystem proposing them to the Regions, in compliance with the smart specialisation strategies/RIS3 Roadmaps for the NUTS2 region. These are subsequently updated/operationalized to better meet emerging R&I needs and connected to the larger EU funding structure (e g Horizon, Interreg, Cosme).

The mechanism could be launched as pilot and focus parts of ERDF to R&I on pre-specified topics, and to leave ‘free topics’ for those regional companies operating in sectors not covered by regional Clusters and smart specialization challenge areas.

This will allow ECS to capitalize on the strong effort made by clusters and their collaboration partners and actors (companies, academia, research organisations, etc.) to identify their part of the long-term RIS3 roadmaps. It would also offer R&I specific calls to untap the main growth drivers for the key sectorial value chains present in ECS. The Region has previously decided to invest in these through establishment of clusters but also other initiatives driving R&D&I collaboration (e g scaleup support, R&I projects, test and demonstration facilities). It would in this way help the value chains to emerge and organize themselves as competitive ecosystems (and not just as competitive single players).

In addition to the action to identify target areas this could further be leveraged if there were mechanisms for support in identifying, mobilizing for and supporting applications closer to industry. Academia and research organizations have a good structure to apply for funding, but many companies, both large and small struggle with both understanding how they can use the funding and how to get apply for it. This support would be complementary to mechanisms already in place nationally.

2. Nature of the action

The action will require sub-activities, to get this into implementation and to strengthen both the research portion and to get organizations in the sector working together in applications. These are described below. Some of them have already been started.

A. Develop a better understanding and pedagogical material describing the funding structure

This first activity means using professionals that understand the funding structure to develop materials that describe programs, how one can find calls around key topics for the sector, and steps and processes to participate in the calls. In addition, develop case studies and examples how others have done it. The material needs to describe this in a clear and simple way yet capture key elements such as de-minimis rules etc for companies.

Based on this material workshops will be organized as well as written materials for potential companies, to start developing an understanding of how they can use these calls in their own R&I work and how others have done so. The target will be to have a group of individuals that start to understand and together can discuss and participate going forward, as we believe it will require building this competence among a core group that start doing projects, and then we can expand over the coming period.

We have done initial workshops a with a group of larger companies that we believe will be a key to get suppliers and also smaller companies into the calls. We have also had professionals develop a first draft material that will be tested in a pilot series in the spring of 2021. The plan starting fall 2021, is to run regular workshops, connected to the support in activity D, with companies towards targeted calls.

B. Ensuring the ERDF programme opens for opportunities connected to broader EU-funding

In the current version of the Programme there are texts opening up for broader funding and also in the new proposed programme for 2021-27. The texts have been developed during phase 1 of the

project, proposing how companies and other partners can leverage other sources, Horizon (and other EU program such as S3 platforms and Digital Europe) and national funding sources, in the program.

In the spring of 2021 a Plan for Funding Calls within ERDF will be developed for the period 2021-23. As part of that work the project will work with the authorities to see how the ambition connected to EU-funding can be communicated more clearly in the texts for the calls as well as target calls for this specific purpose ie R&I-projects on a European level. The goal is to build awareness and better connect the calls to the workshops and other activities within this first action. Additionally, this will be synched with the National Contact Points for Horizon, and other relevant functions, to see how they can support.

The first calls in ERDF will open 2021, that can involve pilot test, and then subsequent calls opening fall of 2021/closing early 2022 will be more appropriate for a broader group with the target group. This activity of using texts, and re-fining it over subsequent calls, will continue along the next years based on feedback and response. This action will mainly involve the region and authorities developing the calls.

C. Identify and mobilize companies and other participants around a strategic agenda based on industrial needs that can be connected to call

Together with the Railway and Electrification and electromobility clusters in the region, as well as clusters connected to important adjacent technology areas such as AI, advanced materials, sensor systems etc, we will communicate the opportunities within activity A, B and C. We have met with the clusters and have a plan together to start these activities, which will be refined as we get the support structure in place (activity D).

Communication material and campaigns will be produced during the spring of 2021 and tested with companies, to reach a broader group of companies over the coming period.

