ARIES4

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Best practices and recommendations for an effective S4 deployment

This deliverable offers a synthesis of tools and initiatives contributing to the roll-out of the smart sustainable strategies established in 2021 by the regions that take part of ARIES4 project.

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Alliance of regional innovation ecosystems based on smart sustainable specialisation strategies

ARIES4 Best practices and recommendations for an effective S4 deployment

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Introduction

From S3 to S4

From Smart Specialization Strategies (S3)…

Smart Specialization Strategies (S3) are a model of economic development that involves concentrating resources in economic areas where each region has significant competitive advantages. This approach is based on the idea that regions should identify their own strengths and opportunities, and then develop policies and investments to capitalize on them. S3 are based on five key principles:

- ***Participation***: The S3 development process should be participatory, involving all relevant stakeholders: public sector, private sector, civil society and academia.
- ***Focus on strengths***: S3 should focus on the strengths of each region, rather than trying to compete with other regions in areas where they do not have advantages.
- ***Innovation***: S3 should support innovation, both technologically and socially.
- ***Collaboration***: S3 should promote collaboration between different relevant actors, both within and outside the region.
- ***Adaptation***: S3 must be flexible and adaptable, in order to be able to adapt to changes in the economic and social environment.

Ss have the potential to contribute to the economic and social development of regions by helping them to:

- ***Improve their competitiveness***: By focusing on areas where they have advantages, regions can increase their competitiveness and attract investment.
- ***Create jobs***: Innovation and economic growth can generate new jobs.
- ***Improve quality of life***: Innovation can contribute to improving the quality of life of citizens by providing new products and services, and by creating more sustainable environments.

…towards a more sustainable model (the S4)

Some regions are adding the fourth “S” of sustainability to their strategy. Smart specialization strategies for sustainability (S4) aim to improve sustainability through innovation, seeking a sustainable recovery, consistent with climate change goals.

Following the same principles of S3, the new model of S4 seeks an adaptation to the changes in the economy and society, working on thematic priorities that take into account new challenges related with environmental impact of the economy and society benefits.

They are a tool, therefore, to adapt the economy and companies to these challenges, but also taking advantage of any new opportunities that open up in this new scenario.

Many regions are implementing tools to improve sustainable economy models. As with previous S3, the main challenge of the strategies is to implement them, to put in practice and make profitable action oriented to the goals stablished. Including the layer of sustainability in the strategy adds other challenges to the implementation, and sharing best practices between regions could be a way to overcome those difficulties.

In this report, some best practices of ARIES4 regions will be shown as examples on how they are implementing sustainable actions in their Smart Specialization Strategies.

ARIES4 Regional strategies. Värmland (Sweden)

Värmlandsstrategin 2040 is the main document for collaborative efforts in the region of Värmland, outlining the ambitions for Värmland 2040 and based on the vision to make Värmland sustainable in the three dimensions – the environment, socially and economically.

Region Värmland

In order to reach the goals in Värmlandsstrategin 2040 activities in line with the vision need to be planned in different, more "hands-on" strategies, action plans, and from a base of shared responsibility from different actors within the region, and in collaborative efforts within Sweden, Europe and the whole world.

Transversal topics:

- Circular economy
- Digitalisation
- Gender integration
- Sustainable development
- Societal security
- Social innovation
- Value Creating Services

Thematic priorities:

- Smart sustainable energy system
  - Forest based bioeconomy
  - Advanced manufacturing and complex systems
  - Sustainable system solutions with photovoltaic in focus
- Sustainable, healthy and equal smart societies
  - Digital health innovation
  - Attraction through sustainable place development
  - Food in sustainable interactions
  - Computer games and gamification

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ARIES4 Regional strategies. Navarra (Spain)

The S4 is the agenda of regional economic transformation to become a reference region in Europe in sustainable and digital economy committed with people and territory

S4 | Navarra Nafarroa

Smart Specialization Strategies are a model for economic development that involves concentrating resources in the economic areas in which each region has significant competitive advantages. The strategy takes into account the economic and scientific-technological potential of the region, and the evolution of demand.

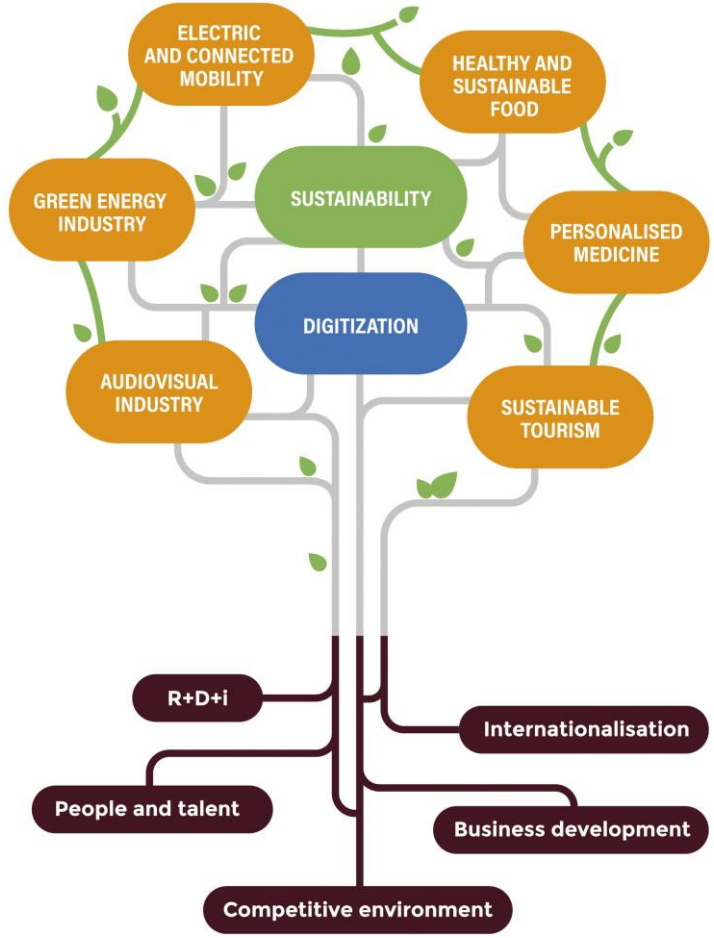
Thematic priorities

- Vertical priorities
  - Electric and connected mobility
  - Healthy and sustainable food
  - Green energy industry
  - Personalised medicine
  - Sustainable tourism
  - Audiovisual industry
- Horizontal priorities
  - Green Transition
  - Digital Transition

Policy Mix

- R+D+i
- People and talent
- Internationalisation
- Business development
- Competitive environment

In the period 2021-2027, Navarra has decided to opt for sustainability as the key to economic transformation. With the S4, Navarra orientates its technological and industrial capabilities towards the search for environmentally and human-responsible solutions.



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ARIES4 Regional strategies. South Denmark (Denmark)

The S3 initiative represents the regional drive towards economic transformation, striving to establish the region as a leading actor in Europe's sustainable and renewable energy and industrial modernization.

PUBLIC INTELLIGENCE

The S3 - Smart Specialization Strategy - helps South Denmark region pinpoint its main strengths, including unique resources and specialized industries. By doing so, the region can showcase its distinct knowledge and industrial expertise, leading to targeted economic development efforts.

Thematic priorities:

- Industrial modernization
  - ✓ Medical technologies
  - ✓ Advanced manufacturing for energy applications
- Energy
  - ✓ Marine renewable energy
  - ✓ Sustainable buildings

Areas of initiatives and policy:

- Clima and sustainability
- Water and soil
- Education
- Mobility
- Culture and creativity
- Health living conditions

Through our development strategy, we are working to promote:

- A green, sustainable Southern Denmark
- A competent and innovative Southern Denmark
- A healthy, thriving Southern Denmark
- A cohesive and attractive Southern Denmark.

In order to promote these four visions, we are working with three “amplifers” – partnerships, international and Danish-German relations – which are to provide power and impetus for the regional development input.

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ARIES4 Regional strategies. Gabrovo Municipality (Bulgaria)

Gabrovo Smart Specialization Strategy 2021-2030 (Gabrovo S3) is an official document, voted by the local parliament in Gabrovo, which defines the direction of Gabrovo's economic development and provides the framework for partnership between the main players in the local economy.

GABROVO
MUNICIPALITY

The strategic goal of the municipality of Gabrovo is to develop a strong economy based on science and innovation. Gabrovo S3 is based on the partnership of several key players in the regional economy:

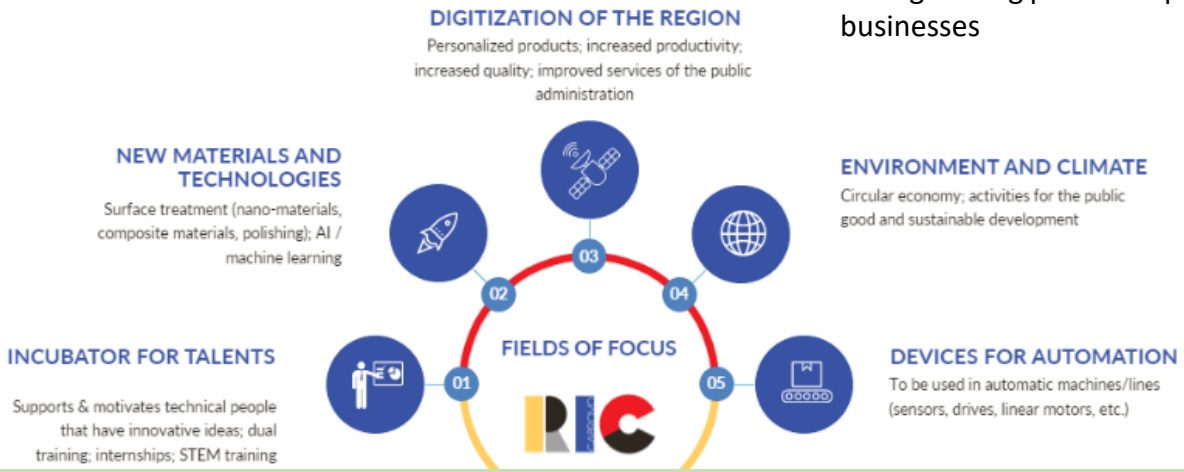
1. Industrial enterprises in the area;
2. Digital companies, startups and the innovation ecosystem;
3. Regional Innovation Center 'Ambitious Gabrovo';
4. Technical University - Gabrovo and its newly established Tech Park; and
5. Gabrovo Municipality and economic policy instruments.

Policy Mix (challenges):

- Investments in R&D and innovations
- Digital transformation
- Climate neutrality
- Globalization
- Human Capital (Skilling, Re- & Up-Skilling)

Thematic priorities:

- Industry and Innovation
  - High-tech manufacturing industries: mechatronics, clean technologies and circular economy
  - Knowledge-intensive services: digital economy and ICT, start-ups and innovation ecosystem
- Science and Education
  - Further development of Gabrovo Tech Park - partnerships with local companies, infrastructure for research and innovation
  - Cooperation of local business with educational institutions, with a focus on training and recruitment
  - Investment in scientific infrastructure and technology transfer
- Digitalization
  - Digital transformation of the industry
  - Development of Gabrovo as a "smart city"
  - Strengthening partnerships with citizens and businesses



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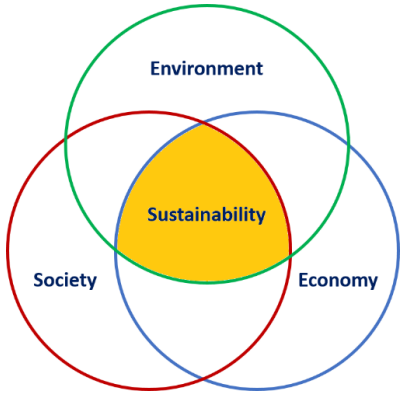
S4 implementation.

Policies and best practices

Including the concept of sustainability within Smart Specialisation Strategies adds a layer of difficulty to the implementation of S3. This is a challenge for which regions have started to define or adapt instruments in their policy mix towards the promotion of sustainability.

The definition of sustainability (linked to the three pillars of environment, society and economy), as well as the orientation towards the SDGs, implies that a large part of public policies impact in some way on the elements of at least one of these pillars or on one of the SDGs. However, it is not easy to identify or develop policies that affect all three pillars together and can therefore be considered as fully sustainability-oriented policies.



The identification of good practices provides a learning experience among the regions, allowing an exchange of lessons that can facilitate the generation of public and private instruments for sustainability.

The 4 regions participating in the ARIES4 Project have various tools at their disposal to deploy their strategies, and many of the actions that the regions have are in some way aligned with the concepts linked to sustainability.

The steps followed to select the good practices analysed in this deliverable are outlined below.

1. Identification of instruments to implement S4.
Each region chose instruments that, from their point of view, would contribute most to the consecution of objectives linked to sustainability within the S4 Strategy of their regions. For this purpose, the criteria defined in ARIES4 on what is considered sustainability, which includes the pillars of environment, economy and society, were taken into account.

2. Classification
The regions made a first selection of more than 120 instruments and policies from their regions that could fit this sustainability concept. Subsequently, the detected instruments were classified by typologies according to four groups of instruments (see next page) and the interest of that instrument as a candidate for possible good practice was analysed (according to the interest in that instrument, its impact, its possible replication in other regions, etc.).

3. Prioritisation and selection
Among the regions, it was analysed which instruments could be most interesting for the ARIES4 project and a selection was made of those covering the different typologies of instruments that had been defined above. In a first step, the number of instruments were reduce to 40 (considering the information availiable for each instrument). In a second step, the tools were filtered by the interest of other regions (as a learing process or possibility of transfer that tool) and a leverage between different types of instruments. By this way, 15 instruments were selected as good practices.

4. Profile of good practices.
For each of the selected good practices, a descriptive sheet has been developed explaining their origin, objective, operation and results.

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Instruments for implementation. Classification of instruments

The four regions that take part in ARIES4 detected 120+ tools related with implementation of sustainability in their regions. Those tools could be classified in 4 groups of instruments (plans, tools related with institution, tools related with businesses, and information/communication tools). The consortium selected 15 of those tools to be proposed as best practices for sustainability implementation. They cover most of the types of tools that we explain below:

PLANS / PROGRAMMES

Plans are the highest level tool for policies programming, acting as an umbrella for many instruments, giving consistence in the structure and coordination between activities and agents.

From a strategic point of view, a plan covers different areas, activities and target groups. The plan can be global (different economy sectors, or how sustainability affects some global plans as: entrepreneurship, R&D, infrastructures…) or focused on a sustainability topic (example: waste, circular economy, mobility…). Could also cover a regional level or municipal level.

TOOLS FOR/FROM THE ROLE OF PUBLIC INSTITUTIONS

- ✓ **Regulation**: definition of laws or normative that can boost the implementation of sustainability
- ✓ **Tax incentives and penalties**. Following the regulation, the sustainable activties can be promoted by incentives, and the lack of sustainability can be corrected by penalties.
- ✓ **Public aids:** subsides for activities related with sustainability, as can be investment aids (specially for early adopters of sustainable solution), R&D subsides (to generate new product/services/startups)…
- ✓ **Public procurement**. The public administration can be an early adopter of sustainable solutions, facilitating opportunities to emerging sustainable products/services, and also showing the benefits to the rest of society.

INFORMATION/COMMUNICATION/EDUCATION TOOLS

- ✓ **Technology surveillance.** The continuous evolution of best reference practices in sustainability requires a surveillance of the new trends and opportunities.
- ✓ **Education/training/dissemination.** Sustainability education must be developed during the whole learning life (school, vocational training, university…), but also require specific attention for reskilling/upskilling of the workforce.
- ✓ **Sustainability awareness:** communication activities remain as the best tool to make society/companies to be aware of sustainability, making people conscious of their activities and their role for a more sustainable model.
- ✓ **Monitoring**. Related with awareness and, specially, with plans/programmes, is important to have a good set of monitoring tools, covering different levels (region, society, business/sector…). They can also be designed for enhancing transparency and accountability.

TOOLS FOR SOCIETY/BUSINESSES

- ✓ **Enablers/entrepreneurship/innovation**: tools to promote entrepreneurship related with sustainability, dissemination of enablers in sustainable solutions, and access to innovation products.
- ✓ **Certification**. A common requirement of enablers and sustainable companies is to certify their sustainable products, services or business model.
- ✓ **Business groups.** Networking activities, clusters, groups of interest…
- ✓ **Projects**. Some specifiic projects have been detected to promote sustainability (ie: European projects, business initiatives…).

Instruments for implementation. Best practices selected

After the initial detection of public instruments for sustainability (more than 120 instruments detected), the regions made a first pre-selection of 40 instruments that could be more interesting for dissemination and analysis. Finally, they selected 15 instruments covering the typologies of instruments explained previously. For these instruments, an analysis template has been developed as a description of the instrument for a better understanding of it as a good practice.

PLANS / PROGRAMMES

Sustainability in development strategies:

- ✓ *The Värmland Strategy 2040 (SE).* Selected as a good practice for programming at a regional level.
- ✓ *S3 of Gabrovo Municipality (BG).* Selected as a good practice for programming at a municipal level.

Focused programs on sustainability:

- ✓ *Navarra Zirkular (ES).* Selected as a good practice for the promotion of circular economy
- ✓ *Odense Renovation (DK).* Selected as a good practice for the management of wastes and for environment awareness.

TOOLS FOR/FROM THE ROLE OF PUBLIC INSTITUTIONS

The use of regulation to promote sustainability:.

- ✓ *The case of Navarra: Regulation+PilotosS4 (ES).* Selected as a good practice for the definition of tools, incentives, taxation and aids to promote sustainable activities.

INFORMATION/COMMUNICATION/EDUCATION TOOLS

The sustainability in education. (DK)+(BG)+(SE)

- ✓ *Primary education (DK).* The centre for primary education research at SDU. Best practice for sustainability education in primary schools.
- ✓ *Vocational training (ES) CENIFER.* Best practice for sustainability education in vocational training and in-company training.
- ✓ *University education (BG).* Best practice for sustainability education in university

Sustainability awareness for businesses and society

- ✓ *Gron Omstilling (DK).* Best practice for sustainability awarenesss to companies.
- ✓ *Sustainable Agenda (SE).* Best practice for awareness to companies and institutions around climate neutrality.

TOOLS FOR SOCIETY/BUSINESSES

Business Opportunities and innovation on sustainability

- ✓ *Cein Green, business incubator. (ES).* Selected as a best practice for promoting entrepreneurship on sustainable business models.
- ✓ *CRE8 Methodology (SE).* Selected as best practice for open innovation, connecting student with real business challenges.

Business collaboration and networking on sustainability

- ✓ *Glava Energy Center (SE)*. Best practice for collaboration and networking in energy sector.
- ✓ *Green Tourism of Funen (DK).* Best practice for collaboration and networking in toursims sector.
- ✓ *Gabrovo ICT (BG).* Best practice for collaboration and networking in ICT sector.

S4 implementation. Policies and best practices

Plans and Programmes

Sustainability in development strategies:

- ✓ *The Värmland Strategy 2040 (SE).* Selected as a good practice for programming at a regional level.
- ✓ *S3 of Gabrovo Municipality (BG).* Selected as a good practice for programming at a municipal level.

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Profile of Best Practice

Värmlands-strategin (The Värmland strategy)

The regional administration is coordinating the process of developing and implementing the strategy, but it is shaped and implemented by several actors. The strategy points to regional strengths and development priorities. There are four priority areas, and each have specific goals: Improve living conditions, Raise competence levels, Develop attractive places, Improve competitiveness.
https://varmlandsstrategin.se/

- **Type of tool:** Public Policy (role of public administration)
- **Region:** Värmland (Sweden)
- **Version:** V1 (Aug2023)
- **Author:** Moa Tunström (KAU)

About the Best Practice. **Origin**

History and Background.
Historically, regional planning has been rather weak in the Swedish context, due to the so called "municipal planning monopoly". The main responsibility for land use development lies on the local government on municipal level. Regional planning then has relied on municipal cooperation, until recently. In brief, it has focused on traffic and transportation issues.

Regional development has since the 1990s reoriented itself from being a location policy (the location of businesses nation-wide), to being a rural development policy and a policy for sparsely populated areas to being a primarily about regional growth. The primary tools for regional development is regional funding for e.g. business development, business innovation, competence development and accessibility to service.

The 1990s and early 2000s were characterized by a "regional mess" with different governance models in different regions, and responsibilities being placed at county level, in municipal cooperation bodies, or in a mix of these. This meant that it was not clear who was responsible for regional development. Sweden joining the EU in the mid 1990s influenced regional policy and the need to streamline the regional level and its responsibilities. Since 2019 Sweden has an established structure with regional administrations that are responsible for healthcare, public transportation and regional development and growth.

The regional development policy tool in Sweden has changed name and guise somewhat over time. The Värmland strategy is a Regional Development Strategy. Historically some regions have developed regional plans concerning land use, and the regional development plan has been referred to as a program, a plan, a strategy or a structural image.

Problem to solve.
The vision for the Värmland strategy is "A sustainable Värmland that changes the world". And, following the selected priority areas (see next page), the problems to be solved are related to living conditions and competence levels in the region, and attractiveness and competitiveness of the region.

The national strategy for sustainable regional development influences the regional strategy, which is supposed to include sustainability perspectives and Agenda 2030. It emphasizes the indivisible three dimensions of sustainability, as well as the indivisible UN sustainability goal as a central framework.

Promoters.
It is the responsibility of the regional administration to develop a Regional Development strategy. However, both the development and implementation is emphasized as a joint process involving several actors beyond the regional administration — municipalities, county, business clusters, the university, civil society, NGOs — and the tools they have at hand.

Coverage.
It covers the region Värmland.