D. Developing a support structure to enable companies, and partners, to get involved in calls on national and EU-level.

At the Mälardalen University, together with the Electrification, energy and electromobility and Railway clusters, we will establish a support function that can guide companies with partners (e.g. universities, research institutes, and public organizations required for the development of infrastructure projects). This function/person(s) has a focus to support the mobilization for projects during the program, that include actions that connect and lower thresholds for SMEs to engage in EU programs and national programs. It will also, together with the clusters and other organizations in the innovation eco-system, work to promote the activities in A and C towards the target group.

3. Stakeholders involved (please indicate the organisations in the region who are involved in the implementation of the action1 and explain their role)

Companies and research partners within areas that naturally connect to the sector, and with a potential to engage and participate in calls for EU R&D funding. Also Railway cluster of Sweden and the Electrification and electro mobility cluster, as well adjacent clusters within advanced materials (Innovative Materials Arena), sensor systems (Automation region), visualization (Visual Sweden),

Mälardalen Industrial Technology Center (MITC) and others that reach and work with companies that can further support the actions.

The target is to have a group of approx. 30 SMEs/companies as well as approx. 10 large companies in the region that have started to develop an understanding, competence and participating in the activities.

4. Timeframe

Based on the first steps that have already been taken the action will be rolled out as follows:

Spring/summer 2021:

- Pilot workshops with companies, using communication material from A and C and support structure with University
- Develop detailed targeting map for calls within comping key Horizon and national programs
- Establishing the support structure

Fall/winter 2021:

- First calls within ERDF that emphasize this target
- Work with Railway Cluster, Electrification and electromobility clusters as well as other to mobilize companies and partners in the region

2022-: Detailed planning based on response in the first phase

- Expanded activities, both deeper within already involved companies, and broadening target group
- Leveraging up to involve more stakeholders and funding of projects that support the activities.
    - Continued calls in ERDF
    - Mobilizing within target groups

5. Costs

Projects supporting, 150 000 Euro annually for a function as part of a work package supporting this action to SMEs and partners.

6. Funding sources

Key for the funding of the support structure, will be ERDF. Additionally, the project will leverage EEN and funding for Innovation eco-systems and European digital innovation hubs.

For the work involved in specific detailed proposals national planning funding from e.g. the Swedish Energy Agency and Vinnova that is targeted for companies, academics and other partners will be applied for by parties involved.

ACTION 2: Open demonstration and industrialization platforms and opportunities for collaboration

1. Relevance to the project

In ECS there are several companies that have an interest and need to understand and start adopting and developing the next generation of solutions, as well as participating in the shift towards electrification and electromobility. In many cases these solutions exist and can be implemented in current infrastructures, but also as new infrastructure for transport of goods and people are expanded. To do so a faster access and collaboration with test facilities, laboratories, rigs for testing of systems, and a test track etc, but also an ability to showcase products and solutions that combine several companies into a solution for implementation.

In addition to the companies, there are several universities and research institutes with facilities, researchers and students. We believe this ability to bring them together in physical infrastructures and hands-on projects and simplify access to new technologies and start testing them out, and engaging industry, academia and research organisations, students, startups/scaleups etc is a great opportunity to enhance competitiveness. Today projects do parts of this and in one organization, but both the sectoral focus connected to RIS3, and the possibility to connect several parts of the ERDF program together is interesting to see how we could pilot and implement. Given the limits of investment size in ERDF in ECS, one have to think about how to leverage the funds in such a way that they increase connection and ability to attract other funding sources, also in EIB and other instruments. This action is focused on strengthening the ability to work together at and invest in larger platforms for testing and demonstration as well as industrialization and connecting it to the innovation ecosystem through clusters.

One of the concerns expressed by companies engaged in ERDF funding is that compared to other funding, the co-funding is low, especially for large companies. In addition, they experience the funding as complex and attached with rules such as de minimis, co-funding opportunities, application forms and other factors that would benefit from consistency in application. Companies, research organizations and public organizations involved in the building of railway and electromobility solutions find it hard to get smaller first steps going and start working together. If that happened it could accelerate the changes and innovation required. Part of that would be helped by having a simpler solution for getting these started, with funding.

The input and cases this build upon is twofold.

First, recommendation coming from RECORD study visits in ITAINNOVA in Zaragoza and the living lab and Technopôle Transalley in France, as well as from stakeholder meetings and interviews (SMEs, Large Companies) during 2019 and spring 2020. Suitable to improve East Middle Sweden Operational Programme 1a - To improve the research and innovation infrastructure and the capacity to develop cutting-edge expertise in research and innovation and the promotion of centers of excellence, in particular those of European interest and 1b - To promote business investment in research and innovation and to develop links and synergies between companies, research and development centers and the higher education sector.

The Zaragosa visit showed the importance of having smaller, yet fully equipped and staffed centres where SMEs can come in contact with new technologies, test them and also understand and be visionary about the implications of these for the company. This lowers the threshold to test and engage in innovation and research projects to explore the opportunities. Having it set in a neutral and

innovative setting also makes it easier to start out, even if your knowledge is low. In that setting it also brings competence to work with research projects, and larger calls connected to Horizon and other national funding structures.

In Technopôle we saw the opportunities of bringing together many portions of an ecosystem including the cluster, test road/bed, laboratories and research facilities (such as surfer lab) where there is also students, the incubator with startups, and showrooms and possiblities to verify products and ideas. Also the large public private funding partnerships and schemes was something we noted in these visits.

Second, recommendation coming from RECORD study visits in France, Spain and Slovakia as well as stakeholder meetings (SMEs, Large Companies, Academia, Research Organisations, and National agencies for funding) during the fall 2018 and 2019. Suitable to improve East Middle Sweden Operational Programme 1b - To promote business investment in research and innovation and to develop links and synergies between companies, research and development centers and the higher education sector.

With the other EU programmes for R&I based on mandatory transnationality, ERDF is the main source that can support chains of companies – large and small – from the same ecosystem to work together and create a visible impact on the territory because the can work and grow together. Furthermore, the regional connection allows the development of strong visionary ideas that would otherwise be lost to other regional globally better suited to exploit them. To make sure we benefit from these important development s we need to address both the co-funding part and the interest/ease of engagement into the ERDF programs for large Companies, that have limited interest in ERDF Calls. Furthermore, it might be that strong regional ecosystems are weakened because global management teams invest elsewhere because they do not understand the benefits or opportunities provided by the regionally strong program of ERDF. This is what is happening in the Railway sector, and connected industries within electromobility and energy that drive a sustainable transport sector as well as cities, which the RECORD project is addressing.

2. Nature of the action

The action will focus on the activities that together simplify collaboration and should allow more organizations engaging in projects together as well as provide opportunities for new companies to get involved in the sector.

In the first phase there has been a number of workshops with a group of large companies, including initially Mälardalen University (MDH), ABB, Bombardier, Epiroc, Hitachi ABB Powergrids, Innoenergy, Northvolt, Scania, Svealandstrafiken, Volvo Construction Equipment, RISE, Uppsala University, Region Västmanland and the City of Västerås. Workshops, and interviews with members in the Railway cluster of Sweden has also been performed. In these research organisations as well as companies have agreed to open up and work together with SMEs and opening up test and verification facilities. The larger organizations will invest 25 000 Euro per year to start the work, in addition to the funding members of the Railway cluster provide. Together they indicate the cross-sector collaboration necessary to accelerate the development in this field.

A. Develop open test and verification facilities and opportunities

The first activity is opening up existing labs and test facilities. A first step towards this has been taken during the first phase, mapping facilities and an initial mapping of competencies among larger companies and research organizations. Furthermore, several workshops have been run with the companies and their management to ensure there is a clear interest in opening up. This has been confirmed and the large companies are now engaging to open up labs and work together.

Spring 2021: Based on this first mapping and expressed interest the next steps are:

- Detailed mapping of what can be opened in a first stage, and the technical as well as security and data requirements are needed.
- Develop a business model for collaboration in the facilities, and legal etc frameworks for doing so in a simplified manner

Based on these steps the project will then work to develop calls starting late 2021, targeted towards specific objectives and intervention types in the operational program that focus on actions and projects associated with these test and demonstration platforms, including those within industry. Primary objective is on mobilizing around the open structures and the support structures connected to them rather than the physical structures, as ERDF funding is limited. Connect these actions to national and EU finding.

Second stage is increasing the number of companies and organizations working together in these open structures, and utilizing funding as described in activity C below.

B. Mobilize scaleups and other SMEs to work together with large companies

The second activity that has been suggested by stakeholders, but not so clearly seen in the visits, is the part focused on industrialization, e g verifying and testing the industrial solutions in consortia and for getting certificates necessary, and to scale up of production with a competitive offering. While research and innovation provide opportunities, the industrialization is many times critical if the new idea will reach a broader market and make industry more competitive.