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Objectives.
The vision for the Värmland strategy is "A sustainable Värmland that changes the world". The challenges that the region is facing are phrased as follows:

- Demographic challenges (an ageing population, urbanization) and exclusion/segregation
- The need for raising competence levels, education levels, and a mismatch between supply and demand on the labor market
- Climate change, global crises

The specific priority areas and goals are the following:

Improve living conditions:
- Good and equal health
- Increased trust
- Robust society

Raise competence levels:
- Access to education
- Attractive knowledge region
- Sustainble labor market

Develop attractive places:
- Accessible region
- Sustainable quality of life
- Attractive living environments/habitats

Increase competitiveness:
- Innovative business sector
- Strong businesses
- Equal access to power and influence
- Circular flows

And, related to these goals there are several types of “tools”. These tools can be about governance, dialogue, accessibility and transportation, collaboration between actors, raising awareness, preparedness, strengthening specific business sectors, increase the supply of vocational education, increase fossil fuel free energy production, digitalization etc.

Activities.
It is central to the strategy that it is jointly developed and implemented. This means that it is not specific in pointing out in detail exactly how the tools above are to be implemented and who is responsible for them. It is a regional effort for several actors. This strategy should be made concrete by several actors through their own action plans.

Timing.
The strategy looks ahead from 2021 to 2040, but it is not very specific as regards timeline.

Funding.
The regional administration uses regional funds. Other actors might apply for regional funds or use their own funding.

Management body.
The regional administration is responsible for developing the regional development strategy, jointly with other actors. The strategy refers to “the regional leadership” as consisting of Region Värmland, The County Administrative Board for Värmland, Karlstad university, NGOs, clusters and business organisations, and other actors.

Legal basis.
- The national strategy for sustainable development
- The regulation on regional development and growth
- The law on regional development responsibilities

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Analysis of the Best Practice. **Mechanisms**

Description.
The main tools in relation to the strategy are Action plans. For example on culture, public transport, etc.

Final beneficiaries
This is a comprehensive regional development strategy for the region. This means that the beneficiaries are companies, students, employees, public transport customers, healthcare users etc.

Process.
Regarding regional development funding is given via project applications.

Incentive mechanisms.
The most important phase for attracting beneficiaries to this tool is the strategy development process, which aims to making many actors take ownership of the strategy and seeing their own business or other activity as of importance for the region's development. This kind of awareness raising is done by arranging meetings, workshops and dialogues, and by having draft versions out for review among potential beneficiaries. Secondly, since the regional administration is responsible for regional funding, the strategy is an indication of what regional development funding is supposed to encourage.

Analysis of the Best Practice. **Outcomes**

Performance indicators.
The strategy has 13 goals in the four priority and these goals have in total 48 indicators. To measure these the region collects information from municipalities, municipal cooperations, businesses etc. This information can be both qualitative and quantitative, such as population change, unemployment, education levels, commuting, internet access, participation in local community activities/night school, gender equality etc. and qualitative data on feelings of safety, local projects, efforts to encourage education and training, to increase collaboration between different sectors etc.

The strategy is characterized by a comprehensive sustainability perspective rather than pointing to specific SDGs.

Success explanation.
Each year the region publishes a progress report with quantitative and qualitative data, and reflections on progress indicators. It points to what can be observed as possible effects of the strategy, but also to what is lacking. In the latest report it is for example stated that the strategy is weak when it comes to environmental indicators.

The progress report can show the development of Värmland as a region and give some indications about the implementation of the regional development strategy. In the most recent progress report, it is stated that 67 initiatives/efforts have been reported to the region. 24 are connected to Raising competence levels, 18 to Improved living conditions, 13 to Attractive places and 12 to Improve competitiveness. There are however specific goals that lack any initiatives/efforts. (These initiatives/efforts are not always something that covers the whole region, but more often local municipal initiatives/projects, since it is the local level that has the more direct influence.)

The reflections on successes and remaining challenges in the progress report touch upon many different aspects – governance and leadership of the development process, the need for explorative work, the need for more concrete and collaborative action, and the need to connect local strategies and action plans to the goals in the regional strategy.

Another evaluation tool is the so-called "year-wheel" mapping out the process, and including three occasions when the regional leadership meets to share experiences and discuss the effects of the work. On these occasions it is possible to measure the most important factor in the process – the interest and engagement among the actors in the regional leadership**.**

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Analysis of the Best Practice. **Outcomes**

Success factors.
Since this is a long-term strategy that is still in an early phase, it is not possible to finally evaluate it yet, more than is done in the progress reports mentioned above.

However, representatives from the regional administration have seen signs that the budget process can create hinderances for actual cooperation and actual development. They also consider the stronger "common goal" orientation this round to be a potential success factor. Everyone is joining forces steering towards sustainable development, from the EU level and to the regional level.

They have also observed that there has been more interest and engagement to participate in the process of developing the strategy this round than for the previous strategy and that it appears that Värmland has had a broader and more inclusive process in comparison to other regions.

The county administrative board have revised their vision according the Värmland strategy, and there are municipalities that are developing their own local development strategies (which are local adaptions of the regional strategy). The business clusters have adapted their financial tools more along the strategy goals. But overall the current regional strategy is not yet implemented to the degree it has to be in order to be considered a successful regional development tool.

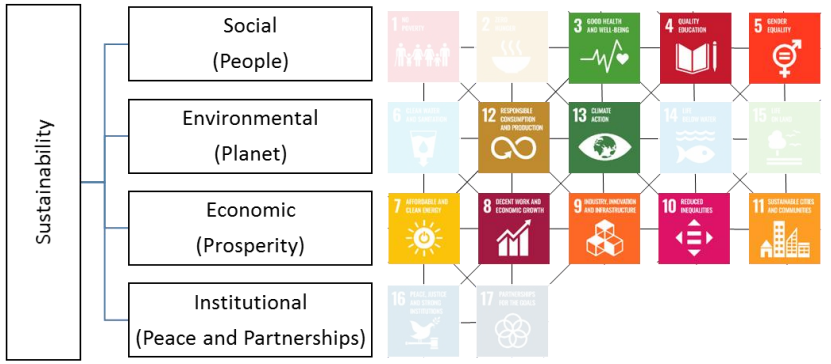
There is a final evaluation of the previous strategy which indicates that it was known, and to a degree accepted and used. The process developing the current strategy should be able to improve this. In comparison to the previous strategy the current one has had a more inclusive development process and depends on an ongoing dialogue. This is at least a potential for better effects on regional development.

Visibility of Good Practice.
The regional administration has experienced positive response from other regions in Sweden and Norway in relation to both the "packaging" and the communication of the regional strategy.

Impact beyond region.
All regions in Sweden are supposed to have a regional development strategy so in that sense there should be transferability.

The Värmland model with an inclusive process is transferrable to other regions depending on how their climate for collaboration is at the outset. It appears as if other regions are being inspired by the inclusive process developing the strategy and now are following the Värmland example.

Sustainability indicators



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Profile of Best Practice

Gabrovo S3

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The strategic goal of the municipality of Gabrovo is to develop a strong economy based on science and innovation.

Gabrovo S3 is based on the partnership of several key players in the regional economy: 1) Industrial enterprises in the area; 2) Digital companies, startups and the innovation ecosystem; 3) Regional Innovation Center 'Ambitious Gabrovo'; 4) Technical University - Gabrovo and its newly established Tech Park; and 5) Gabrovo Municipality and economic policy instruments.

- **Type of tool:** Public Policy (role of public administration)
- **Region:** Gabrovo (Bulgaria)
- **Version:** V1 (June 2023)
- **Author:** Petar Ganev & Desislava Koleva (Gabrovo Municipality)
- **Contact for the Best Practice:** Desislava Koleva (desislava@gabrovo.bg)

About the Best Practice. **Origin**

History and Background.

In the period 2020-2022, in line with all strategic documents on national level, Gabrovo Municipality held numerous public consultations in the process of preparing its Plan for Integrated Development of Gabrovo Municipality 2021-2027. During that period Gabrovo Municipality also presented its new economic profile – Invest in Gabrovo: Green, Smart & Innovative.

Gabrovo Smart Specialization Strategy (Gabrovo S3), officially adopted in early 2022, is a logical continuation of the efforts of the municipality, in partnership and in dialogue with the main stakeholders, to define the direction of economic development of the region and to look for the right tools to support economic growth.

The main areas of Gabrovo S3 are: 1) Industry and innovation – supporting the transformation of the local economy, 2) Science and education – cooperation of local business with educational institutions, 3) Digitalization – mainly development of Gabrovo as a "smart city".

Problem to solve.

Gabrovo economy is facing several challenges in the process of transformation towards a sustainable knowledge economy, based on high-tech industries, innovations and digital solutions. Among these are the limited capacity for application of modern technologies and segmentation in the innovation infrastructure; insufficient interaction of businesses with universities and research structures, negative demographic trends and need to preserve and attract talent. Gabrovo S3 is providing the vision and framework to tackle those challenges and unlock the potential of the local economy.

Promoters.

The main promoter of this policy tool is Gabrovo Municipality in partnership with the main stakeholders – local companies in priority sectors, startups and the existing innovation ecosystem, Regional Innovation Center 'Ambitious Gabrovo', Technical University – Gabrovo & newly established Tech Park.

In continuation of the adoption of Gabrovo S3 and as a result of various discussions on strategic partnership on local level, in late 2022 was created Gabrovo Innovation Cooperation Team (Gabrovo ICT), which will also promote and serve as a platform and an instrument to achieve the goals of Gabrovo S3.

Coverage.

The geographical coverage of Gabrovo S3 is mainly within the territory of Gabrovo Municipality. Nevertheless, the Gabrovo S3 and the newly established Gabrovo ICT will also provoke regional partnerships.

The sectoral coverage is mainly companies in 1) high tech manufacturing Industries, with focus on mechatronics and 2) knowledge-intensive services, with focus on ICT.

ARIES4 Co-funded by the European Union

About the Best Practice. **Description**

Objectives.

The strategic goal of the municipality of Gabrovo is to develop a strong economy based on science and innovation.

Main areas of Gabrovo S3:

- ✓ Industry and Innovation – promoting the development of the local economy, with a focus on high-tech industries and knowledge-intensive services, investment in technical and business infrastructure and improving the innovation environment;
- ✓ Science and education – cooperation of local business with educational institutions, with a focus on training and recruitment, investment in scientific infrastructure and technology transfer, close cooperation between public science and technology units and local companies;
- ✓ Digitalization – digital transformation of the industry, development of Gabrovo as a "smart city", increasing the efficiency of the administration, improving management processes and strengthening partnerships with citizens and businesses

The economic and social challenges Gabrovo is facing are directly linked to the smart specialization of the local economy. Unlocking the potential of the economy, creating new jobs and provoking higher incomes, reversal of demographic trends and the attraction of young people and talent, improvement of the social environment and digital solutions in various public policy areas – all these depend on the development of sustainable and knowledge based economy and the framework for partnership of the main stakeholders through the mechanisms of Gabrovo S3.

Activities.

Gabrovo S3 is both providing the vision for developing of the local economy and providing a framework for partnership of the main stakeholders. The main activities are as follows:

- ✓ Strategic planning and coordination in shaping local policy in numerous fields: investment attraction policy, management of industrial zones and public private partnerships, investments in scientific infrastructure, educational policy, etc.
- ✓ Framework for coordination of main stakeholders and partnership in various projects - creation of mechanism for official and regular communication of main players (Gabrovo ICT).
- ✓ Communication and networking – various public events, presenting Gabrovo as an investment destination, attraction of innovative companies and talent;

Timing.

Start: Strategy adopted in 2022

Duration: 9 years (2021 – 2030)

Gabrovo S3 is expected to be a living instrument, thus it will be monitored and fine-tuned on a yearly basis.

Funding.

The coordination activities are covered by the logistical support of Gabrovo Municipality, Technical University of Gabrovo and Regional Innovation Center ‘Ambitious Gabrovo’.

Various policy instruments may be covered by local budget and/or EU projects.

Management body.

Coordination: Gabrovo Municipality

Participants: Gabrovo Municipality, Technical University of Gabrovo, Regional Innovation Center ‘Ambitious Gabrovo’, Gabrovo Chamber of Commerce and Industry, District Administration Gabrovo, various local companies and educational institutions.

Legal basis.

The National Innovation Strategy for Smart Specialization for the period 2021-2027 (ISIS 2021-2027) positions Gabrovo in three priority areas - 1) Mechatronics, 2) Informatics and ICT and 3) Clean technologies, circular and low-carbon economy;

Gabrovo Smart Specialization Strategy 2021-2030 (Gabrovo S3) is an official document, voted by the local parliament in Gabrovo, which defines the direction of Gabrovo's economic development and provides the framework for partnership between the main players in the local economy.

Analysis of the Best Practice. **Mechanisms**

Description.

Gabrovo Smart Specialization Strategy 2021-2030 (Gabrovo S3) is an official document, voted by the local parliament in Gabrovo, which defines the direction of Gabrovo's economic development and provides the framework for partnership between the main players in the local economy.

Final Beneficiaries.

The sectoral coverage is mainly companies in high tech manufacturing Industries, with focus on mechatronics and knowledge-intensive services, with focus on ICT.

Process.

The tool is applied as a foundation for various economic policies on local level and as a platform for communication and partnership with main local stakeholders.

Incentive Mechanisms.

Gabrovo S3 plays an important role in shaping Gabrovo economic policy and the general plan of integrated development of Gabrovo.

The S3 also allows for better communication between local companies and the public authorities, thus creates an environment for better governance.

Organization.

Gabrovo S3 is an official local document, thus the ownership of the strategy stays with Gabrovo Municipalities. While the municipality is also leading in organizational terms, the entire strategy is based on the partnership with Technical University of Gabrovo and Regional Innovation Center “Ambitious Gabrovo”.

Main actors in Gabrovo S3

- ✓ Local companies in manufacturing and industrial zones – around 30 medium and large companies shape the profile of the industry, located in 4 industrial zones;
- ✓ Digital companies, startups and innovation ecosystem – most dynamic sector, creates new opportunities for young and active people;
- ✓ Regional Innovation Center “Ambitious Gabrovo” – established in 2019 to foster innovations in the region;
- ✓ Technical University of Gabrovo @ Tech Park – invest in human capital, partnerships with local companies, infrastructure for research and innovation;
- ✓ Gabrovo Municipality – policy instruments on local level, investment promotion, developing of the industrial zones.

As far as organization is concerned, the creation of Gabrovo Innovation Cooperation Team (ICT) is an important step, as the team provides the platform for structured communication between the main stakeholders.

Analysis of the Best Practice. **Outcomes**

Performance indicators

The strategic planning of the development and intelligent specialization of Gabrovo's economy requires a very clear set of indicators to ensure the traceability of progress along the main areas of the strategy. The selected indicators should be directly linked to the priority areas and be clearly measurable on an annual basis. The selected indicators follow the three directions of the strategy:

- ✓ Industry and innovation – focusing on the performance (value added, share in local economy, investments, etc.) of high tech manufacturing industries;
- ✓ Science and education – focusing on R&D personnel and expenditures by local companies; performance of TU-Gabrovo Tech Park;
- ✓ Digitalization – focusing on the performance (value added, share in local economy, persons employed, etc.) of the digital sector and digital solution in local governance.

Success explanation.

While Gabrovo S3 is at its beginning phase, there are at least two success stories.

The first one is the positioning of Gabrovo as a leading region in Bulgaria in having a clear vision for its smart specialization and thus attracting interest as a successful model for local planning.

The second one is the creation of Gabrovo Innovation Cooperation Team (ICT), which is directly linked to the S3 and is a working tool for successful partnership between the main stakeholders.

Success factors.

The key factors for the success of Gabrovo S3 are related to the entire process of drafting the strategy, which was based on numerous meetings, discussions, questionnaires and analyses. All these supported the strategy and gave confidence in local stakeholders that the S3 is expressing a shared vision for the future of the local economy.

The leading role of Gabrovo Municipality, the good partnership with Technical University of Gabrovo and the Regional Innovation Center 'Ambitious Gabrovo' created the foundations for the creation of a productive instrument.

Visibility of Good Practice.

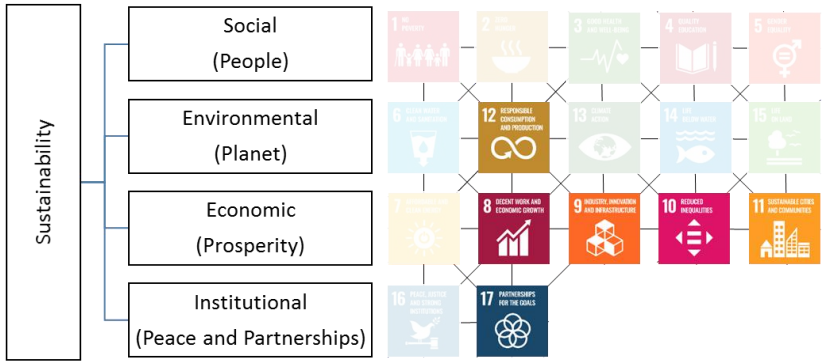
Gabrovo S3 is well recognized by local and national authorities. The strategy serve as an example for other regions in the country.

Gabrovo Municipality is hosting various economic events every year and the S3 is usually presented to the audience.

Impact beyond region.

Gabrovo S3 is presented numerous times to international partners of Gabrovo Municipality and in various events across Europe.

Sustainability indicators



Profile of Best Practice

Navarra Zirkular NZK

Navarra Zirkular is the public-private initiative to promote the adoption of circular economy in companies of the region of Navarra (SPAIN)

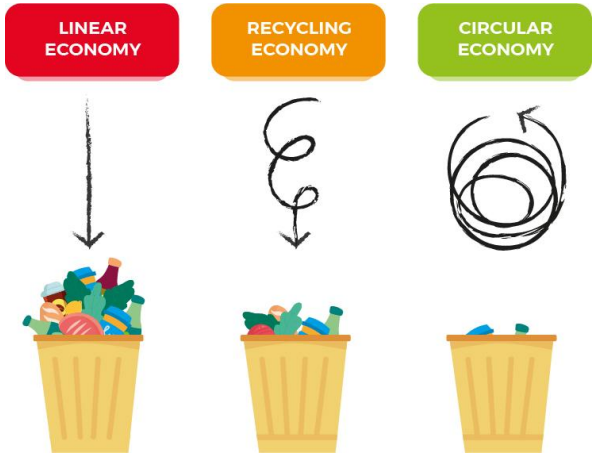
https://navarrazirkular.es/en/

- **Type of tool:** Plan (specific topic related to sustainability: circular economy)
- **Region:** Navarra (SPAIN)
- **Version:** V2 (August 2023)
- **Author:** Daniel Mazo (SODENA)

[1/4] About the Best Practice. **Origin**

History and Background.
Navarra has been working on circular economy since 2007 with various projects and agendas. Since 2016, the 2030 Agenda for circular economy development in Navarra has been an instrument that is implemented through Challenge 7 of the Smart Specialization Strategy of Navarra (S3).

After the transition to the S4 in 2021, which adds sustainability as a transversal priority to the Strategy, Challenge 7 focuses its efforts and brings all stakeholders together under the umbrella of Navarra Zirkular with the aim of facilitating the ecological transition in Navarra companies.



Problem to solve
Circular economy is an economic model for sustainability that seeks the maximum use of resources and minimum waste generation based on maintaining materials, products and their components within a circular process, through which they can be reintroduced into the value chain once their service life is over. Use replaces consumption and this only occurs in effective cycles.

New regulation from EU and national/regional authorities will promote/oblige the adoption of circular economy in businesses activities. Navarra Zirkular was designed to help companies in the process of adaptation to forthcoming regulation.

Promoters
Navarra Zirkular is promoted by the collaboration of two departments of Government of Navarra (Department of Economic and Business Development, the Department of Rural Development and Environment and the Department of Citizen Relationships), and the public companies Sodena (in charge of S3) and GAN-NIK and LASEME.

Coverage.
This plan is oriented to any company with activity in Navarra adhered to this initiative (see next point about adhesion process) with its rights and commitments.

Navarra Zirkular

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Objectives.
The aim of Navarra Zirkular is to promote the adoption of the circular economy in companies in Navarra through public-private collaboration.

Navarra Zirkular supports companies in the transformation of their processes through:
- Support in the analysis and diagnosis of companies.
- Access to training, talent and certification in circular economy.
- Dedicated spaces for collaboration, exchange of best practices and transfer of solutions.
- Development of individual or collaborative projects.
- Support for circular economy entrepreneurship
- Provision of information by sectors and value chains.
- Campaigns to raise awareness, disseminate and publicize the circular economy.

The goals of Navarra Zirkular to 2025 are:
- ✓ To have at least 200 companies adhering to the initiative.
- ✓ To have at least 75 individual or collaborative circular economy projects carried out in the following areas among all the member companies:
  i. Product eco-design innovation
  ii. Reduction of the demand for resources or emissions
  iii. Waste reduction and recovery
  iv. Efficiency of processes or services
- ✓ Analyze and diagnose at least 6 value chains.
- ✓ Provide job-oriented training to 200 students
- ✓ Train 100 workers from public administration and private companies.

Activities.
All the companies that participates in NZK can access all these activities:
- *Diagnose:* access to specific diagnose with a consultant with high expertise on circular economy.
- *Advice*: Specific advice, strategies for the implementation of circular economy, circularity plans-itineraries
- *Individual* projects: Life cycle analysis, environmental declaration, calculation of environmental, carbon, water footprint…
- *Collaborative projects*: Find the partners you need for your R&D&I projects in circular economy
- *Certification*: identify suitable certifications/seals of sustainability suitable for the company/products.
- *Access to talent*: Recruit interns for your individual projects.
- *Training for workers*: Train your employees in the circular economy
- *Working groups*: Participate in working groups on the circular economy topics that interest you
- *Specialized information*: Analysis, value chain studies, material flows and good practices
- *Tools*: for individual projects

Timing.
Navarra Zirkular started its activities in 2022.