Across the study visits we have seen the importance of large companies, and companies and other actors in the regional value chains and ecosystems contributing with different strengths and taking on complementary roles. Similarly, in ECS the larger companies are a strong driver of development, with networks, research organizations, test facilities, competence internally about markets, networks etc that would be of benefit also for many SMEs. These could be SMEs as current suppliers, but it could also be new companies entering important sectors, which could use the larger companies as a first customer, verifying and pushing their products in a relevant direction. In the other end smaller companies, both new and existing, could give vital input in the form af technologies, agility in development, new competencies and quick prototyping across the larger company´s value chain.

This activity will involve work with the clusters, as well as incubators/accelerators, to work together both on hands-on projects and on R&I-projects in key areas.

The main sub-activities involved are:

- Workshops and targeted discussions focused on:
    - Spring 2021: Identifying industrialization/implementation projects at a stage in which SME and scaleups can be engaged. This involves identifying clear needs and a structure for

working together. Synerleap, based in Västerås, is one model for doing this and other will also be explored.
    - Spring 2021: Identifying areas and invite/mobilize SMEs to get involved in the projects in an early stage
    - Summer/fall 2021: Start collaborative processes in projects
- Fall 2020-Spring 2021: Workshops focused on identifying development and innovation projects, in key areas where the group of large companies can invite and involve SMEs and scaleups working together. Three areas have been identified in the first phase:
    - Drivetrains, including digital solutions and optimization
    - Electrification and energy storage solutions
    - Production, industry 4.0, and sustainability across new solutions.
- Start and develop a Working Group for development and innovation projects (spring 2021). Developing a similar mechanisms as in use at the Partner i-Trans through which (a) the industries wishing to apply for R&I public funding undergo a pre-evaluation made by a Cluster committee composed by the most relevant railway professionals (from industry and academia) according to the proposal topic; (b) the analysis entails possible recommendations for review – under a collaborative dialogue – and at the end of the process the Cluster awards a Label to the project proposal.
    - Fall 2020/Spring 2021: Identify key stakeholders (in clusters connected to this project) composed of representatives from industry, academia and actors in the innovation ecosystem connected to the prioritised area, in railway, electrification and electromobility. The Region's Officials to attend as 'auditors'.
    - Fall 2021/Spring 2022: Pilot test : Labelling mechanism for industrial project proposals for funding based on the idea that the working group can give a "proof of excellence" and proof that the topics addressed, and the approaches followed, are meaningful for the competitiveness of the railway sector.

  The mechanism would both enable the evaluation of proposals with relevant expertise and connections for the cluster to strong R&D environments and people. ECS have few R&D only projects but mostly projects that connect different types of actors, e g research, industry and innovation environments. The types of R&D&I projects and criteria would need to be developed, including process for transparency, to enable a long-term sustainability.

The activities are aimed at helping the Region ensure close connection to RIS3 Roadmaps, and the development of co-funded R&I projects.

C. Develop the ERDF program to support activities A+B.

This activity is focused on the steps towards making the ERDF program an integral solution to getting the types of activities in A+B working. The first steps can be mapped out, but then subsequent learning will have to inform next steps. This consists of two sub-activities:

- Develop a working process with the national authorities (started 2020- continuing Spring 2021) to align and simplify by addressing the co-funding levels, simplify rules and procedures and communicate the potential impact of working with ERDF for larger and smaller companies together. This entails communication and marketing of the programs, aimed at this specific sector/value chain. Co-funding levels are set, so focus will be on linking co-funding opportunities with e g regional and national funding that could take steps in that direction.

- 2021: Short to mid-term focus:
  - Working with authorities to develop a template for proposals, based on extract from project proposals in national and EU-calls the key elements to allow a clearer assessment of its Excellence and Impact, together with a clear Implementation part.
  - Identify relevant people at national authorities for specific tpic area. First contacts and meetings with national authorities, Vinnova, Swedish Energy Agency and the Swedish Agency for Economic and Regional Growth have been held and all have agreed to move forward. Nextt step is identifying sector specific and competence area expertise to get involved for the more detailed working process.
- 2022:
  - Apply template to pilot test and propose national calls to align with ERDF calls.