Funding.
Navarra Zirkular do not offer any funding directly to the adhered companies.
The costs of the given services is financed by Government of Navarra (through the budget of the involved departments):
- ✓ Staffing for the management of Navarra Zirkular.
- ✓ Regional monitoring and monitoring of Navarra Zirkular
- ✓ Actions with companies: Analysis and diagnostic studies of sectors or value chains; Dynamization of working groups and initiatives; Dynamization of collaborative pilot projects; Training…
- ✓ Communication and awareness campaigns

Management body.
The day-to-day management of Navarra Zirkular involves a multi-departmental and interdisciplinary team from the Government of Navarra and public companies, which will collect the proposals and manage the participation of the companies. The coordination of that team is carried out by SODENA.

Legal basis.
Navarra has some competences related to environmental and tax regulation. In this framework, Navarra Zirkular is based on the Smart Specialization Strategy for Sustainability from 2021 and the region's Agenda to develop Circular Economy with horizon 2030 and its two-year implementation plan.

[3/4] Analysis of the Best Practice. **Mechanisms**

Description.
Navarra Zirkular is a program that covers many initiatives. The program covers from consultant service to training and collaboration around sustainability. The program aims to help companies with a tailored service, and coordination between institutions to accelerate circular economy implementation.

Final Beneficiaries.
Any company established in Navarra can apply to join Navarra Zirkular at any time of the year by signing a manifesto and sending the circular economy evaluation form.

Process.
Once the membership is approved, the company can access Navarra Zirkular services, both personalized activities and group activities.

Each associated company will designate a contact person at management or strategy level, and the person/s of the technical working groups. Every year, all companies will update the circular economy assessment sheet before 30 September in order to be able to define and modify the action plan for the following year in advance.

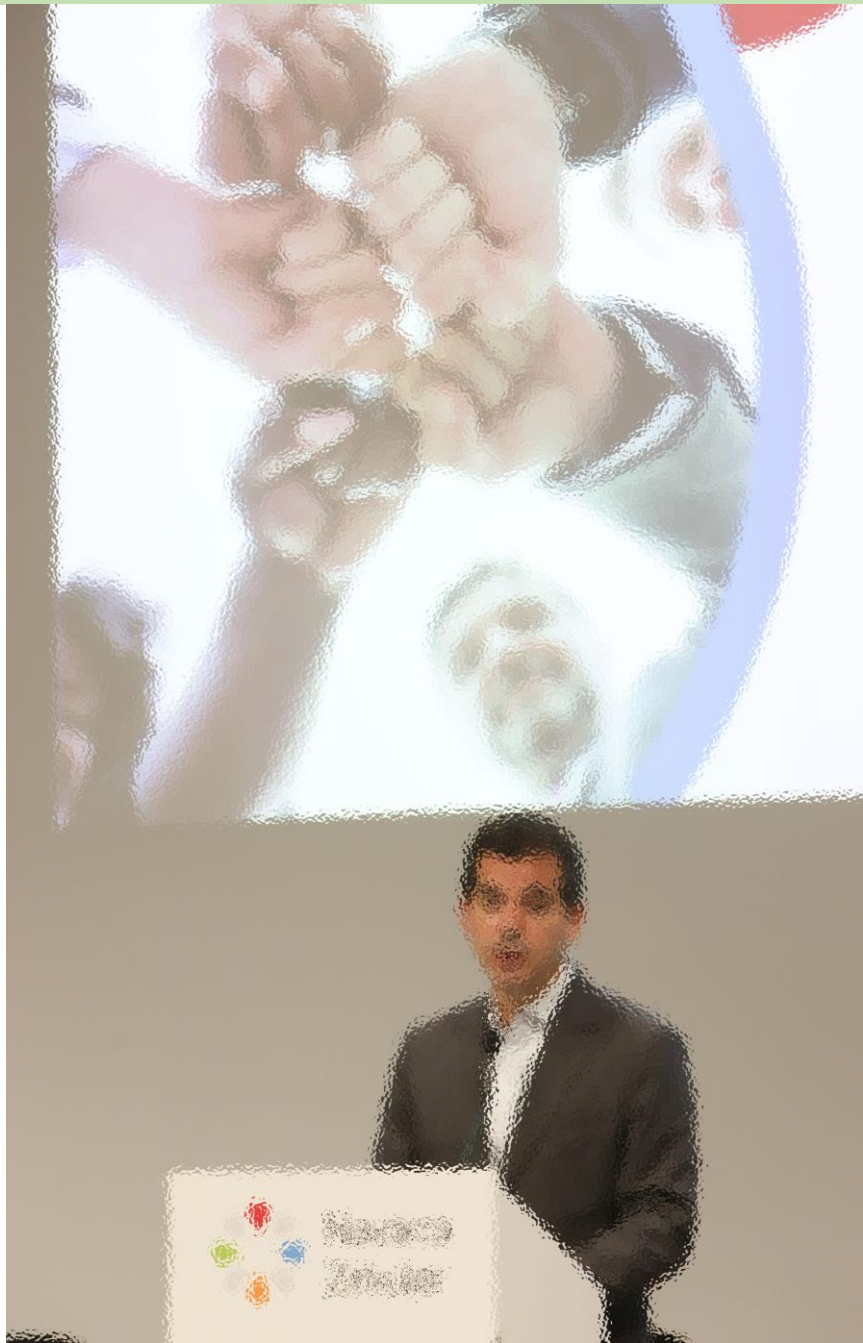
A company ceases to be a member at its own request or when it does not fulfil the annual commitments indicated in this manifesto. Membership is renewed annually by completing or updating the circular economy assessment form.

Incentive Mechanisms.
As it was mentioned, Navarra Zirkular do not offer public aids or financial incentive to companies. The members receive information, training, participation in groups, project detection… services which costs is financed by Government of Navarra.

The members also receive information of activities, including advice of calls of proposals for public incentives related with sustainability given by Government of Navarra, such as:

- Investment aid
- Circularity plans-itineraries
- Improving competitiveness subsides
- Waste fund
- Decarbonization plans
- Aid for energy efficiency
- InnovaRSE (social responsibility)
- RRF calls
- Sustainability plans and technological funds for commercial SMEs

Organization.
Government of Navarra: financing and participation in Governance bodies though the staff of their involved departments



[4/4] Analysis of the Best Practice. **Outcomes**

Performance indicators
It may be updated with new data (September 2023):
- ✓ 97 adhered companies
- ✓ 28 collaborators
- ✓ 104 trained professionals (civil servants and public employees)
- ✓ 2 analysis of chains of value for circular economy (in progress: automotive sector, and construction sector)
- ✓ 1 study of critical raw materials

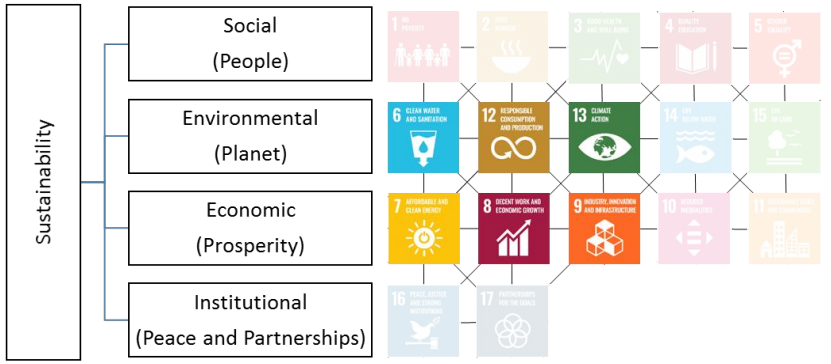
Success explanation.
- It has been the first time that three different departments of Government of Navarra collaborate in an initiative with their staff and budget.
- The creation of a catalogue of 50 companies related to circular economy.
- New instrument created in 2023 to promote R&D in strategic collaboration projects (new call for big collaborative projects)
- Pioneer in new instrument to use taxes to waste generation to finance circular economy activities

Success factors.
- ✓ Tackle the circular economy globally and through an umbrella initiative involving different public plans and departments.
- ✓ The interdisciplinary team with full commitment to the project.
- ✓ Flexibility on new initiatives aligned with the Circular Economy, detecting them, aligning them with the NZK and promoting their implementation throughout the whole territory of Navarra .
- ✓ Cooperation between different institutions, some closer to companies, or closer to citizens and with institutions related with environment care.
- ✓ Good communication of the program, with a trademark that is interesting for the companies involved.
- ✓ Combination of individualized services and group services. Specially, the consultancy serviced give to members.
- ✓ Connection with other public policies: R&D, investment, fiscality…

Visibility of Good Practice.
The communication of Navarra Zirkular in one the reasons of its success. There is a good communication impact by the collaboration of Government of Navarra, business clusters and association, local entities… The trademark is used in many communications and diffusion activities.

Impact beyond region.
Navarra Zirkular has been presented in other regional, national and international forums, as in ACR+ at Dublin. NZK will help also for the preparation of proposals to EU calls.

Sustainability indicators



ARIES4
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Profile of Best Practice

Odense Renovation

Odense Renovation is a leading public organization in environmentally sound waste treatment and modern technology

https://www.odensewaste.com/

- **Type of tool:** Plan (specific topic related to sustainability: Waste management)
- **Region:** Southern Denmark (Denmark)
- **Version:** V1 (October 2023)
- **Author:** Victor Martin-Sanchez (SDU)

[1/4] About the Best Practice. **Origin**

History and Background.
Odense Renovation has been responsible for the collection of waste in Odense Municipality since the late 19th century. Odense Renovation is a 100% municipally owned limited company, which comes under the Mayor's Administration.

Problem to solve.
The waste plan focuses on three main areas of action:

- **Waste prevention** is about supporting that more things are recycled instead of ending up as waste. It could be clothes or food, for example. It is also about circular economy, about promoting cooperation with small and medium-sized companies and about teaching courses for primary and secondary schools about waste prevention.
- **More and better recycling** is about better recycling of waste from private households, waste from companies or the municipality's own waste. It can also be about better handling of waste from building and construction tasks.
- **A clean and sustainable municipality** is about handling waste better at public events, and it is about supporting citizen-driven initiatives for waste management.

Promoters.
Odense Renovation is promoted by Odense municipality and under the National Government's resource strategy called "Denmark without waste".

Coverage.
This plan is oriented towards companies and individuals in Odense and beyond the region who are conscious of environmentally sustainable requirements in terms of waste management.

Odense Renovation A/S

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Objectives.
Waste plan 2021-2032. Odense has an ambition to be climate neutral by 2030. And when we talk about climate goals and sustainability, we must also talk about waste. How do we limit the amount? How do we handle it? How do we recycle as much as possible? The waste plan describes how Odense Municipality will work with waste in the coming years. It is both about preventing waste, recycling more and better and generally being a clean and sustainable municipality. The vision of Odense Renovation is:

- to be a modern municipal company, constantly adjusting to new market conditions through cooperation with private and public companies and institutions in order to gain and maintain a level of knowledge that will improve the competitive power of the company
- to attract and keep qualified employees, who play an active role in increasing the company's activities, both nationally and internationally.
- to have a strong environmental profile and to execute changes to be known as one of the leading and most efficient waste management companies in Denmark.

Activities.
All the participant entities can access to the following services:

- Private individual: Waste management in Odense; waste collection in the center; batteries; container for paper and small cardboard, glass and metal, container for plastic and food & drink cartons; container for residual waste and food waste; hazardous waste and small electronics; more options to see emptying day; recycling station; garden waste and compost; help your garbage (wo)man; regulations for household waste; textile waste
- Companies: Waste from oil and petrol separators; construction waste; central suction for business; business and pick up arrangements; business at recycling stations; hazardous waste; clinical risk waste and medical waste; Odense Nord Environmental center.
- Public institutions and schools: Waste sorting in institutions; waste education; other waste services.
- Homeowners' associations: Waste when you live for rent; containers and containers types; for caretakers and administrators' relevant information.

Additionally, they have also created specific projects that derived of the collaboration with the different entities and with a direct social impact to the environment and the cities. This means new green areas, recreational areas, and underground waste solution which positively impacts the urban environment, among other initiatives.

Finally, they have created a hub called Zirkel which is Odense Renovation's new recycling universe. The place contains a thrift shop, shared warehouse, and then the place will be the center of the creative and innovative, where sustainable thinking is paramount. They organize workshops in collaboration with other sustainable organizations to promote circular economy values and sustainable activities for example using recycled textile materials. They offer an array of different activities (normally there is a small fee to pay to participate in these workshops)

Timing.
The waste plan was adopted by Odense city council on 22 September 2021

Funding.
Odense Renovation is a 100% municipally owned limited company, and we submit an annual report in accordance with the Annual Accounts Act and Danish accounting guidelines.

Management body.
Odense Renovation is a limited company that is 100% owned by Odense Municipality. As a limited company, they have a board of directors that consists of 4 politicians, 2 "professional board members" and 3 elected employees. The board meets quarterly and deals with the topics presented by the managing director at Odense Renovation.

Legal basis.
Odense Renovation's articles of association were adopted at the founding general meeting on 1 November 1993, when Odense Renovation was founded as a company. All municipalities must recycle 50% of household waste in 2022.

[3/4] Analysis of the Best Practice. **Mechanisms**

Description.
Odense Renovation covers several activities. Specifically, it consists of a recycling plant and a circular economy platform/hub (Zirkel). The plan helps the municipality and the region to achieve the 2030 climate neutral area goal.

Final Beneficiaries.
Any company, private individual, public institutions and schools, and Homeowners' associations interested in recycling service or in the case of education institutions also training courses to teach the students the importance of recycling and its big environmental implications.

Process.
Any relevant stakeholder is welcome to apply for recycling services. Yet, there are strict clear regulations to fulfill. The regulation establishes guidelines for the management of household waste from all residents and property owners in Odense Municipality. The aim is to prevent pollution, maintain hygienic environmental conditions, and minimize resource usage by encouraging waste recycling.

Incentive Mechanisms.
Odense renovation does not provide financial incentives as it helps different relevant entities to accomplish with the 2030 climate neutral goal. The members receive general information, recycling infrastructure, and training. Specifically, the members also receive more specific information and service like:

- Gardening compost
- Waste education and tour at the recycling station
- Sorting brochure
- Additional options for emptying days of the containers (via SMS or self-service platforms)
- Etc.

Organization.
Odense municipality participating in the multiple activities through the representative per each department representing personal individuals, companies, public institutions and school and homeowners' associations administrators.

[4/4] Analysis of the Best Practice. **Outcomes**

Performance indicators
Odense renovation has impact, and its performance has been featured in the following activities:

- ✓ In the TV, newspaper, local radio, and podcasts
- ✓ 190,000 citizens and companies used Odense Renovation services
- ✓ 35 different types of waste

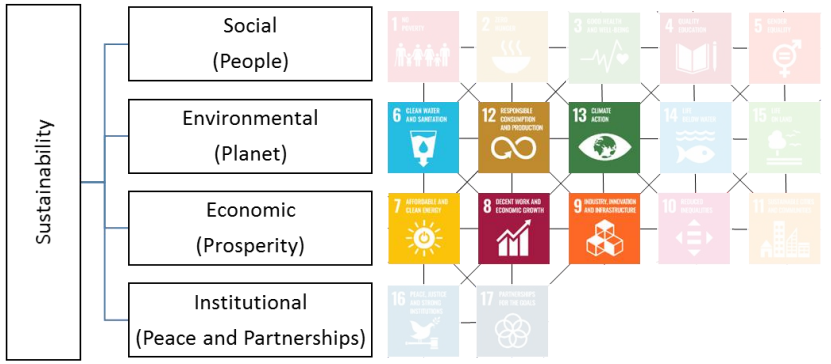
Success explanation.
Odense Renovation is a modern company that not only collects, processes and redistributes solid waste, but also plays a major role in taking responsibility for protecting the environment wherever possible. They do this by ensuring that the systems and methods used are the best possible in relation to the balancing of three essential elements: service level for citizens and companies, financial gain or cost and the environmental impact.

Success factors.
Odense renovation is pioneer in ensuring that the waste is transported to the right place for the right treatment: recycling, reuse, energy recovery through incineration or, as a last resort, landfill. Landfill and certain types of recycling processes take place at Odense Environmental Centre, which is operated by Odense Renovation.

Visibility of Good Practice.
The types of treatment that Odense Renovation can't deal with, they have efficient cooperation partners who take responsibility for the further treatment and transportation of the many different types of solid waste that companies and citizens leave in their custody.

Impact beyond region.
Odense Environmental Centre is one of the largest and most environmentally friendly waste treatment centers in Northern Europe. The Environmental Centre covers an overall area of 110 ha and is expected to be able to accommodate 10 million m3 of waste. Its service life is expected to be around 100 years from its establishment in 1994. When the area is filled up with waste, it will be re-established as a recreational area.

Sustainability indicators



S4 implementation. Policies and best practices

Tools for/from the role of public institutions

- ✓ *The case of Navarra: Regulation+PilotosS4 (ES).* Selected as a good practice for the definition of tools, incentives, taxation and aids to promote sustainable activities.

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Profile of Best Practice

Pilotos S4

Accelerating green transition combining strategy, regulation, projects and incentives/taxation.

S4 | Navarra Nafarroa
Estrategia de Desarrollo | Garapen Estrategia

- **Type of tool:** Public Policy (role of public administration)
- **Region:** Navarra (SPAIN)
- **Version:** V2 (August 2023)
- **Author:** Daniel Mazo (SODENA)

About the Best Practice. **Origin**

History and Background.
The smart specialization strategy of Navarra (S4) defines new challenges for the region in relation with the selected thematic priorities. These challenges includes new potential activities based on Entrepreneurial Discovery Process (EDP) that can contribute to the objectives of the strategy. New niche opportunities that require research, development and investment, involving public and private sector for its implementation and success.

Understanding these opportunities and their barriers or leverage to boost them is the first step if the region wants to work on the challenges defined in their S4. With the aim of boosting and accelerating specific challenges, the Government of Navarra has designed the initiative of "Pilotos S4".

Pilotos S4

Problem to solve.
Boosting a sector requires close collaboration between public and private sector. In order to promote private investments, the regulatory framework must be clear for investors, and also public sector needs to identify the requirements and possibilities of development of the emerging subsectors.

Navarra is a rare case in the autonomous regions of Spain. As in Basque Country, the region of Navarra has full legislative power in tax matters, as well as in the inspection and collection of all taxes, and for defining new regulation on policies in different topics. Aligned to Spanish regulations, this legislative capacitive brings the opportunity to the region to create new instruments that can boost the implementation of some activities.

Promoters.
Government of Navarra is the promoter of Pilotos S4, defining new initiatives from the surveillance of the business activities located in the territory.

Coverage.
Business activities located in Navarra. Each one of the "Pilotos S4" covers a specific topic related to the priority thematic areas of S4.

ARIES4
Co-funded by the European Union

Objectives.
Boost implementation of thematic priorities of S4 oriented to sustainability with a new adhoc strategic focus.

Activities.
1. Preselection of the topics to be boosted in a specific period. For the preselection is taken into account the feasibility to implement investments based on the interest of companies and institutions (as a process of entrepreneurial discovery).
2. Analysis of information
   - Analysis of the market of the companies allocated in Navarra
   - Analysis of applicable regulation
   - Analysis on the needed incentives by companies and institution (ie: research central)
3. Design of actions for the finally selected topics:
   - Agendas/Strategies/Planning
   - Aids/subsidies/fiscality…
   - Activities
4. Analysis of outcomes and review of tools. Planning for the new period (selection of new topics or review existing topics).

Timing.
Each of the Pilotos S4 has their own timing. Also, as they can be considered a testing experience, they evolve in time depending on the outcomes.

Funding.
Some of the Pilotos S4 require specific subsidies/aid, but other could be implemented by new taxation framework or just changes in the regulation. The cost of the development of the general framework (plan/strategy) is assumed by Government of Navarra, including the analysis of regulation involved in each topic.

Management body.
The management of Pilotos S4 corresponds to the Government of Navarra, as tha main activity corresponds to the intervention of the public administration with new regulation and subsidies/aids/fiscality.

For the selection of the topics to boost in a period of time, Government of Navarra presents different alternatives to the main governance body of the S4 (the Management Committee, that involves companies, institutions, research centres, trade unions…).

Legal basis.
To create new regulation for Pilotos S4, some frameworks must be considered. First, the capacities of the region to define new regulation an its context with national regulation. Due to the relation with sustainability, the European taxonomy must be also taken into account.

The European taxonomy is a classification system of economic activities that are environmentally sustainable. This classification helps investors to know which activities contribute to the EU's climate change and sustainable development objectives. The taxonomy is based on the criteria of the European Green Pact, the Paris Agreement and the UN Sustainable Development Goals.

STRATEGY

Does a frame of reference exist? Consider whether the initiative should be framed within an existing strategy or plans. If necessary, a specific strategy or plan is generated.

REGULATION

Review of the applicable fiscal framework in order to identify potential changes that foster the implementation of the thematic priority areas.

AIDS/SUBSIDIES

Adaptation of subsidies to the promotion or development of the activity, through specific criteria or the emergence of new lines.
Subsidies for investment, R&D&I, competitiveness, entrepreneurship, etc

TAXATION

Review of the applicable fiscal framework in order to identify potential changes that favor the development of the thematic area.

Analysis of the Best Practice. **Mechanisms**

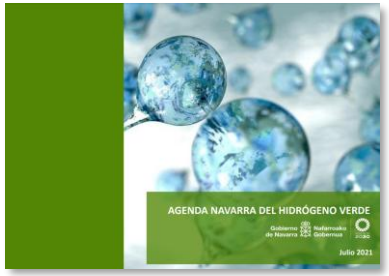
Description.

During 2022 the preselected topics for Pilotos S4 were:

1. Green hydrogen production value-chain
2. Remanufacturing of wind and photovoltaic components
3. Valorisation of agri-food by-products
4. Substitution of coke consumption (biomass)
5. Recovery of construction and demolition waste and industrial waste

The proposal of this topics was originated by the interest of several companies in investing and developing these activities in Navarra. As a process of prioritisation, the first three topics were selected as Pilotos S4 for the year 2022. Now, we explain the example of the whole process of Pilotos S4 for the first one about Green Hydrogen, aligned with the thematic priority areas of Sustainability, and Renewable Energies.

STRATEGY



After the detection of some business initiatives and the interest on the topic, the Government of Navarra took the decision to write an agenda for the Development of Green Hydrogen chain value (published June'2021).

The Agenda oriented to the identification of the challenges in which Navarra must adopt an active role, as well as the actions and measures that allow a harmonious development of the Hydrogen economy, contributing to the decarbonization of the current energy model and the mitigation of climate change.

REGULATION

One of the pillars of the agenda was to facilitate the existence of a proper regulatory and administrative framework. Following that aim, Government of Navarra developed a law for Climate change and Green transition (July 2022).

The agenda is seeking also other regulations for:

- Regulatory adaptation of environmental authorizations for hydrogen production projects.
- Declaration of Hydrogen production projects and hydrogen plants as of public utility or of foral interest.
- Promoting administrative simplification of small facilities.
- Support for the "regulatory sandbox" to facilitate the deployment of projects.
- establishment of the system of guarantees of origin.

AIDS/SUBSIDES

The Recovery and Resilience Faciility and NextGenerationEU created a framework for financing activities related with renewable energies. In line with this programs, a national call of proposals for big project around green hydrogen boosted investment and development. In Navarra two investments were financed, one oriented to a big demonstrative project for H2 production and storage (a hydrogen hub), and alkaline electrolyzers manufacturing.

Apart from investments, Navarra also has competences on R&D publishing different calls. One of them is oriented to big collaborative projects aligned with S4. In the granted projects there are activities related with R&D on new technologies for H2 production, hybridation of H2 storage and renewable energy production or new alkaline electrolyzers.

TAXATION

In order to promote investments in both sides of the chain (production and consumpltion), two new lines of deductions were defined:

- Oriented to hydrogen users: new deduction of 30% for investment in in thermal facilities using green hydrogen
- Oriented to hydrogen producers: new deduction of 15% in investments of machinery to produce green hydrogen.

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Analysis of the Best Practice. **Outcomes**

Success explanation.
As the concept of Pilotos S4 was developed in 2022, it is still soon to obtain indicators of performance of the global concept. If we get into depth to one of the Pilotos S4, it is possible to measure the impacts to the indicators defined.

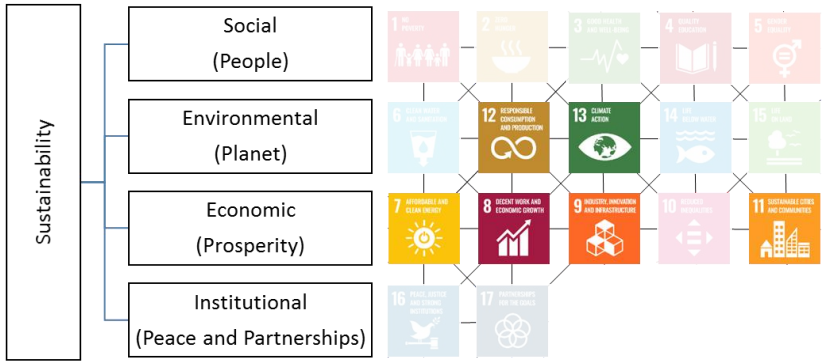
Continuing with the example of the green hydrogen drive, some opportunities have arisen through the support provided by the process followed by the 'S4 Pilots' methodology. In this way, private initiatives are being supported for the manufacture of electrolysers and a hydrogen hub is being promoted in a town in Navarra.

With the development of the roadmap for the promotion of green hydrogen, more than 60 companies have been mobilised and are actively participating in the working groups. It is, therefore, a process that is enabling the development of a new business ecosystem in Navarre, in line with the objectives of the S4.

Success factors.
The S4 pilots are based on an EDP (entrepreneurial discovery process) model. Based on public-private partnership approaches, the public administration takes on a role in which it structures its actions according to its scope of capacity. In this role, the administration proposes a strategy based on bottom-up mechanisms, establishes support regulations that act as a test bed, and proposes the economic support tools that are capable of promoting the actions included in the strategy.

In the case of Navarre, these economic instruments include both aid/subsidies and fiscal tools that make it easier for companies to take the decision to develop projects with a high degree of ambition.

Sustainability indicators



S4 implementation. Policies and best practices

Information / Communication / Education tools

The sustainability in education. (DK)+(BG)+(SE)

- ✓ *Primary education (DK).* The centre for primary education research at SDU. Best practice for sustainability education in primary schools.
- ✓ *Vocational training (ES) CENIFER.* Best practice for sustainability education in vocational training and in-company training.
- ✓ *University education (BG).* Best practice for sustainability education in university

Sustainability awareness for businesses and society

- ✓ *Gron Omstilling (DK).* Best practice for sustainability awarenesss to companies.
- ✓ *Sustainable Agenda (SE).* Best practice for awareness to companies and institutions around climate neutrality.

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Profile of Best Practice

The center for primary education research at SDU

The center encourages students in primary schools to learn about the green transition

https://www.sdu.dk/en/forskning/center-for-grundskoleforskning (Centre)
&
https://www.sdu.dk/da/nyheder/klimaforandringer-paa-skoleskemaet (Project)

Contacts for the best practices: Nikolaj Elf nfe@sdu.dk; Thomas Skovgaard tskovgaard@health.sdu.dk

- **Type of tool:** Education (Specific topic related to training and education)
- **Region:** Southern Denmark (Denmark)
- **Version:** V1 (October 2023)
- **Author:** Yi Wang and Victor Martin-Sanchez (SDU)

[1/4] About the Best Practice. **Origin**

History and Background.
Founded in 2020, the Centre for Primary and Lower Secondary Education Research is a strategic initiative at SDU. The Centre has entered close collaboration with UC Syd, UCL University College as well as other university colleges, knowledge centers and external actors with contact to the primary school.

Many parties see a pronounced need for practice-oriented research in primary and lower secondary education, for example, within subjects such as subject didactics (science, foreign language subjects, Danish, social studies, PE etc.), school management and cross-disciplinary didactic and pedagogical areas such as technology and intercultural pedagogy.

Problem to solve.
The need is due, among other things, to the reforms of primary and lower secondary school and teacher training, with new requirements for research-based teacher training. There is a political desire to strengthen the professionalism and quality of teaching through close dialogue and collaboration between research and practice.

This need for primary and lower secondary school research is currently not sufficiently covered by either the university colleges' own research units or other educational research environments in Denmark. SDU's Centre for Primary and Lower Secondary Education Research seeks to help improve these matters by pursuing the Centre's vision of doing research in, with and for the primary and lower secondary school sector.

This means that the center will both support exploratory research in primary and lower secondary school education, change-oriented research with primary and lower secondary school actors and will do so with the politically formulated goals and visions for the primary and lower secondary school sector as well as among educational researchers.

Promoters.
SDU, UC Syd (https://ucsyd.dk/), UCL University College (https://www.ucl.dk/), Professionshøjskolen Absalon (https://en.phabsalon.dk/), Københavns Professionshøjskolen (https://www.kp.dk/en/), UCN (https://www.ucn.dk/), VIA University College (https://en.via.dk/), and Aarhus University (https://international.au.dk/).

Coverage.
This educational initiative targets the primary and secondary centers who seek to strengthen the professionalism and quality of teaching through close dialogue and collaboration between research and practice

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Objectives.
The vision of the Centre for Primary and Lower Secondary Education Research is centered around conducting research within the primary and secondary school sector. Their goal is to cultivate an environment that enhances the well-being of children by promoting exceptional teaching and fostering school development.

Activities.
The main activity carried out at the center is research primarily focused on practice-oriented educational science and school research, with a special emphasis on didactics and pedagogy (i.e., research questions about teaching and learning in the formal education system at primary and lower secondary school level). In this connection, the center is essentially designed to bridge links between the formal primary and lower secondary school system – in all its complexity – and other systems. This applies, for example, to the link between research, teacher training and teaching practices in school; it applies to the link to other levels of education (both transitions from day care to primary school and from lower secondary school to upper secondary education), and it applies to the link to life outside school and what may be called the connection between informal and formal learning.

Now one of the ongoing projects is titled "Green transition in primary school" and it aims to examine the quality of teaching in the green transition in elementary schools, at the middle level (5th-6th grade).

Timing.
The Centre has currently received funding to start projects from 2020 (foundation year) to 2023, and we they will work to coordinate research environments and attract internal and external funds for research and development. The centre has received several fundings. For example,
the Centre has received a grant from the Independent Research Fund Denmark of just over DKK 6 million for the project "Writing Identity and Writing Development in 6th-7th Grade". Moreover, the Centre More than DKK 22 million for a European project that sheds light on children's cultural understanding.

Funding.
The Danish and regional governments and European funds.

Management body.
At the daily operational level, the Centre for Primary and Lower Secondary Education Research is managed by a center management. Centre management includes a representative from the three SDU faculties involving Nikolaj Elf (Professor of Educational Sciences, Department for the Study of Culture and Head of the Centre for Primary and Lower Secondary Education Research), Thomas Skovgaard (Associate Professor, Department of Sports Science and Clinical Biomechanics, Head of Centre, FIIBL. Co-Head of the Centre for Primary and Lower Secondary Education Research), and Connie Svabo (Professor, Department of Mathematics and Computer Science. Co-Head of the Centre for Primary and Lower Secondary Education Research).

Legal basis.
The center was founded in 2020 and has established a coordination council consisting of Deans Marianne Holmer, Ole Skøtt and Simon Møberg Torp (chairman) from the Faculty of Science, the Faculty of Health Sciences and the Faculty of Humanities at SDU; Alexander von Oettingen, Rector UC Syd, Jens Mejer Pedersen, Rector of UCL University College, Director Charlotte Worm, UCL and Sami Stephan Boutaibam, Director at University College Absalon .

The members of the Coordination Council discuss the Centre’s long-term plans in dialogue with the center management. In addition, the Centre is in ongoing dialogue with partners from other university colleges, universities and national knowledge centers regarding tenders, projects, etc. on joint projects and collaboration opportunities.

In the long term, the Centre plan to establish an external advisory board. No further information is provided.

[3/4] Analysis of the Best Practice. **Mechanisms**

Description.
At the moment the only ongoing project of the center is "Green transition in primary school" which aims primarily at answering the following question: How do you teach climate change and sustainable development without indoctrinating or instilling fear in students?

This question worries many elementary school teachers - and it is a question that SDU's Center for Primary School Research is trying to answer in an ongoing 3-year research project (2020-23). The wish is to produce empirically based knowledge about what is going on in teaching about the green transition, and how to organize teaching in the future accordingly.

Final Beneficiaries.
Because the center is now basically working on the "Green transition in primary school" project, the main beneficiaries are the schoolteachers and the school's sustainability curricula.

Process.
Any educational institution in the region that seeks support for their teachers to implement solid, practice-oriented research in their relevant subject areas is welcome to apply to the center for advice.

Incentive Mechanisms.
The Center for Primary Education Research at SDU does not offer financial incentives. It is a public service with the primary objective of both advising and supporting schoolteachers and educational institutions at the primary and secondary levels in implementing research-based teacher training following the reforms of primary and lower secondary schools and the teacher training scheme. For example, the educational center identifies a topic (e.g., a grand challenge related to climate change, pollution, sustainability, poverty, etc.).

Subsequently, the center, leveraging the network of researchers at SDU, assists in integrating these topics into primary or secondary teaching curricula.

Organization.
The Centre for Primary and Lower Secondary Education Research is a collaboration between educational research environments at the Faculty of Humanities, the Faculty of Health Sciences and the Faculty of Science at the University of Southern Denmark, as well as researchers and teacher educators at the vocational colleges and other institutions we collaborate with.

[4/4] Analysis of the Best Practice. **Outcomes**

Performance indicators
The center's performance indicators of success are tied to the initiation of new collaborative projects that will influence schoolteachers in delivering course materials, thereby meeting the demand for practice-oriented research in primary and lower secondary education (e.g., within subject areas such as science, foreign languages, Danish, social studies, etc.).

To date, only one project has been approved with the title "Green transition in primary schools". The time span for it is 2020-2023.

Success explanation.
The University of Southern Denmark, the platform where the Center for Primary Education Research is situated, has a strong tradition of didactic and pedagogical research and collaboration with the education sector.

This represents a strength that ensures quality in the collaborations that emerge between primary and secondary educational institutions and the center.

As a result, the center has recently intensified its project collaboration with university colleges on practice-oriented research and development.

Success factors.
The University of Southern Denmark (SDU) adopts a practice and profession-oriented approach to school research, resulting in a series of successful project implementations.

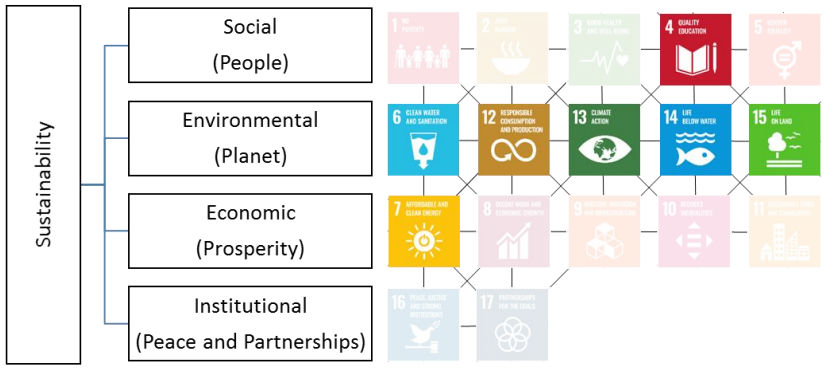
Currently, however, SDU's research does not fully leverage the potential that could be generated through capacity building and collaboration with vocational educations, as well as public and market-based actors. The Centre must strive to realize this untapped potential.

Visibility of Good Practice.
The Centre for Primary and Lower Secondary Education Research is a center without walls. It is an open and inclusive interconnected working community. The center's members will establish meeting points for this working community, bringing together the researchers, teacher trainers, teachers, and others from the relevant departments, faculties, and institutions involved.

Nevertheless, the center is administratively located at the Department for the Study of Culture, SDU. Meetings can be scheduled there. The center also uses SDU for large events. However, meetings and other major events are also hold at the partner institutions, and it is planned that partners will host projects and events, too.

Impact beyond region.
It is a local initiative with no current impact beyond the region, at least for now.

Sustainability indicators



Profile of Best Practice

CENIFER

National reference center for training and education on renewable energies and energy efficiency

https://www.cenifer.com/

- **Type of tool:** Training and education
- **Region:** Navarra (SPAIN)
- **Version:** V1 (August 2023)
- **Author:** Álvaro Iribarren (CENIFER)

About the Best Practice. **Origin**

History and Background.
CENIFER is a training institution that prepares and reskills renewable energy professionals. It offers customized and standardized courses on all the different forms of renewable energies, adapting to the needs of each professional profile. In order to fulfill its mission, CENIFER has technological equipment comparable to those of the market and maintains a permanent relationship with the companies of the sector.

Navarre, in its efforts to promote and develop renewable energies, has become a leading region in the sector. Both for its production capacity and its initiatives in urban planning, architecture, experimentation and dissemination, the region is making a decisive contribution to promoting its growth.

This institution for training in Renewable Energies provides a response to all the employment and training needs arising from this economic and environmental situation. 17 teachers with a technical profile, specialists in the field and experts in renewable energies from the company guarantee the quality of the training programmes.

Problem to solve.
With a growing business ecosystem on renewable energies, companies of Navarra require professionals with updated skills on the different technologies for renewable energy production and energy efficiency. Apart from the university education, vocational training is a must to match the capacities of workers to the business needs.

CENIFER is a training institution that covers all types of education, offering regulated training qualifications, vocational training courses for employment for both employed and unemployed workers, and advanced technical courses for trainers. Special programmes are also prepared for industry professionals from abroad.

The services of CENIFER allow to offer solutions for:
- Skilling of new professionals that want to be part of the renewable energy sector
- Upskilling of workers to new technologies and trends.
- In company courses, oriented to the requirements of businesses

Promoters.
the Government of Navarre, with the support of the Ministry of Labour and Social Affairs, and the active participation of the patron companies, created CENIFER in 1995.

Coverage.
The training is given in Navarra. They also have special programs for foreign students.

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Objectives.
CENIFER's training function is developed in permanent relationship with the companies: to be able to respond to their needs and offer contents in accordance with the development of the sector.

The actions derived from the interrelation with the business network are very varied: carrying out field and plant practices, signing agreements to hire experts to give courses in our facilities, developing projects to optimise knowledge and didactic materials, adapting machinery for teaching and research for the definition of professional profiles.

- It *attends* to and responds to the specific training demands of companies that request this type of service;
- *Signs agreements* whereby its permanent teachers are kept up to date with the latest developments and needs of the sector;
- It *recruits* market experts to fulfil its commitment to quality teaching and technological leadership;
- Manages a *job bank* that facilitates the incorporation of students and puts job seekers in contact with the companies that offer jobs;
- Adapts the sector's *machinery and technology* by requesting prototypes from manufacturers that allow optimum use of technology in classrooms and workshops;
- Organises *visits and conferences* for technicians and professionals in order to facilitate their updating;
- Designs training and standardises knowledge to adapt to new information and communication technologies (E-learning).

Activities.
At CENIFER we offer different types of training to meet the employment and professional demands generated by the socio-economic fabric of renewable energies. All of them are structured around thematic areas by types of energy or knowledge related to them. Courses are designed to suit all the agents involved in this sector: the maintainer, the manufacturer, the manager, the technician, the supplier and the producer. There are, therefore, the following training areas:

- ***Solar Thermal***. Responds to the growing demand for domestic hot water and heating installations. Courses are offered on the design, execution and maintenance of installations. Courses are also given on the architectural requirements involved.

- ***Solar Photovoltaic***. The design, installation, maintenance and monitoring of these installations are covered. Some courses cover the automation and management of the energy obtained in housing and buildings by means of solar panels.

- ***Regulation, control and industrial networks.*** Courses on computer technology and via the Internet, which enables the remote management of renewable energy installations and electrical energy in general. Profibus, Ethernet, point-to-point and wireless networks, programming using PLCs and industrial controllers, SCADA systems and graphical text panels, etc.

- ***Wind power.*** Training on wind turbines. For the production of the machines, on the quality of the electricity supply in the farms, on safety issues, for the control and maintenance of the farms, and on the management of the energy they produce.

- ***Hydroelectric.*** Along with wind power, it continues to be one of the leading sources of clean energy. The courses focus on the control of mini power plants based on hydropower.

- ***Training actions common to all areas.*** In addition, various courses are offered that are common to all areas and useful for any form of energy use. Regulations and processing of aid for renewable energies, Interpretation of Industrial Plans, Industrial Maintenance Management, Energy Efficiency, and other more technical courses on electronic and electrical issues, heating, air conditioning and industrial processes.

Timing.
Along the year.

Analysis of the Best Practice. **Mechanisms & Outcomes**

Description.
CENIFER offers different types of training

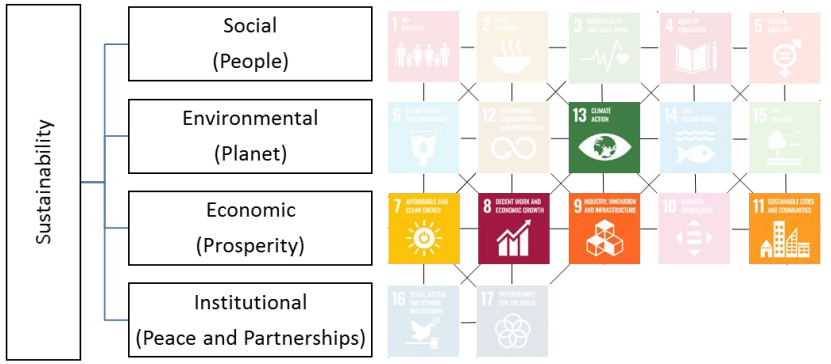
- *Courses for companies*. Courses designed to meet the specific needs of specific companies. They are given at CENIFER or are taken on site, according to needs.
- *Vocational training for employment*. In collaboration with the SNE, preferably aimed at unemployed workers.
- *Regulated training*. Two degrees: Higher Technician in Maintenance of Bioclimatic Installations in Buildings, and Higher Technician in Maintenance of Renewable Energy Industrial Installations. They include a technical training module in companies.
- *Technical training for trainers*. In collaboration with the State Public Employment Service, which finances them through the Network of National Centres, for the "Technical Updating of Trainers and Experts".
- *Training for technicians from other countries*. In cooperation or under specific demand from companies. To share, from our position as a leading region in this sector, our competences in this technology.
- *Renewable Energy Management Programme*. Designed with the aim of providing managers, executives and managers of companies in the field of Renewable Energies with the specific tools and skills necessary to develop their professional activity.

Final Beneficiaries.
The education is oriented to companies and individuals (both employed or unemployed).