- Develop the “tool box” in ERDF for supporting collaboration together with national authorities. Best practice from Hauts-de-France Region learnt during the RECORD Study Visit in Lille in March 2019 (“SurferLab model”). This model has been used to establish “SurferLab”, the joint research laboratory involving one of key railway industries in the HDF Region (Bombardier), one SME technology provider (Prosyst) and one academia (Université Politechnique Hauts-de-France). Not a dedicated research project, but an original policy based on a long-term view collaboration funded by ERDF, merging complementary skills to work freely on innovative solutions to push to the market. Activities at SurferLab are led by the pull demand identified by the industrial partners also has a target for the creation of spin-off/start-ups. Suitable to improve East Middle Sweden Operational Programme 1a - To improve the research and innovation infrastructure and the capacity to develop cutting-edge expertise in research and innovation and the promotion of centers of excellence, in particular those of European interest.
  - Spring 2021:
    - Run learning session with a broader group based on experiences from SurferLab
    - Map experiences with projects and funding instruments used nationally to enable quick company specific support (national authorities responsible)
    - Workshops with expertise from authorities and also with companies, to develop different options for instruments
  - Fall 2021:
    - Workshops to verify suggested instruments with cluster companies
    - Develop a road map to start testing different instruments
  - 2022:
    - Start implementing proposed solutions/instruments in projects and calls
    - Engaging the Working Group in the process2

3. Stakeholders involved

Stakeholders involve:

- National and regional authorities in charge of programs and developing structures for funding, mainly:
  - Vinnova,
  - Swedish Energy Agency
  - Swedish Agency for Economic and Regional Growth

    - Region Västmanland, and regions within ECS
- Clusters, research organizations and innovation eco-system partners, mainly:
    - Railway cluster of Sweden (gathering approx. 60 companies)
    - Electrification, energy and electromobility cluster
    - Connected clusters within e g advanced materials (Innovative Materials Arena), sensor systems (Automation region), visualization (Visual Sweden), Mälardalen Industrial Technology Center (MITC).
    - Mälardalen University
    - Uppsala University
    - Örebro University
    - Linköping University
    - Research Institutes of Sweden (RISE)
    - Incubators (Create incubator, Synerleap, Ignite Sweden and others)
- Industry partners, and industry associations
    - For partners see above group as well as incubator companies

4. Timeframe

Detailed plans in activities above.

Overall suggested plan:

2021 Q1-3

- Detailed mapping and exploratory work building on actions taken in phase 1 and identified above

2021 Q3-2022-Q2

- Mobilization of a first set of actors
- Pilot testing

2022 Q3-

- Fuller scale testing

5. Costs

Difficult to estimate because it is part of larger projects with several parts. Can both be focused smaller projects to pilot thematic support processes for a sector and larger projects.

For mobilization phase

- 200 000 Euro/year for leading processes, analysis and proposal development
- 300 000 Euro/year for acceleration and collaboration processes with SMEs and scaleups plus industrialization
- Initial work to open up test labs and verification lab, generally part of larger projects with several parts. Estimated budget for larger projects 2-7 M Euro and upwards for implementation projects.
- Pre-study for new solutions and models in ERDF, approx 40 000 Euro.

Budget for implementation phase to be developed based on work in mobilization phase.

6. Funding sources

The focus in the first phase and pilot phase will be on developing funding solutions based on ERDF funding which is the focus to develop in this project and regional funding (in industry, academia and public sector).

Next phase and scaling will focus increasingly on combining with national and other EU-funding sources, as well as private investments.

ACTION 3: Creating a cross -sector innovation platform for SMEs, together with large corporations, academic and public sector in East Central Sweden