Success factors.
- Close connection with a broad network of companies in the renewable energy sector
- Good infrastructures, adapted to the need of the companies and the technologies.
- Wide variety of courses, adapted to the needs of the sector
- Trainers board.
- Innovation: Experimentation and new training materials

Impact beyond region.
CENIFER takes part in several European projects, and also has receive awards to its activity.

Sustainability indicators



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Profile of Best Practice

Technical University of Gabrovo and its Tech Park (TUG)

Technical University of Gabrovo (TUG) is the center for technical education and applied research for the SMEs needs.

https://www.tugab.bg

- **Type of tool: Service to SMEs for sustainability** (role of public administration)
- **Region:** Gabrovo (Bulgaria)
- **Version:** V1 (June 2023)
- **Author:** Nikolinka Hinkova (Regional Innovation Center)
- **Contact for the Best Practice:** Plamen Tsankov (plamen@tugab.bg)

About the Best Practice. **Origin**

History and Background.
Technical University of Gabrovo has been working as a higher-education training center in machine engineering for 60 years. It is a state university with institutional accreditation established in 1964, accredited also by European Federation of National Engineering Association (FEANI) and European Society for Engineering Education.

Since 2014 its focus on research work was directed more to the needs of the regional and national SMEs and mainly to eco and energy saving systems and technologies.

Problem to solve.
The needs of the SMEs and big companies in the region have changed recently. Due to the big competition, more companies are aware that their safety is innovation, which includes digitalization and sustainable development. But companies do not have the human and financial resources and time to do the research in house.

For this, reason, lately the TUG is accepted by the companies as the place for technical education of the company specialists but also as a center for applied research and innovation for the needs of the companies.

The focus of the tool is to support the companies to be sustainable. It means to have highly educated specialists and a place to develop and then implement innovations in companies.

Promoters.
Gabrovo Municipality, Gabrovo chamber of commerce and industry, the Regional innovation center “Ambitious Gabrovo” supported the origin of this tool – TUG, the center for technical education and applied research, based on the needs of the companies.

Coverage.
The TUG prepares students from Bulgaria and other countries (Turkey, Moldova, etc.). The laboratories are used by regional and national companies.

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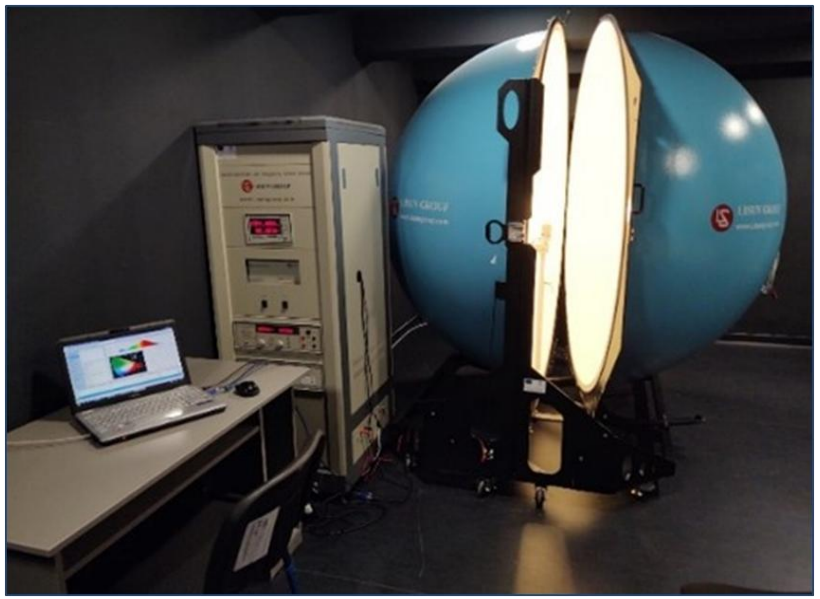
Objectives.

The aim of TUG is to prepare high quality technical engineers in the fields of Smart specialization: Mechatronics and Informatics and ICT; to support companies in their digital and green transition, to be innovative and competitive.

Activities.

- Training of students for the needs of the industry (possible training programs as per the needs of the company)
- Research work for the companies' needs
- Tests of products in planned accredited laboratories
- Collaborative projects with industry representatives for innovation, sustainability, green and digital transition.
- Training for workers: Training the employees in energy efficiency, etc.



Timing.

TUG started its activity as a Technical university in 1964 and the Tech Park opened in November 2020

Funding.

The 18 laboratories in the Technology park have been funded as results of 4 projects supported by the Operational Program "Science and education for smart growth":

- Center of Competence "Smart, mechatronic, eco and energy saving systems and technologies SMEEST
- Center of Excellence "National center of mechatronics and clean technologies|
- Center of Competence "Quantum communication, smart security and risk management systems" QUASAR
- Center of Competence "Digitalization of the economy in Big data environment"

Management body.

The day-to-day management of TUG is done by the Management team of the University.

Legal basis.

Technical university of Gabrovo and its Tech park are one legal entity under the UIC of the Technical university.

Description.

TUG as one common thing (University + Tech part) can be analyzed as a best practice for sustainaibility in terms of several factors:

- ✓ Education for sustainability – various academic programs related to sustainable technologies and practices (renewable energy, environmental engineering)
- ✓ Research and innovation – the university's Tech park serves as a space for research and innovation in technology and engineering. It encourages students, and industry professionals to collaborate on projects related to sustainability.
- ✓ Industry partnerships – transfer of knowledge and technology, fostering the implementation of sustainable practices in the region.
- ✓ Community engagement - organizing outreach programs, workshops and events that raise awareness about sustainable practices.

TUG demonstrates a holistic approach to sustainability by integrating education, research, industry collaboration, resource efficiency and community engagement. These efforts contribute to the development of a sustainable future, making it a best practice for sustainability.

Final Beneficiaries.

- ➢ Students can get their higher technical education in TUG in specialties that are needed by the industry.
- ➢ SMEs and big companies' employees can be additionally trained by TUG in programs that are preliminary settled jointly by TUG and company's management
- ➢ Companies can outsource some of their innovative and testing work in the Tech Park of the TUG

Process.

The TUG and its Tech park have implemented numbers of good practices for sustainability. They aim to achieve environmental and social sustainability within the university and the surrounding community. Some examples:

1. Renewable energy sources: TUG has made a significant investment in renewable energy sources such as solar panels.
2. Research an innovation: TUG actively is engaged in research and innovation projects focused on sustainability. This includes collaborations with local businesses to develop environmentally friendly technologies and solutions
3. Community engagement: TUG organizes various activities and events to raise awareness about sustainability among the local community. This includes workshops, seminars and outreach programs aimed at educating and inspiring people to adopt sustainable practices.
4. Social responsibility: TUG has a strong commitment to social responsibility. It actively supports local community initiatives, provide opportunities for students to be engaged in sustainable projects.

Incentive Mechanisms.

One notable practice is the establishment of a reward system for students and researchers who contribute to sustainable development projects. Another great initiative is the introduction of energy saving competitions within the university and Tech park. Furthermore, the University and its Tech par have established collaborations with external organizations and companies that are committed to sustainability. By partnering with these entities, students and researchers are provided with internships, job opportunities and research projects related to sustainable technologies and practices. This collaboration acts as a powerful incentive for individuals to engage in sustainable projects and contribute to a greener future.

Overall, these incentive mechanisms employed by the TUG and its Tech Park demonstrate best practices for sustainability. By rewarding individuals, fostering competition, creating partnerships and providing support, the TUG encourage a culture of sustainability and drive positive change in the community and beyond.

Organization.

The legal entity is Technical university of Gabrovo. The other actors, that support the TUG, are all the members of the Regional innovation center "Ambitious Gabrovo"

Analysis of the Best Practice. **Outcomes**

Performance indicators

- ✓ 17 Bachelor, 28 Master and 26 PhD specialties
- ✓ 3 faculties of: Electrical Engineering and Electronics; Mechanical and Precision Engineering and Economics
- ✓ Technical college
- ✓ Department for Language and specialized training
- ✓ Technology park, opened in November 2020 with 18 laboratories in 4 laboratory complexes:
  - Energy-saving systems and technologies for design and production of hi-tech products
  - Intelligent mechatronics measurement and control
  - Intelligent energy-saving systems and technologies
  - Electronics and Sensors

Success explanation.

Gabrovo Tech Park has been awarded as the Innovation project of the year on 08.06.2023 by the Bulgarian Project Management Awards
The 1st Tech park out of the capital Sofia that works in collaboration with the Sofia Tech Park

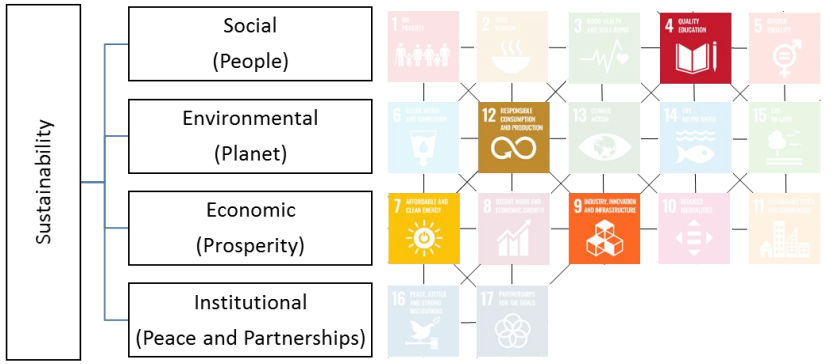
Success factors.

- ✓ Cooperation between different institutions, closer to companies, closer to citizens and with organizations related to environment care.
- ✓ Tackle eco and energy efficiency globally involved in different projects, plans and collaborations.
- ✓ Flexibility on new initiatives aligned with the eco and energy savings

Visibility of Good Practice.
There is a good communication impact between TUG, Gabrovo municipality, companies, Gabrovo Chamber of Commerce and Industry, regional authorities of the region of Gabrovo

Impact beyond region.
Participation and preparation of different projects for eco and energy efficiency, digital transformation of companies. Plans for establishment of a regional innovation valley, supported by several projects, which will make Gabrovo the center of innovations for the North Central Region in Bulgaria.

Sustainability indicators



Profile of Best Practice

Grøn omstilling

Grøn omstilling contains the latest figures for Region Southern Denmark's energy consumption and environmental footprint. In the report you will also find stories about how we work with the green transition in the Southern Denmark Region as an organisation

https://regionsyddanmark.dk/klima-og-miljo/gronne-hospitaler/redegorelsen-for-gron-omstilling

- **Type of tool:** Public Policy (role of public administration)
- **Region: Fyn** (Denmark)
- **Version:** V1 (June 2023)
- **Author:** Victor and Yi (University of Southern Denmark)

About the Best Practice. **Origin**

History and Background.
The world is changing. The consequences of climate change are no longer a future scenario, but something we already experience here and now.

According to themselves, more than a quarter of southern Danes have already experienced negative impacts from the changed climate, and if they look ahead in time, the majority have a expectation that it will get worse. It is not an experience they are alone with. All scientific forecasts indicate that the world is moving towards a warmer world with significant consequences for the climate. That means that the consequences we as southern Danes are experiencing already now will be greatly increased during this century. Human beings will be affected by higher water levels in the sea, lakes, streams and streams, we will experience far more and more violent rains and yet at the same time risk longer periods of devastating drought.

Although we cannot prevent the fact that we will experience the consequences of the damages, that has already happened, we can make an effort to reduce our impact on the climate and at the same time rust us to handle the challenges ahead. It is a global and a national task, but it is high degree also a task we must take on here in Region of Southern Denmark.

Problem to solve.
Like everyone else, Grøn Omstalling have a duty to do its part to transform Denmark into a society where the net emissions of CO2 and other greenhouse gases are zero.

In recent years, the region of Southern Denmark has focused on reducing the climate footprint of its own operations with ambitious objectives within, among other things, energy, transport, food and waste. However, these objectives cover only a small part of the region's overall climate footprint. The vast majority of the climate footprint comes from the purchase of goods and services (approx. 75%) as well as construction and maintenance (approx. 20%).

The Regional Council has therefore decided that the region's total emission of greenhouse gases must be reduced by at least 35% by 2030 compared to the level in 2020. This corresponds to around 250,000 tonnes of CO2 equivalents (CO2 equivalent).

Region Southern Denmark's annual report on Green transition follows up on the region's climate objectives and also tells about special efforts and initiatives aimed at limiting the harmful effects of the region's activities on the climate and the environment.

Promoters.
Local commune promotes the yearly report of Grøn Omstilling

Coverage.
Grøn Omstilling is a yearly publication with several topics regarding green transition in the southern denmark region. .

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Objectives.
The region works actively to reduce its own climate and environmental impact, e.g. through ambitious objectives for the region as a business set by the regional council, preparation of climate action plans for the hospitals, psychiatry, the social area and the regional house, promotion of green purchases, sustainable construction and much more.

Region Southern Denmark's climate action aims at the three goals set out in the regional development strategy "Southern Denmark of the Future":

- Reduce emissions of CO2 and othersgreenhouse gases in Region Southern Denmark.
- Transition to a more circular economy and more efficient use of resources, including raw materials.
- Reduce negative consequences of elevatedwater levels and extreme weather.

To achieve these three goals, we will collaborate with our partners on to set a political agenda and to promote a joint regional effort where it makes sense. Furthermore, as a company, we want to even reduce our own climate footprint and our resource use.

The purpose of the region's annual report on green transition is to follow up on the region's climate impact from, among other things, energy, transport, direct emissions, food, waste and procurement.

Activities.
The strategy provides several proposals for goals and efforts that can help reduce our climate footprint. But it also points to how we can deal with the effects of damage. We do this in three ways:

- We will set a political agenda – regionally and nationally – with a focus on opportunities and solutions
- We will gather Region Southern Denmark for a joint climate effort, where we are stronger together
- As a company, we will work to reduce our own climate footprint

The strategy must be seen as an invitation to collaboration across the region.

In accordance with the UN Global Goal 17, we are of the opinion that strong and committed partnerships are the way to solve it massive task, it is to restructure an entire society. Joint solutions are strong and future-proof solutions and at the same time prevent us from individually using unnecessary resources to deal with a common problem.

Timing.
We set a political agenda – regionally and nationally– with a focus on opportunities and solutions. We will put the climate on the political agenda and develop solutions in collaboration with our partners. We will support initiatives and efforts in Region Southern Denmark that have for the purpose of promoting the national 2030 objective of reducing Denmark's emission of greenhouse gases by 70%.

Funding.
It is financed/funded by local commune.

Management body.
We will invite the region's municipalities to establish a partnership that will set strategic targets and launch initiatives that ensure the green transition and creates coherence in the solutions.

Legal basis. The region's municipalities establish a partnership that will set strategic targets and launch initiatives that ensure the green transition and creates coherence in the solutions. This must be done on the basis of the framework, the Climate Action Planning Framework (CAP), which is set up in the cooperation of the C40 cities.

Analysis of the Best Practice. **Mechanisms**

Description.
Grøn Omstilling is a dissemination tool containing the latest figures for Region Southern Denmark's energy consumption and environmental footprint.

Final Beneficiaries.
The final beneficiaries include all stakeholders (i.e., citizens, companies, NGOs, universities, etc.) in the Region of Southern Denmark who contribute to the green transition.

Grøn Omstilling is a yearly report with different themes regarding green transition in the region of southern Denmark. It helps individuals and organizations increase their green visibility.

Process.
Grøn Omstilling gathers green initiatives and efforts by regional organizations and reports their activities in a yearly publication.

Incentive Mechanisms.
Grøn Omstilling as an organization can promote joint efforts in the sourthern denmark region to improve regional environmental footprint and it can even reduce its own climate footprint and resource use.

Organization.
20 Danish municipalities are already working on implementing these under the auspices of RealDania's project, DK2020. We want in cooperation with the municipalities, other southern Danish parties and the other Danes regions to take the step further and become a DK2020 region through the building of a long-term partnership, "DK2020-Region Southern Denmark".

DK2020-Region Southern Denmark means that the partnership i.a. uses the same tools for climate accounting, and that the region offers to coordinate and facilitate common needs.

Analysis of the Best Practice. **Outcomes**

Performance indicators
DGNB: DGNB is a German certification scheme (Deutsche Gesellschaft für Nach-haltiges Bauen) that is based on a holistic sustainability assessment based on 6 quality areas: Environmental quality, economic quality, social quality, technical quality, process quality and area quality. DGNB excels in particular by including overall economics, life cycle assessment and assesses the entire building's performance rather than individual parameters. The building department has set up a DGNB group with the aim of incorporating sustainability and DGNB in the region's new buildings and major conversions. The building department currently has 4 DGNB consultants, one of whom is undergoing training as a DGNB auditor.

CO2 and greenhouse gases reduction.

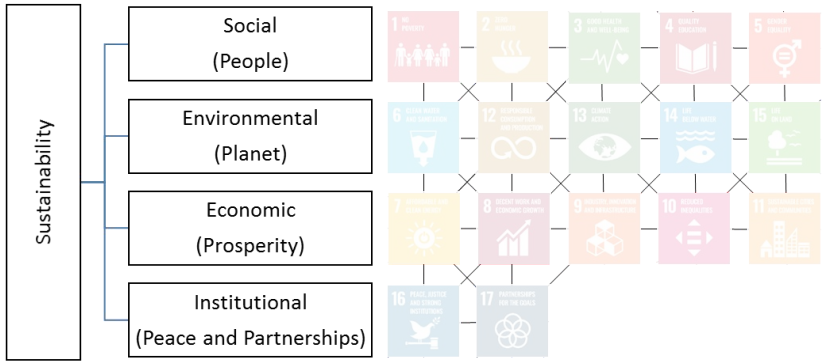
Success explanation.
Experience of beneficiaries: At OUH Odense, 13 large scanners develop lots of heat. They need to get rid of it, and this is done in an energy-saving and climate-wise way. The cooling water is used to heat patient rooms and offices.

Success factors. We will put the climate on the political agenda and develop solutions in collaboration with our partners. We will support initiatives and efforts in Region Southern Denmark that have for the purpose of promoting the national 2030 objective of reducing Denmark's emissions of greenhouse gases by 70%. We want among other work together with municipalities, utility companies and other relevant partners to promote citizens' understanding and acceptance of the need to change our society. Just like we want support the development of the necessary knowledge and the right competences for this to happen. This may involve initiatives such as the establishment of a national climate people's meeting or promotion of the circular agenda through the building of knowledge, competences and networks with relevant party

Visibility of Good Practice. Region Southern Denmark's annual report on Green transition describes the overall energy and environmental impacts that follow the region's activities. The report on Green transition follows up on the Climate Strategy's objectives for the region as a company and also tells about special efforts and initiatives that aim to limit the harmful effects of the company's activities on the climate and the external environment. In order to closely monitor the region's energy consumption and environmental footprint, a six-monthly report on the green transition is published at the same time. The half-yearly edition provides a concise overview and covers a 6-month period from January to June. The annual reporting at the turn of the year provides a more thorough review of the region's energy and environmental footprint and a closer assessment of target fulfillment of the climate strategy's goals.

Impact beyond region. The focus is primarily the region of Southern Denmark. There is no impact beyond the Funen region.

Sustainability indicators



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Profile of Best Practice

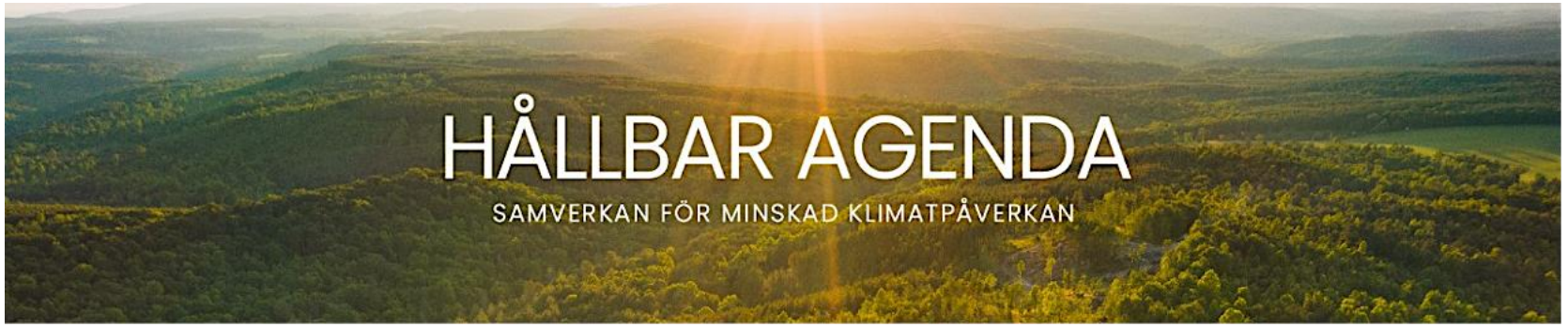
Sustainability Agenda

A network of industries and associations situated in Foshaga and Munkfors municipalities in Sweden (initiated jointly by Forshaga and Munkfors municipalities and Karlstad University), aiming at achieving climate neutrality by 2030.

https://t.ly/cmwwf

- **Type of tool:** Sustainability Network
- **Region:** Värmland (Sweden)
- **Version:** V1 (June 2023)
- **Author:** Avit Bhowmik (KARLSTAD UNIVERSITY)

About the Best Practice. **Origin**



History and Background.
Sustainability Agenda is a network of industries and associations situated in Forshaga and Munkfors municipalities in Sweden aiming at achieving rapid greenhouse gas emissions reduction. The Earth is getting warmer and the UN climate panel IPCC infers that the increase in temperature is dominantly subject to human influence, for example through carbon dioxide and other greenhouse gas emissions, which can have irreversible effects and consequences on societies. Everyone needs to do their part so that humanity can both adapt to future climatic conditions and mitigate adverse climate change, where companies, organizations and associations have a responsibility to reduce their emissions together. Article 12 of the Paris Agreement states that the parties must cooperate in taking appropriate measures to strengthen education and vocational training on climate change and increase public awareness, participation and access to information on issues related to climate change, such as carbon dioxide emissions.

EU and National Climate Goals
The EU has adopted climate targets for 2020 and 2030. The EU's total emissions must be reduced by 20 percent by 2020 and by 40 percent by 2030 compared to 1990. The European Council has also supported the goal that the EU must reduce greenhouse gas emissions by between 80-95 percent by 2050, of which at least 80 percent within the region.

The emissions of greenhouse gases from Swedish territory must be at least 85 percent lower in 2045 than the emissions were in 1990. The remaining emissions down to zero can then be achieved through so-called supplementary measures, such as absorption of carbon dioxide in forests and measures carried out in other countries. In order to reach the goal, the separation and storage of carbon dioxide of fossil origin must also be counted as a measure where reasonable alternatives are lacking.

Milestones for 2030 and 2040
The milestones towards the long-term goal include greenhouse gas emissions in the so-called non-trading sector (greenhouse gases covered by the EU's allocation of responsibilities). Greenhouse gas emissions covered by the EU emissions trading system are not included in the milestone targets.

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The milestones are:

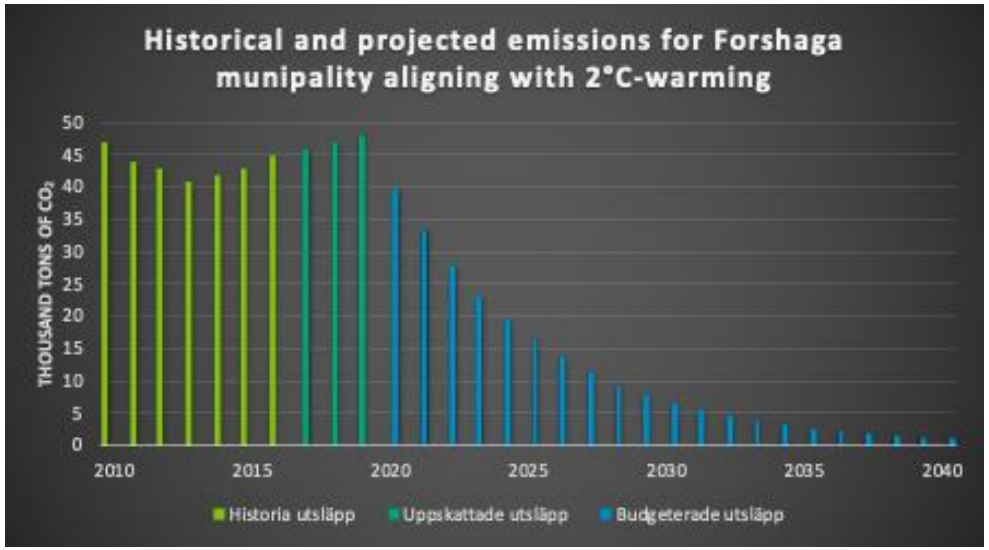
1. Emissions in 2020 must be 40 percent lower than emissions in 1990
2. Emissions in 2030 must be 63 percent lower than emissions in 1990
3. Emissions in 2040 must be 75 percent lower than emissions in 1990

Milestones for domestic transport

Emissions from domestic transport, apart from domestic flights, must be reduced by at least 70 percent by 2030 at the latest compared to 2010. The climate target for domestic transport concretizes the previous political priority that the Swedish vehicle fleet should be fossil-free by 2030." (information from the Swedish Environmental Protection Agency: http://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Klimat/Sveriges-klimatlag-och-klimatpolitische-ramverk/)

Problem to solve.

The total amount of carbon dioxide that can be released into the atmosphere to meet a certain temperature target is called the global carbon dioxide budget. In 2019, Forshaga municipality drew up a carbon dioxide budget for the entire municipality with the help of Uppsala University, which shows that a reduction in emissions needs to take place by 16% per year during 2020 – 2030 in order to achieve the Paris Agreement at the local level.



Promoters.

Broad collaboration is needed to succeed, which inspired Forshaga and Munkfors municipalities to join forces with industry and associations actors to cooperate in a common Sustainability Agenda. Actively working as a company/organization to reduce emissions not only has positive effects for the environment but also for the business. We live in a society where technical and digital solutions are becoming more and more relevant. It is high time to cope with this digital transition, to adapt to them and take advantage to transform the business models early on for a rapid sustainability transformation.

Coverage.

Working actively with industries with a strong climate ambition helps to fulfill the requirements from customers, employees and authorities. Working with climate issues, according to a study of over 200 companies in Sweden, strengthens the brand, improves customer loyalty and increases recruitment, as companies/organizations that today take a leading position in sustainability work become cornerstones of tomorrow's sustainable value chains. With this motivation, Sustainability Agenda targets industries and association located in the two municipalities and aims at creating transferable solutions.

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Objectives.
The purpose of the Sustainability Agenda is, with this as a background, to contribute to the municipalities of Forshaga and Munkfors becoming climate neutral by the year 2030 and that companies and society are better prepared for future challenges both in terms of climate and new digital and technical solutions. The participating organizations and companies contribute to this by committing to reduce their climate-affecting emissions through cooperation, communication and learning measures based on a climate perspective.

Activities.
Under the framework of Sustainability Agenda, a company or organization sign to actively work to reduce its greenhouse gas emissions, work in accordance with Agenda 2030, include climate impact in the business's budget process and sets measurable goals for this. With joint efforts together with other companies and organizations, the network works together to have more sustainable and climate-neutral municipalities in accordance with the UN's 17 global goals. The sustainability agenda is intended to be a platform for collaboration to jointly find new solutions to common challenges and objectives regarding the global goals for sustainable development.

The results and content are intended to be developed by the members and, among other things, contribute to the following:
- Expanded cooperation locally and regionally
- Collaboration nationally and internationally
- Evaluation of which environmental risks exist within the company/organization
- Develop climate goals for your own organization
- Work systematically to reduce the business' climate impact
- Contribute with experience and competence in the climate area
- Collaborate and inspire
- Collaborate with other members to achieve their own as well as the municipal geographic climate goals
- Reporting and follow-up values and key figures for relevant climate impact.

Timing.
Sustainability Agenda is set to carry out its main activities during the period of 2020-2030 and monitor and assess its own sustainability and success afterwards.

Funding.
The core funding for the network comes jointly from Forshaga and Munkfors municipalities. The meetings and workshops are co-financed by the member industries and associations and Värmland County Administrative Board. This is a Non-Profit network and and involvement in the network is voluntary.

Management body.
Project management takes place with the help of resources from Forshaga and Munkfors municipalities with participants from the environment and construction unit and business units. They must act as the spider in the web and have a process management role to create creative and effective meetings and work agendas for the participants.

Legal basis.
Energy and Climate Strategy for Värmland
Värmland's energy and climate strategy adopted in 2020 should contribute with guidance in relation to the long-term climate and energy goals that the Swedish Parliament has decided on. The strategy points out the direction towards the goals and what level of ambition is required in the regional work in order for the county to be able to contribute to the achievement of the goals. The strategy must also promote coordination in this work. The time horizon for the strategy is the same as for the national goals, i.e. until the year 2045.

Four principles that serve as starting points and guidance:
- Värmland takes responsibility
- Värmland thinks globally
- Värmland uses resources efficiently
- Värmland takes all aspects of sustainability into account.

Description.
In order for the municipalities of Forshaga and Munkfors to reach the goals set in the Paris Agreement and in Agenda 2030, cooperation is needed, and therefore the Sustainable Agenda for Forshaga and Munkfors has been created. With the forward thinking and know-how found in Forshaga and Munkfors municipalities as well as Värmland County, it aims to make efforts that make a difference and at the same time create common climate goals where public activities, companies and associations are well equipped for the climate change societies are facing.

Final Beneficiaries.
Sustainability Agenda is a non-profit network and hence, there is no financial beneficiary. Participation for members is free of costs for the first two years but demands active involvement.

Process.
Round Table Meetings
Round table meetings are thought to be the highest decision-making body for the municipalities' work with the sustainability agreement. There, management representatives from the respective member organizations must participate to hold discussions about current issues and make decisions about where the focus of the sustainability work should lie. The meetings are planned to be held twice a year.

MEMBERS Contribution
The most important criteria for membership are that members contribute with:

- Engagement in climate and environmental issues to reduce the company/organization's own emissions of climate-affecting substances, directly and throughout the value chain.
- The commitment to change the company/organization's products, services and projects so that they produce low or zero emissions or even contribute to reducing carbon dioxide from the atmosphere.
- Willingness to work with climate-driven business and operational development.
- Implement measures that contribute to Forshaga and Munkfors municipalities becoming climate neutral year 2030.
- Collaborations with other actors in society to speed up climate action.
- To adopt at least one climate challenge per year which are developed jointly in accordance with the international climate agreements, in addition to those that have already been met. Which challenges are accepted and in which areas each member can decide for himself.

Incentive Mechanisms.
Through cooperation in the network, a company or association can:

- Be visible as a forerunner in environmental and climate work and improves companies' competitiveness and increases the municipality's attractiveness.
- Achieve exchange of experience, new opportunities can be found and joint benefits.
- Provide the opportunity for a more result-driven and systematic way of working in cooperation between the members and the community to strengthen the brand and the pride of the staff for the company.
- Enables the implementation of larger, more comprehensive measures that have a greater effect when they are carried out by more actors.
- Be a common communication platform means that messages and results can be spread in a better way and include the whole community, which contributes to fulfilling Article 12 of the Paris Agreement.

Organization.
Network Steering Committee

- Forshaga municipality
- Municipality of Munkfors
- Värmland County Administrative Board

Focus Groups
Much of the work that takes place within the sustainability agreement is intended to take place in the focus groups, which will have different orientations, depending on what common challenges and goals are found for the members at the Round Table Discussions. These are drawn up by the members in dialogue with the project management group. Two or three members take a leadership role for a given focus group with the support of the project management group.

Reference Group
The reference group includes important players with expertise in various sustainability areas such as the Environmental and Safety Education at Karlstad University, the County Administrative Board in Värmland, Värmlandstrafik. The idea is that they should contribute expertise within the various focus areas and provide a more comprehensive picture of the challenges and opportunities we face.

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Performance indicators.
Exponential Roadmap Initiative (https://exponentialroadmap.org) developed a strategy for companies to be able to achieve the goals of becoming climate neutral, which is described in The 1.5 °C Business Playbook and outlines four steps that companies and organizations need to implement in their operations in order to contribute to reduced emissions. The strategy does not necessarily have to be implemented in the order they are listed, but should be based on the activity that is most favorable for the company to start with. These steps were adopted by Sustainability Agenda for performance evaluation of the companies.

Success explanation.

Step 1

First and foremost, the company's own emissions must be reduced. In order to be able to follow up and measure, the company's/organization's emissions need to be mapped. The company's energy use and emissions from heating, cooling of buildings, processes and transport are examples of areas that are good to start documenting. Also determine your base year. The base year is the year when the reduction begins and can then be used to demonstrate progress. Then set annual measurable goals and milestones and evaluate the results. Take action and update the plan every year.

Step 2

In step two, the focus is on reducing emissions in the value chains outside the company's walls. Most often, these emissions account for the company's biggest climate impact. It concerns, for example, the extraction and processing of raw materials, transport from suppliers and end use by customers, the product's lifespan and how the product can be recycled or deposited. As in step 1, a current situation must be documented, the results evaluated, actions taken and the plan updated on an annual basis, if necessary.

Step 3

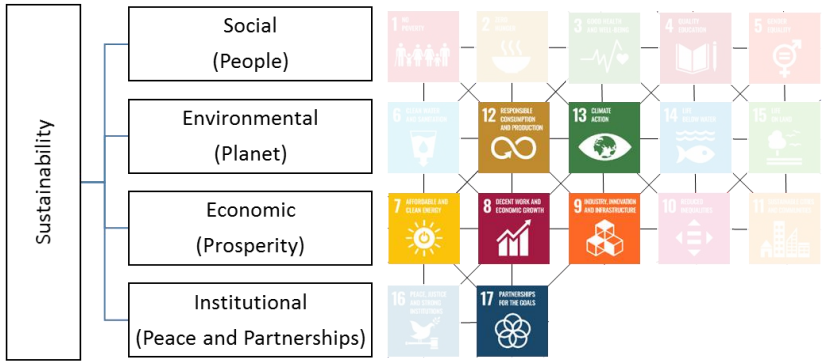
The next step involves integrating the climate issue into the company's business strategies. The strategies can, for example, be about prioritizing products and services that provide significant help in reducing the customers' climate-affecting emissions. Evaluate and analyze how the company's/organization's business value and business model are aligned with the climate goal of 1.5 °C by reviewing and updating the vision, mission statement, strategy and processes. For example, services can become digital, conversion can take place to circular business models, moving from being a product-based company to a service-based one, environmental and climate requirements can be set in the company's procurements, and customers can be encouraged to make purchase and investment decisions that are positive for the climate.

Step 4

The last step is to act as an ambassador as a company and influence society. In addition to the work you carry out in your own company, you go one step further and demonstrate climate leadership. This can be done through cooperation with suppliers and customers, joining industries that are committed to the climate issue, influencing local and national political decision makers and/or educating the company/organisation's board, management and encouraging/rewarding the employees to switch to a more sustainable lifestyle.

Success factors. The 1.5 °C Business Playbook is easy to follow and adapt, which made the tool widespread and successful.

Sustainability indicators



Visibility of Good Practice. The Business Playbook has also been adopted by big corporates such as IKEA and several other SMEs.

Impact beyond region. Exponential Roadmap Initiative and the Business Playbook are recognized and visible globally.

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S4 implementation. Policies and best practices

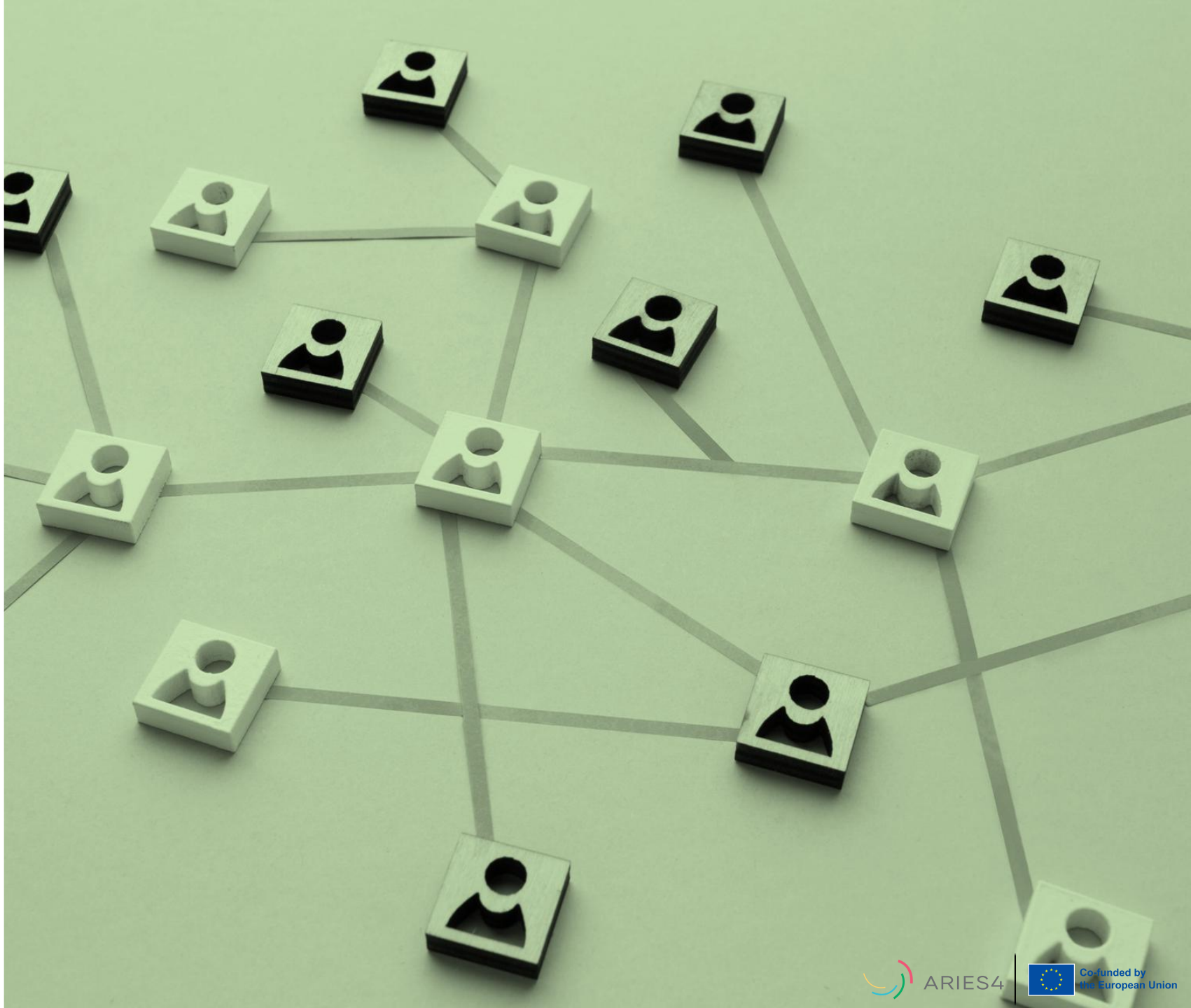
Tools for society / businesses

Business Opportunities and innovation on sustainability

- ✓ *Cein Green, business incubator. (ES).* Selected as a best practice for promoting entrepreneurship on sustainable business models.
- ✓ *CRE8 Methodology (SE).* Selected as best practice for open innovation, connecting student with real business challenges.

Business collaboration and networking on sustainability

- ✓ *Glava Energy Center (SE).* Best practice for collaboration and networking in energy sector.
- ✓ *Green Tourism of Funen (DK).* Best practice for collaboration and networking in toursims sector.
- ✓ *Gabrovo ICT (BG).* Best practice for collaboration and networking in ICT sector.



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Profile of Best Practice

Cein Green

Vertical Green strives to foster a new generation of businesses that align profitability with sustainability, seeking innovative solutions to address pressing environmental challenges.

https://green.cein.es/

CEINGREEN

- **Type of tool:** Public Policy (role of public administration)
- **Region:** Navarra (SPAIN)
- **Version:** V1 (August 2023)
- **Author:** Eva Gómara (CEIN)

About the Best Practice. **Origin**

History and Background.

Currently, the world faces a series of significant environmental and social challenges. Climate change, biodiversity loss, environmental degradation, and social inequity are among the urgent problems affecting our communities and the planet as a whole.

The unchecked growth of human activities, many of which are unsustainable, has exerted significant pressure on natural resources and ecosystems. Environmental degradation and resource overexploitation are jeopardizing ecological stability and the planet's capacity to sustain life.

In this context, the need to adopt more sustainable practices and business models has become unavoidable. Businesses, as fundamental players in the economy, have a vital role in addressing these challenges and contributing to a more resilient and equitable future.

Problem to solve.

1. **Promotion of Sustainable Solutions**
   These verticals foster the development and implementation of sustainable solutions across various sectors. They support innovation and the growth of initiatives that integrate sustainability at the core of their activities, promoting environmentally and socially responsible practices.

2. **Investment in the Future**
   Creating sustainability vertical represents an investment in the future of the planet and future generations. By supporting projects with a responsible and sustainable focus, the foundation is laid for more sustainable development and improved quality of life for all.

3. **Development of a Green Economy**
   These verticals contribute to the development of a green economy, where economic growth aligns with environmental conservation and social well-being. They stimulate job creation in sustainable sectors and empower responsible entrepreneurship.

Promoters.
This initiative is promoted by CEIN and the Government of Navarre.

Coverage.
CEIN Green is oriented to any business activities located in Navarra

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Objectives.
The main objective of Vertical Green is to support and empower sustainable startups that prioritize both economic viability and positive environmental impact.

Activities.
CEIN Green offers two kind of activities depending on the status of the business initiative:

- **Green Accelerator:** is oriented to entrepreneurs in their first steps, helping them to transform their business idea to a real company.

- **Green Scale UP:** is oriented to those green startups that want to grow

In the next slides both services are described.

Funding
CEIN Green is funded by EU and regional Funds.

Management Body
CEIN, public enterprise of Government of Navarre, is the manager of this program. This company offers also other services oriented to entrepreneurship and innovation, including facilities for business incubation.

GREEN ACCELERATOR

Green accelerator is a dynamic and intensive 4-month program that serves as a launchpad for 10 selected project ideas, transforming them into fully-fledged sustainable businesses. With a mission to foster innovation and positive environmental impact, the program brings together a network of 20 industry experts covering diverse themes crucial for project success.

Key Features:

a) *Mentorship with Industry Experts*: Participating entrepreneurs receive guidance from experienced mentors specialized in various sustainability-related fields. These mentors offer invaluable insights and expertise to nurture the growth of the projects.

b) *From Concept to Company Formation*: The Green Accelerator focuses on translating ideas into actionable plans, facilitating the transition from conceptualization to the establishment of sustainable companies with a tangible environmental impact.

c) *Comprehensive Learning Sessions:* The program offers a blend of in-person and online learning sessions, covering essential topics ranging from sustainable business models to effective environmental strategies.

d) *Individualized Support:* In addition to group sessions, participants benefit from personalized, one-on-one tutorials with both industry experts and CEIN's technical staff. This tailored approach addresses specific project needs and ensures optimal development.

By leveraging the expertise of a diverse network and providing customized support, the Green Accelerator empowers entrepreneurs to unlock their projects' full potential, fostering a thriving ecosystem of sustainable ventures poised to make a positive difference in the world.