1. Relevance to the project

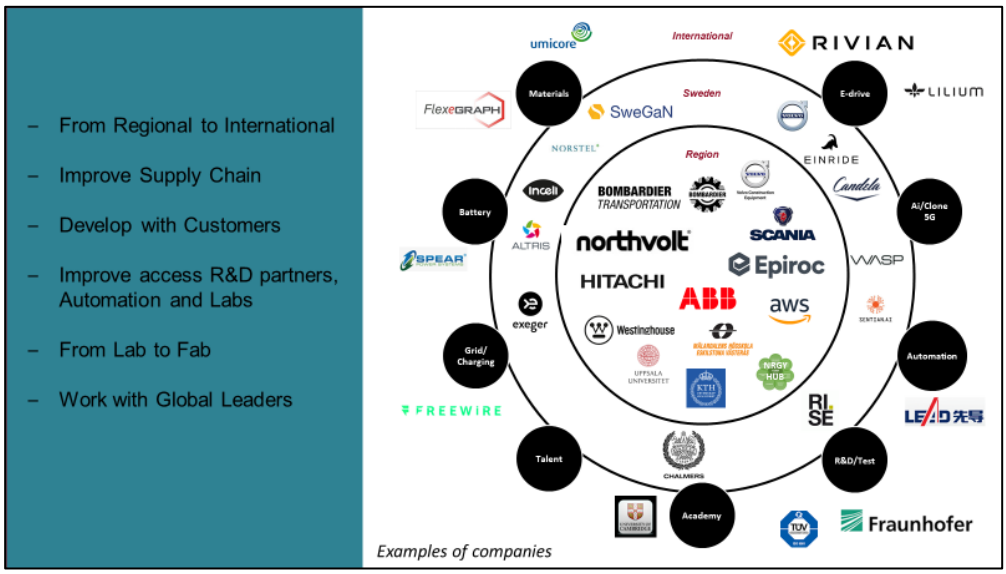
In the region there is a strong competence, large corporations, suppliers, research environments and testlabs and demonstration platforms that together can be leveraged to accelerate electrification and our development of an infrastructure using railway knowledge and technology. Today these different organizations are not working very much together, and many of the companies ask for increased interaction between industrial sectors (energy, electrification, storage, railway, heavy trucks etc). This is due to the strong shifts that happen due to electrification and subsequent effects on energy systems but also on public infrastructure in transportation of people and goods. To get this going there is a need to connect the different opportunities in a hands-on manner.

Additionally, as the element of competence development has not been part of ERDF this is an opportunity to develop this portion of the program and how it can be applied in key industrial sectors for re-skilling in areas based in smart specialization.

This action is derived from the combined lessons we have learned across our study visits, including

- Hauts-de-France Region, Transalley project
- Tuscany's strong cluster, with open platforms for collaboration
- The importance of cross sector platforms shown In e g Aragon, and in the labs etc suggested to open above.

There is a strong ambition backed by key partner organizations to test out new models within.



2. Nature of the action

The action will focus on two key things

- Creating a common strategic agenda among companies and partners in the public sector to accelerate larger scale implementation and development projects for electrification and electromobility
- A program for competence development and re-skilling based on shifts in technology base
    - Identify key areas for re-skilling and needs – together with companies
    - Develop combined competence program across sectors, and requirements for program development at the universities, as well as more basic and vocational training (workshops and interaction with partner organisations and clusters)
        - Develop formats that allow SMEs to participate, given resources restrictions
        - Verifying and testing formats for competence development
    - Develop formats for organizations sharing and co-developing competence in niched areas

There are platforms that have a similar focus, e g Lindholmen Science Park in the West of Sweden, Stuttgart area that are strong in vehicles etc, but generally few can combine both the vehicle focus and the energy system focus plus storage.

3. Stakeholders involved

- Ownership/host: Mälardalen University, with clusters Railway Cluster of Sweden and Electrification, energy and electromobility cluster
- Mobilization of initiative, project structuring and funding: Region Västmanland together with partner regions in East Central Sweden (Örebro, Östergötland, Uppsala, Sörmland and Stockholm):
- Development in key areas: Partner organisations: Mälardalen University (MDH), ABB, Bombardier, Epiroc, Hitachi ABB Powergrids, Innoenergy, Northvolt, Scania, Svealandstrafiken, Volvo Construction Equipment, RISE, Uppsala University, These organisations have agreed to invest 25 000 Euro per year to start the work, in addition to the funding members of the Railway cluster provide.

4. Timeframe

From Fall 2020-2023

5. Costs

600 000-800 000 Euro/year initially to run process and develop platform

- Project/team leadership including administration
- Process leaders including external expertise for identified processes
- Pilot testing of competence development models

6. Funding sources

Primary funding through policy instrument in this action, as well ESF+ for competence projects and national funding focused on the educational sector.

Date: 201231

Name of the organisation: Region Västmanland

Signatures of the relevant organisation(s):

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Mikael Hjorth, Chair Working group developing the Operational Program for East Central Sweden