Timing.
Green Accelerator program begins in September and concludes in December.

Process

1. *Open Call and Selection*: During 3 months, the Green Accelerator opens its doors to welcome project proposals. The call invites visionary entrepreneurs to present their sustainable ideas, aligning with the core values of environmental preservation and social responsibility.
2. *Ice Breaking and Networking*: Upon selection, the chosen participants embark on an engaging ice-breaking session, fostering a collaborative atmosphere among the cohort. This platform facilitates connections not only among the entrepreneurs but also with the experienced mentor companies that guide them throughout the program.
3. *Intensive 4-Month Journey*: The heart of the program starts with 4 months of intensive sessions and learning experiences. Industry experts, mentors, and renowned sustainable companies converge to share their wisdom, insights, and best practices with the aspiring entrepreneurs.
4. *Tailored Development*: Each participating project receives personalized support and guidance, addressing their unique needs and challenges. Individualized mentoring and specialized technical assistance from CEIN's experts ensure a well-rounded development process.

GREEN SCALE UP

Green Scale UP is a program that helps Green startups from Navarra (those that offer products or services linked to sustainability) in their growth and scaling.

The main objective is for companies to integrate sustainability into their strategy and business model as well as help them contact potential clients so that they can integrate new sustainable solutions in their companies. The program consists of 2 phases:

- *ScaleUp Green* that offers training and advice so that each company defines a roadmap to integrate sustainability into its strategy.
- *ScaleUp* Plus that helps startups to implement actions identified in the first phase.

To strengthen the connection between startups and leading companies, a Navarra Sustainability Ecosystem Meeting has been held in which leading companies participate sharing their sustainability strategies and main challenges in this area, startups offering their products and services to improve sustainability and different entities public private that offer services linked to sustainability.

Key Features:

a) *Training in sustainability* to know and understand everything that affects a company in terms of sustainability.

b) *Individualized Support:* In addition to group sessions, participants benefit from personalized, one-on-one tutorials. Thanks to these tutorials, the company analyzes the different aspects that affect it in terms of sustainability with the aim of integrating sustainability into its entire business model.

c) *Roadmap (customized report).* As a result of the program, the startup receives a personalized report with the analysis carried out

Timing

Along the year. First phase of ScaleUP Green lasts two months, and the second phase ScaleUp Plus is also 1-2 months.

Process

1. *Open Call and Selection:* During the initial months, the Green Accelerator opens its doors to welcome green startups submissions.

2. *Two-Month Journey:* The heart of the program has 5 training sessions and 4 individual coaching sessions.

3. *Tailored Development:* Each participating project receives personalized support and guidance, addressing their unique needs and challenges. Individualized mentoring and specialized technical assistance from CEIN's experts ensure a well-rounded development process.

Incentive Mechanisms.

CEIN Green's success in attracting diverse sustainable projects lies in a multi-faceted approach, blending digital outreach, impactful events, and strategic collaborations. By combining these efforts, the program has effectively created a thriving ecosystem of sustainable innovations.

Key Strategies:

- *Social Media Campaigns:* Leveraging the power of social media, the Green Accelerator has launched compelling campaigns across various platforms. Engaging content, inspiring success stories, and testimonials have sparked interest of aspiring entrepreneurs.

- *Presentation Events:* To unveil the Green Accelerator's visionary concept, a kick-off event was organized. This event showcased the program's goals, key features, and the potential for participants to make a positive impact on the planet.

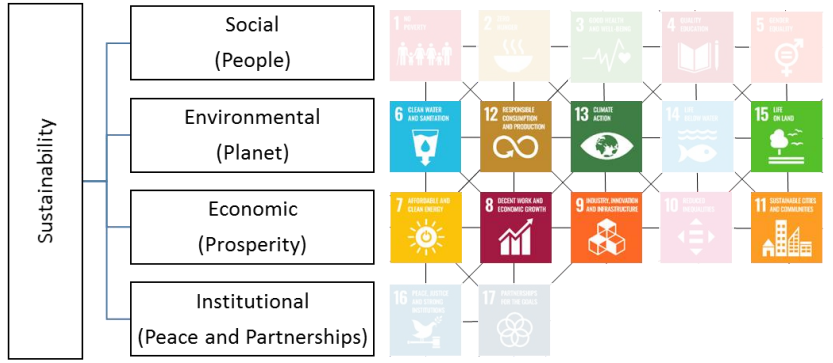
- *Strategic Collaborations:* Working hand in hand with like-minded entities that share a commitment to sustainability has been instrumental. Partnering with other organizations, businesses, and institutions that prioritize environmental stewardship has amplified the program's reach, attracting projects with a genuine passion for sustainable development.

Organization.

Throughout the program, CEIN Green has established a robust framework of collaboration with various public and private entities, united by a common goal of creating positive societal impact

Analysis of the Best Practice. **Outcomes**

Sustainability indicators



Performance indicators

The Green Accelerator's primary indicators of success revolve around the creation and establishment of sustainable enterprises and scaleup green startups.

In the last edition, the program's impact was evident as 6 out of the 9 supported projects successfully evolved into fully-fledged companies and total of 14 startups have participated in scaleup program in 2022 and 2023.

Success explanation.

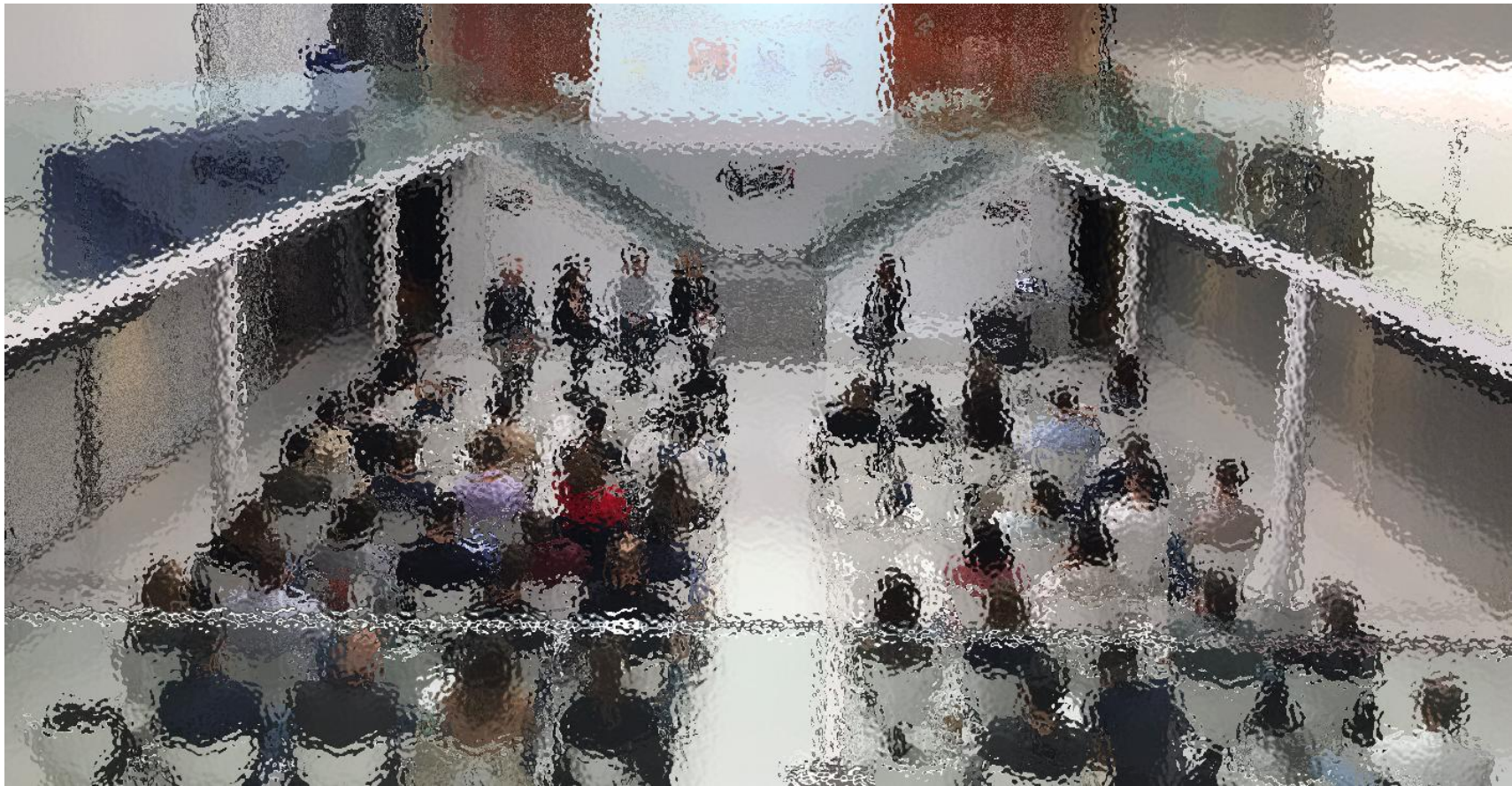
The true measure of success for CEIN Green lies in the sustained longevity of the incorporated enterprises. After one year, the program assesses whether the six startups that successfully transitioned into fully established companies are still thriving and operational.

About startups, 14 startups have worked in an action planner to be more sustainable and develop their potential with green innovation.

Success factors.

The combination of personalized guidance, constant support, and a nurturing environment within the Green Accelerator has proven to be a recipe for sustainable success.

By empowering startups with the necessary tools and knowledge, the program paves the way for their successful incorporation and long-term positive impact.



Profile of Best Practice

CRE8®

CRE8® is a model for problem-solving in a competitive form. Developed by Karlstad University, CRE8® has been successfully used to help organizations solve real life problems with the help of creative students.

https://www.kau.se/cre8

- **Type of tool:** Innovation method
- **Region:** Värmland (Sweden)
- **Version:** V1 (September2023)
- **Author:** Cindy Bråtenfeldt (Karlstad University)

About the Best Practice. **Origin**

History and Background.
CRE8® is a method for creative problem solving in competition form with a focus on innovation. Multi-disciplinary student teams aim to solve real-world problems with the most creative solutions possible. The CRE8® method was originally inspired by the TIMES competitions used by ESTIEM (the organisation of European Students of Industrial Engineering and Management). It was later refined by Innovation Office Fyrklövern (a partnership between Karlstad, Linnaeus, Mid Sweden and Örebro universities), in conjunction with the student entrepreneurship organisation Drivhuset. The forum for this collaboration was the Vinnova-funded MINT project (2015–17), the aim of which was to develop methods to stimulate students' entrepreneurial abilities.

Following the end of the MINT project, CRE8® has become Karlstad University's preferred method for addressing challenges from industry and public actors through student involvement. More than 20 CRE8® workshops have been delivered. The cases are real-life scenarios, sourced from researchers, companies or public sector organisations. Representatives from those organisations are included in the jury which assesses the student teams' solutions.

Problem to solve.
CRE8® benefits both the participating students and the task-owner (i.e., the innovator, company or public actor) who provides the real-world problem. The aim is to train the students to solve real problems while collaborating in teams as a useful experience for their future careers, and also to give them contact with employers during their studies. The employer, the task-owner, gets ideas, solutions and completely new perspectives on their challenges, but also valuable contacts with students for recruitment purposes.

Promoters.
One of the goals of the earlier MINT project was to find ways that students could assist in bringing researchers' innovative ideas forward and at the same time practice their entrepreneurial skills. The Fyrklövern universities tested different methods and concepts in parallel. They bench-marked and evaluated the methods and concepts together. CRE8® has now been further developed in an international setting through the Erasmus+ KA2 Strategic Partnership project *CRE8®Europe* (2018–21).

Coverage.
Since 2017 we have carried out CRE8® events with challenges from researchers, start-ups, SMEs, public actors, large companies and multinationals. In Sweden, CRE8® has primarily been delivered in Karlstad University's region, but also in Stockholm, where we gathered students from across the country to be a part of the competition *CRE8® the Future*. CRE8® has also been tested and improved through international deliveries in Norway, Romania and Spain during *CRE8® Europe*.

ARIES4 | Co-funded by the European Union

Objectives.
The CRE8® method seeks to develop competences among participating students which are highly valued by employers. These include pitching, communication and team-working skills. CRE8® also expands the professional networks of those students, both among their peers and the task-owners. The task-owners, meanwhile, receive fresh perspectives on their operations while raising their profile among the students, who could be potential future employees.

Activities.
Students register for the challenge individually, and the facilitator puts teams together. The task-owner and challenge are unknown to students beforehand and are revealed only on the day of the event itself. A CRE8® workshop starts with basic training on pitching and presenting techniques for the students. The task-owner then provides a real operational or strategic challenge.

This challenge is presented to multidisciplinary teams of three to five students. Throughout the day, the students are not allowed to use internet-connected devices, in order to maximise creativity. The only tools they are allowed to use are pen and paper. The teams work on their solutions during three hours, with each team in its own room. The whole team pitches to the jury and everyone in the team should participate equally, during a five-minute pitch, followed by 10 minutes for the jury to ask questions.

Timing.
A CRE8® is carried out during the course of one day.

Management body.
The Grants and Innovation Office at Karlstad University provides two facilitators. The task-owners come with at least one member and are always represented in the jury. At least ten students participate in the teams.

Legal basis.
A CRE8® event is based on trust. The task-owner's primary gain from a CRE8® event is typically the new perspectives on their organisation’s future operations identified by the students, rather than a piece of intellectual property generated by the students which could form the basis for a patent. The task-owner may use results that arise from any of the student teams’ solutions, but it is encouraged to invite these students to participate in the implementation process. If the task-owner doesn't want to use a result from a student team, that student team has the right to utilise the result in whatever way they choose.

Description.
The CRE8®method provides the task owners with new perspectives. As mentioned above, it is designed to enable student teams to develop the most creative solutions possible to a specific challenge, with a minimum of time used by them and the task owner.

The results given to the task-owner are, usually, new perspectives on their future business rather than patentable intellectual property.

The understanding of the terms *innovation* and *value* are essential in the CRE8® process, where *innovation* can be interpreted as new ways to create value and *value* can be monetary, environmental, social, human or a pure experience – most solutions include several of these.

Final Beneficiaries.
Students and task-owners which can be researchers, startups, SMEs, public actors, large companies and multinational companies.

Process.
The task-owners normally contact the Innovation Advisors at the Karlstad University Grants & Innovation Office. Together they formulate the challenge for the students to work on during the CRE8® event.

It is crucial that the task is a real problem for the task-owner and that they understand that CRE8® is a tool which is more likely to give them new perspectives on their problem, rather than providing a quick and simple solution. After that, the event is advertised to the students and they can register their interest in joining.

Incentive Mechanisms.
Students who have participated only have positive feedback about CRE8®, but it can still be challenging to get enough students to sign up, since there are many other calls on their time.

Also, during the pandemic, CRE8® events were held less frequently and in reduced form, so awareness of them was lost among the students.

We work with the student entrepreneurship organisation Drivhuset to attract students and the communication channels we use include the university website, social media and direct communication with the student associations and the Student Union.

Analysis of the Best Practice. **Outcomes**

Performance indicators
Vinnova-funded project, MINT, 2015-2017
Erasmus+ KA2 Strategic Partnership project CRE8®Europe (2018–21).
We have facilitated approximately 20 CRE8® events, involving 600 students.
The task-owners have been individual innovators (researchers), start-ups, SMEs, larger companies and multinational companies as well as public actors (regions, municipalities, public health providers)

Success example.
Järnkontoret, one of the oldest industry associations in the world, has for several years used CRE8® with the assistance of Karlstad University to support their members (e.g. Sandvik, Uddeholm, Höganäs, Outokumpu, Ovako) through *CRE8® the Future* – involving students from most universities in Sweden and some from abroad. There is a queue of companies who want to run CRE8®, but we only have the capacity to run four each year.

Success factors.
The CRE8® process is designed for multidisciplinary student teams and the fact that the teams are multidisciplinary is vital. These students often do not know each other beforehand and they are not used to working in the same way, since they come from different fields. The multidisciplinary nature of the teams forces them out of their accustomed working methods and promotes creativity.

Students are also denied access to the internet, so they can't search for any information other than that received from the task-owner. They must rely on their own abilities and dare to be creative.

Visibility of Good Practice.

Interview on Swedish radio about the project CRE8®Europe
https://sverigesradio.se/artikel/7303562

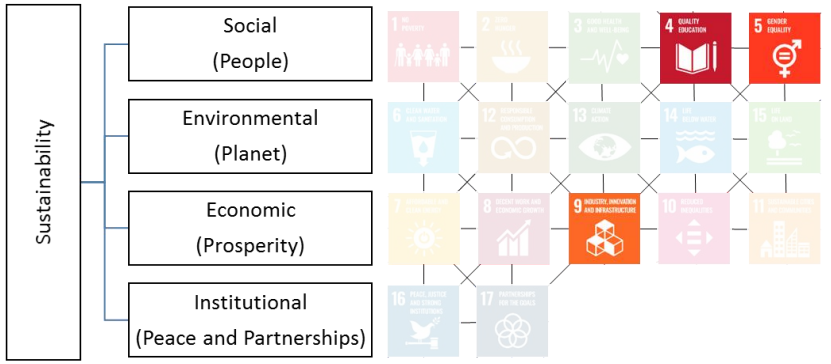
Castellon Plaza – Spanish newspaper about the project CRE8®Europe
https://castellonplaza.com/LaUJIfomentalainnovacinyemprendimientointernacionalatravsdelworkshopCRE8

https://karlstadccc.se/aktuellt/2018/aktuellt-2018-cre8-skapade-nya-ideer-2/

"Nayar Systems participate in the CRE8® Europe workshop, at the UJI" (Nayar Systems - 02/03/2020)
"Castelló: The UJI inaugurates the CRE8® international project workshop" (La Plana al día - 03/02/2020)
"The UJI inaugurates the CRE8® international project workshop" (Vive Castellón - 03/02/2020)
"La UJI inaugura el workshop del proyecto internacional CRE8®" (*Elperiodic-com 02/03/2020)*
"International Student proposes creative solutions at the depopulation of the interior of Castelló" (Diputació de Castelló - 07/03/2020)

Impact beyond region.
Erasmus+ KA2 Strategic Partnership project CRE8®Europe (2018–21).
Four national CRE8® Europe events were held (one in each partner country: Norway, Romania, Spain, Sweden). The entire student cohort attended each event. Each team comprised equal numbers of students from each partner, with a good mix of institutions and disciplines represented each team. The teams had a set time to develop and pitch their solution to a jury. The tasks were real world scenarios, sourced from partner alumni in companies or the public sector, who also joined on the jury.

Sustainability indicators



Profile of Best Practice

Glava Energy Center

As an innovation cluster, educational actor and member-driven association, Glava Energy Center works for a sustainable energy system.

https://glavaenergycenter.se/en/

- **Type of tool:** Cluster
- **Region:** Värmland (Sweden)
- **Version:** V1 (June 2023)
- **Author:** Lisa Gardt (Glava Energy Center)

About the Best Practice. **Origin**

History and Background.
The Glava Energy Center (GEC) was established in 2009 as part of an EU-funded Interreg Sweden-Norway project. It serves as a collaborative arena for innovation, learning, development, and testing in renewable energy. Today, GEC is Sweden's largest testbed, innovation center and training provider in solar energy, solar cells and energy systems. GEC operates within a broad competence network with about 80 members from various sectors including entrepreneurs, academia, industry, startups, and the public sector.

Problem to solve.
The future of electricity supply presents global challenges impacting all levels of society, from municipalities to large cities. Key challenges include:

- Complex laws and regulations, coupled with a lack of knowledge and methods to meet the growing electricity demand.
- Capacity limitations in the electricity network.
- The need for enhanced innovation in SMEs and startups.
- Limited experience with rapid changes and new forms of cooperation.
- Creation of energy communities for environmental and social sustainability.
- Lack of solar cell, module, and component factories in Europe.
- General ignorance about solar energy, energy storage, and smart grids hindering new installations.
- Shortage of skills and labor in the energy sector.
- Inadequate knowledge and methods for proactive energy leadership and organizational change.
- Underutilization of knowledgeable networks for innovation.
- Insufficient understanding of social sustainability aspects such as equality, non-discrimination, and accessibility in the transition to smart energy systems.
- Lack of strategies to mitigate residents' resistance to energy transition at the local level.

Promoters.
The Glava Energy Center emerged from the FEM project (Renewable energy, Energy efficiency, and Environment) co-financed by the EU from 2008-2011. It collaborates with Karlstad University, companies, municipalities, and regions on innovation projects. Through interregional projects, GEC has established close ties with the Solar Energy Cluster and the solar energy industry in Norway.

Coverage.
Värmland, Sweden and the Nordic region

ARIES4
Co-funded by the European Union

About the Best Practice. **Description**

Objectives.
Glava Energy Center is divided into three different strategic orientations and has the following performance targets:

Innovation
- An established incubator and accelerator within smart and sustainable energy systems.
- Further develop support process through Navigator ScaleUp for existing companies with potential and need for increased growth.
- Define and develop a workshop and lab environment for the development of innovations.
- Become an accredited testing lab.
- New innovative and sustainable products and services for the national and international market.
- Make existing and develop new testbeds available.

Training
- Develop and refine the educational offer.
- Arrange VET training and apprenticeship training.
- Start a ´Science center´ aimed at children and young people.

Energy leadership
- Better use of existing electricity and district heating networks.
- A number of new establishments for production in solar energy and smart energy systems.
- Increased production of solar electricity in Värmland.
- Improved innovation work, collaboration and knowledge exchange between universities, vocational training, public sector, business and society.
- A number of developed energy communities in Värmland.

Activities.
Networks and collaborations
- Enable interactions and knowledge dissemination through seminars, workshops, study visits and conferences.
- Offers a meeting place for stakeholders in the value chain of smart sustainable energy systems, such as smart grids, flexibility, battery storage and solar energy.

Innovation and development
- Runs innovation projects in collaboration with actors from the private, non-profit and public sectors.
- Offers and creates test beds in Värmland, the rest of Sweden and the Nordic.
- Provides access to unique measurement data for solar production and weather conditions.

Business opportunities and competitiveness
- Supports companies' competitiveness, innovativeness and visibility.
- Supports in matters of market information, financing and networking.
- Strengthens companies' energy leadership and helps find new business opportunities nationally and internationally.

Knowledge and competence development
- Arranges industry training and tailors training as well as company events in the energy field.

Timing.
Glava Energy Center started in 2009.

Funding.
Glava Energy Centers are financed via membership fees, the EU, Region Värmland and Arvika municipality.

Management body.
At Glava Energy Center, a team of about ten manages project, innovation, training, coordination, and communication. The center is linked to a diverse Advisory Board from Karlstad University, ensuring research-based operations. Additionally, a diverse board oversees operations across different areas.

Glava Energy Center

ARIES4
Co-funded by the European Union

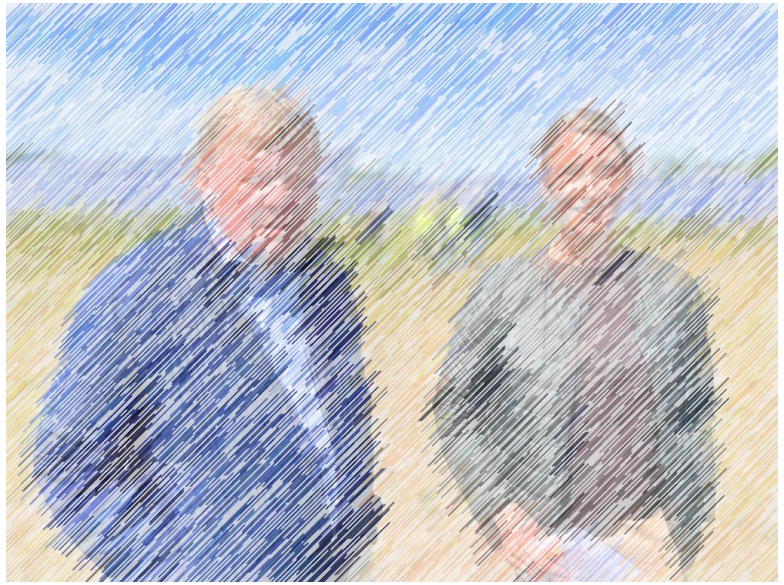
Description.
Glava Energy Center is a business cluster with three different operational branches:

Innovation
GEC offers a complete innovation environment that is accessible, known and attractive to idea carriers in smart and sustainable energy systems. GEC offers an international network with breadth and depth, a unique link between academia and business as well as a physical infrastructure for innovations and development. GEC delivers a stimulating, productive and frictionless innovation process from idea to market and growth.

Training
GEC is a competence center for actors who want to ensure quality and competence in renewable energy and energy leadership. GEC offers independent education in an inspiring environment with tailored concepts and experienced teachers. GEC's ambition is to promote curiosity, interest and knowledge among potential energy leaders of the future.

Energy leadership
GEC offers problem solving for private and public actors and provides knowledge, courage and power for proactive energy leadership. GEC provides effective tools and working methods and offers platforms for collaboration and exchange of experience. As a leading regional player, GEC strives to be a good international example with strong roots in society and business.

Final Beneficiaries.
- Small and medium-sized enterprises, SMEs:
  - which delivers products and services in the energy field.
  - who, regardless of industry, need support regarding their energy transition.
- Investors
- Public organizations:
- Municipalities
- Energy company
- Interest organizations and civil society
- Universities and schools



Process.
By establishing a contact with Glava Energy Center, interested parties can have the opportunity to, for example, test and develop an innovation, receive support in their energy transition, strengthen their general or specific competence, gain access to a broad competence network.

Glava Energy Center's support efforts are tailored and adapted to the stakeholder's needs.

Incentive Mechanisms.
Regional forums
- Membership in other organizations
- Smart specialization in Region Värmland

Physical meetings
- Fairs
- Study visit
- Conferences
- Seminars
- Outreach activities

Digital communication
- Website
- Social media channels
- Webinars

Organization.
Glava Energy Center is a membership association and the approximately 70 members control through the board the organisation's structure, focus and development.

ARIES4 | Co-funded by the European Union

Analysis of the Best Practice. **Outcomes**

Performance indicators

- The number of innovations developed.
- The number of new companies that are still active after five years.
- The number of new companies and start-ups.
- The number of test beds.
- The number of companies undergoing the incubator, accelerator and navigator process.
- The number of participants per training and webinar.
- The distribution between women and men who complete courses/training.
- The participants' evaluation of the quality of the education.
- The number of participating municipalities in projects and activities.
- The number of members and industry breadth.
- Ongoing university collaborations.
- The number of external assignments.

Success explanation.

Glava Energy Center:

- has the Nordics' largest test center for solar energy and smart sustainable energy systems.
- is the largest independent industry training provider in Sweden and Norway.
- establishes the first niche incubator within smart, sustainable energy solutions, ClimateTech and CleanTech.
- have a consensus and make a joint investment with grid companies, energy companies, decision makers in municipalities, academia, industries and SMEs as well as the non-profit sector to secure a smart and sustainable energy supply in Värmland.

Success factors.

- Climate change is largely an energy issue.
- High electricity prices have put the energy issue on the agenda for SMEs and public organizations regardless of industry.
- Major energy investments in the EU over the next 10 years.
- Repower Europe and the EU's strategy for solar energy.
- Sweden's electricity consumption is predicted to double by 2045.
- Solar energy currently accounts for 1% of Sweden's electricity production but is expected to increase to 40% by 2030.
- The solar energy industry in Sweden is growing by 60% per year (installed power).

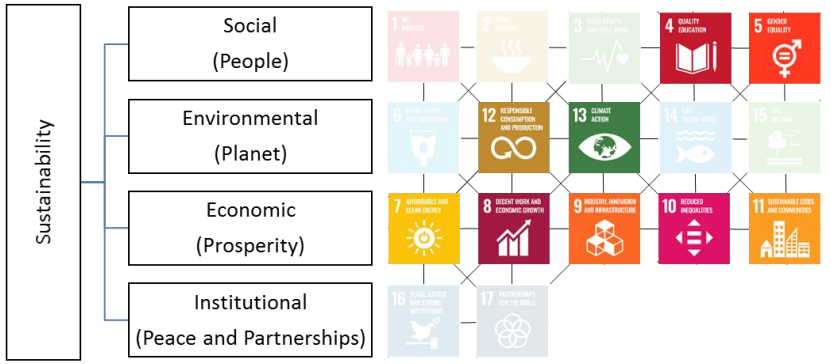
Visibility of Good Practice.

Glava Energy Center has been given the regional responsibility to be a hub for "Sustainable system solutions with solar power in center" which is one of the directions in the smart specialization strategy in Region Värmland.

Impact beyond region.

Glava Energy Center continuously receives requests for innovation projects and other projects from actors in different countries. Glava Energy Center has been training African ´change agents´ in LIFE Academy's SIDA-funded training program for over ten years.

Sustainability indicators



ARIES4
Co-funded by the European Union

Profile of Best Practice

Green tourism of Funen

Destination Fyn support your and other Funen tourism companies' journey towards a more sustainable future. We do this by plugging in sustainable partnership, talking loudly about green innovation and by offering relevant competence development.

https://www.visitfyn.dk/destination-fyn/destination-fyn

Contact for the best practice: **Tanja Bruntse Ahler** tba@destinationfyn.dk

- **Type of tool:** Business groups
- **Region**: Southern Denmark (Denmark)
- **Version:** V1 (June 2024)
- **Author:** Yi Wang (University of Southern Denmark, SDU)

About the Best Practice. **Origin**

History and Background.
Green tourism of Funen is a non-profit tourism organisation, owned by the 10 Funen municipalities and engaged by their members consisting of Funen tourism companies. Destination Fyn is certified 'Green Tourism Organisation'. It is an environmental certification for tourism organizations that make an extra effort in relation to sustainability and responsible tourism.

The Green Tourism Organization is a tool for working with sustainable tourism. The Green Tourism Organization was created by HORESTA and the Outdoor Council to support and recognize tourism destinations and organizations that make an extra effort to work with sustainability.

In order to be awarded the certification, Destination Fyn has been assessed on 140 criteria, including requirements for managerial prioritization of environmental considerations, sustainable procurement and the organisation's internal consumption of electricity, water and heat. There is also a focus on how we work to develop sustainable tourism across the destination.

Problem to solve.
Green tourism of Funen is oriented to a specific sustainability pillar – environmental pillar. More specifically, they help increase environmental sustainability skills in tourism and accelerate green transition in the tourism sector. Moreover, they offer programmes aimed at mapping and evaluating the entire lifecycle of products and services to identify areas where sustainability can be improved.

Promoters.
Funen region promoted the origin of this tool. They do this, among other things, by marketing Funen and the islands at home and abroad, developing tourism products and developing skills in the profession. All to create growth and jobs for the entire destination.

Coverage.
The Geographical coverage is Funen and Sectorial coverage is tourism industry.

ARIES4 | Co-funded by the European Union

About the Best Practice. **Description**

Objectives.
Destination Fyn/Green tourism of Funen's most important task is to support the tourism industry in Funen. They do this, among other things, by marketing Funen and the islands at home and abroad, developing tourism products and developing skills in the profession. All to create growth and jobs for the entire destination.

The vision is for Funen to be a destination that has international class in its strengths and rests on strong and sustainable cohesion.

The mission is to develop the destination, attract tourists and strengthen the profession.

Activities.

Destination Funen/Green tourism of Funen's work is based on Funen's positions of strength, which are defined in our five strategic areas of action. 1) Meetings and conferences: they work for a national and international positioning of Funen as the place where people meet. This is done through building a strong effort to attract meetings and conferences, enriching networks and professional events. 2). Events and experiences: they work for a national and international positioning of Funen as the place where people meet. This is done through building a strong effort to attract meetings and conferences, enriching networks and professional events. 3) Outdoors: they develop locally rooted experiences in nature, and we brand and market Funen and the islands as an outdoor destination for cycling, hiking and sea trout fishing. 4) Culture and city life: they boost the strategic and sustainable development of unique local experiences within urban life, culture and gastronomy. And to continue to ensure value creation between tourism and culture. The communication of our cultural heritage and history is the communication of our destination. 5) Coast and nature: they work with the development and branding of Funen and the islands as a coast and nature hotspot with one continuous stretch of coast - always with a regenerative approach to Funen's nature and the people who walk in it.

Timing.
Destination Funen's work is based on Funen's positions of strength, which are defined in our five strategic areas of action for 2023-2025.

Funding.
It is financed/funded by local commune.

Management body.
Example: coordination and participants (not beneficiaries).

Legal basis.
Danish tourism must contribute to the national goal of a 70% reduction in CO2 emissions by 2030. At the same time, we must comply with the EU's Corporate Sustainability Reporting Directive (CSRD) - a sustainability report that requires companies in the EU to report data for their impact on .a. climate, water consumption, biodiversity, pollution and waste water management throughout the value chain.

Description.
Destination Fyn/Green tourism of Funen provide guidance to regional tourism companies about environmental labels and certifications. Examples of Danish environmental certifications and labels can be found here https://www.visitfyn.dk/sites/visitfyn.com/files/2022-11/Certificeringsguide%20mini%20-%20Destination%20Fyn.pdf.

Consumer Ombudsman's guidance on the use of environmental and ethical claims, etc. and describes what you must pay attention to when you market your products with the fact that they burden the climate or the environment less than other products on the market.

Green tourism of Funen provides several courses and funding. For example, from August 2023, a course will run in Destination Fyn under the auspices of MeetDenmark, where four business tourism companies will have the opportunity to participate in an individual course with mapping and deciding on the company's value chain.

There is much to gain from the sustainability account by looking backwards in the value chain, as large parts of the CO2 footprint and environmental impact are found here. Moreover, SME:Grøn is a voucher scheme where your company can apply for grants for investments, advice or a combination of these - with the aim of progressing on the green journey towards reducing resource consumption and waste volumes.

Destination Fyn/Green tourism of Funen provides guidance to the regional tourism companies which sub-goals of the UN17 global goals are relevant for their businesses. They also help regional tourism industry learn about sharing economy, recycling, circular supply chains, etc. Moreover, they offer a mini-guide for companies with good advice on waste types, waste collection, setting up bins, communication with waste sorting, etc., and toolbox with concrete tips and knowledge on how to increase biodiversity and protect animal species in the land.

Final Beneficiaries.
The final beneficiaries include both large and small tourism companies and their customers and business partners in the region of Funen and perhaps in whole Denmark.

Process.
The service is given by providing guidance and offering several trainings/courses.

Incentive Mechanisms.
Destination Fyn/Green tourism of Funen provide guidance, advice, and grants to attract possible beneficiaries to the tool.

Organization.
The green tourism of Funen, which is run and facilitated by Destination Fyn, consists of an advisory board and a coordination group. Destination Fyn's advisory board is the primary sparring group in relation to strategic issues. The advisory board thus helps to make the overall decisions about Destination Funen's efforts and define the strategic direction for Funen tourism. The strategy group is a follow-up group consisting of representatives from the 10 municipalities and tourist agencies that stand behind Destination Fyn. The strategy group must ensure a joint strategy, knowledge sharing and coordination of joint Funen initiatives.

Analysis of the Best Practice. **Outcomes**

Performance indicators
In 2021, researchers, consultants, hotel managers and representatives of the industry organizations had taken a day to participate in Destination Fyns to debate on measurements of sustainability in the tourism industry. Participants agreed that CO2, water and energy are easier to measure than some of the "soft" elements sustainability also contains. Authenticity, emotion and collaboration are some of the elements that must be included in order to develop a destination in the long term. In addition, measuring sustainability only with profit is short-term; climate and sustainability is not a project but an ongoing concerns requiring firms to think more long-term in business development. Most of the participants agreed that all three elements (economy, people, and environment) are connected and can't be separated in sustainability.

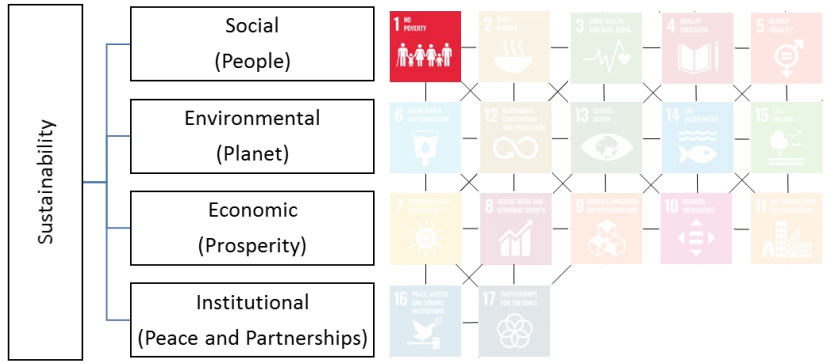
Success explanation.
Experience of beneficiaries: In August 2023 a course was organized in Destination Fyn under the auspices of MeetDenmark, where four business tourism companies had the opportunity to participate in an individual course with mapping and deciding on the company's value chain. There is much to gain from the sustainability account by looking backwards in the value chain, as large parts of the CO2 footprint and environmental impact are found here.

Success factors.
The key success factor is communication

Visibility of Good Practice.
The visibility of good practice is mainly communicated through websites and social media. In addition to this website (https://www.visitfyn.dk/destination-fyn/medlemmer/baeredygtighed-i-fynsk-turisme), which aims to make you more aware of Destination Fyn/green tourism of Funen's work and organisation, we are behind the sites such as visitfyn.dk, visitfyn.com, visitfyn.de, fynconvention.dk, and fynconvention.com which are targeted at Danish and international tourists and organizers of national and international meetings, conferences and events. Destination Fyn/Green tourism of Funen also appear on social media such as Facebook, Instagram, Youtube and Vimeo, the German profile Insel Fyn on Facebook and the profile Bike Island Fyn on Instagram.

Impact beyond region.
Destination Fyn/Green tourism of Funen supports regional tourism industry towards a more sustainable business. They do this by offering relevant skills development, putting in place sustainable partnerships and talking loudly about the green transition. Visibility in Europe is thus limited, transference of the tool (i.e., funding, training courses) to other regions in Denmark is doable.

Sustainability indicators



Profile of Best Practice

Innovation Cooperation Team (ICT)

Gabrovo ICT was established as a result of the Gabrovo innovation camp, which took place in October 2022. The main goal of the Unit is improving the communication in the ecosystem to help businesses in the region as an answer to the challenge Innovation and inclusivity for Gabrovo S3 implementation.

- **Type of tool:** Public Policy (role of public administration)
- **Region:** Gabrovo (Bulgaria)
- **Version:** V1 (June 2023)
- **Author:** Danitsa Yanakieva (Regional Innovation Center)
- **Contact for the Best Practice:** Danitsa Yanakieva (Danitsa.Yanakieva@sts.bg)

About the Best Practice. **Origin**

History and Background.

Gabrovo ICT was established as a result of the Gabrovo innovation camp, which took place in October 2022. The main goal of the Unit is improving the communication in the ecosystem to help businesses in the region as an answer to the challenge Innovation and inclusivity for Gabrovo S3 implementation.

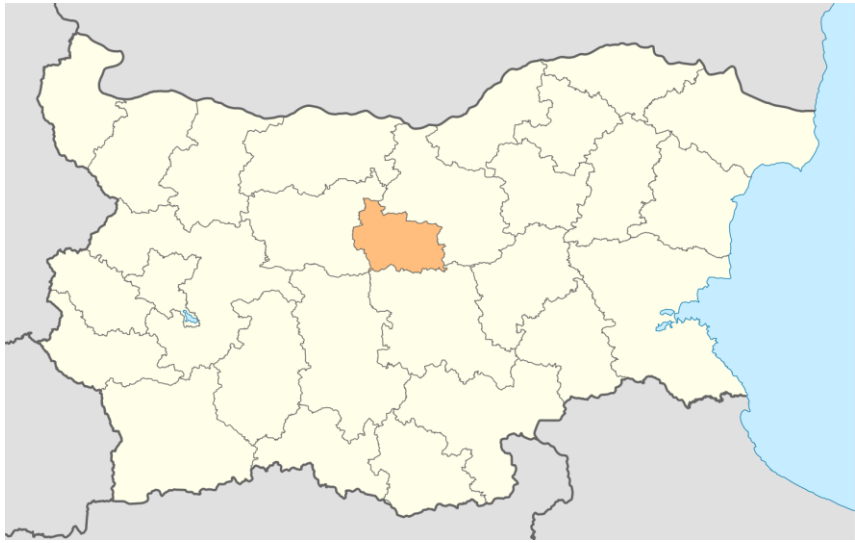
Problem to solve.

The main problem that needed solving was the communication system between the members of the ecosystem in implementing Gabrovo S3.

The aim is to increase coordination, provide expert support, increase synergies and add value to project funding. The societal impact is better cooperation between companies and R&D organizations for improvement of the innovation ecosystem and achieving the goals of Gabrovo S3.

The Unit aims to achieve joined projects and growth of innovations in the region through new products development and improvement of the technology transfer and also development and implementation of smart integrated solutions in the city and SMEs.

The Unit is created in support of Gabrovo S3 implementation and to facilitate the partnership towards Gabrovo S4.



Promoters.

The promoters of this tool are the Municipality of Gabrovo and RIC Ambitious Gabrovo. It was promoted as a support of the implementation of S3/S4+ through development of sustainable partnerships for regional innovation and implementation of joint projects between existing companies, RIC, Tech Park and other relevant stakeholders.

Coverage.

The ICT geographical coverage for now are the SMEs located in the city of Gabrovo but with an aim to cover the more territories in the future.

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Description.

The ICT is a collaborative initiative aimed at supporting the implementation of S3/S4+ through sustainable partnerships, joint projects, and coordination within the innovation ecosystem of Gabrovo.

Final Beneficiaries.

Companies and organizations involved in the Gabrovian industry, R&D organizations, educational institutions, innovative companies, and SMEs.

Process.

The ICT involves regular meetings (twice per year) to review potential innovative projects, project coordination, and S3 implementation. The team works on project coordination, knowledge sharing, and networking to promote innovation and development in the region.

Incentive Mechanisms.

The ICT aims to attract participants through a structured approach with clear rules, high-level stakeholder participation, and the engagement of young researchers.

The incentives include better cooperation, growth of innovations, and access to project funding.

Organization.

Coordination: RIC and Gabrovo Municipality

Participants:

- Dobrin Ganchev (Technical University of Gabrovo),
- Desislava Koleva (Municipality of Gabrovo),
- Todor Popov (Municipality of Gabrovo),
- Sevdalina Nenkova (Municipality of Gabrovo),
- Maria Hubanova (District administration Gabrovo),
- Galina Mihneva (Gabrovo Chamber of Commerce and Industry),
- Bogdana Vatashka (Sofia Tech Park),
- Marian Marinov (Sofia Tech Park),
- Plamena Dimitrova (Municipality of Lovech),
- Gabriela Licheva (Municipality of Lovech),
- Danitsa Yanakieva (Regional Innovation Center Ambitious Gabrovo).

Structure of **Innovation Cooperation team** :

Regional Innovation Center Ambitious Gabrovo (2)
- chair, secretary

Gabrovo Techno Park (2)
- CEO
- Researcher

Municipality of Gabrovo (2)
- Mayor
- Expert

Gabrovo Chamber of Commerce and Industry (1)
- CEO

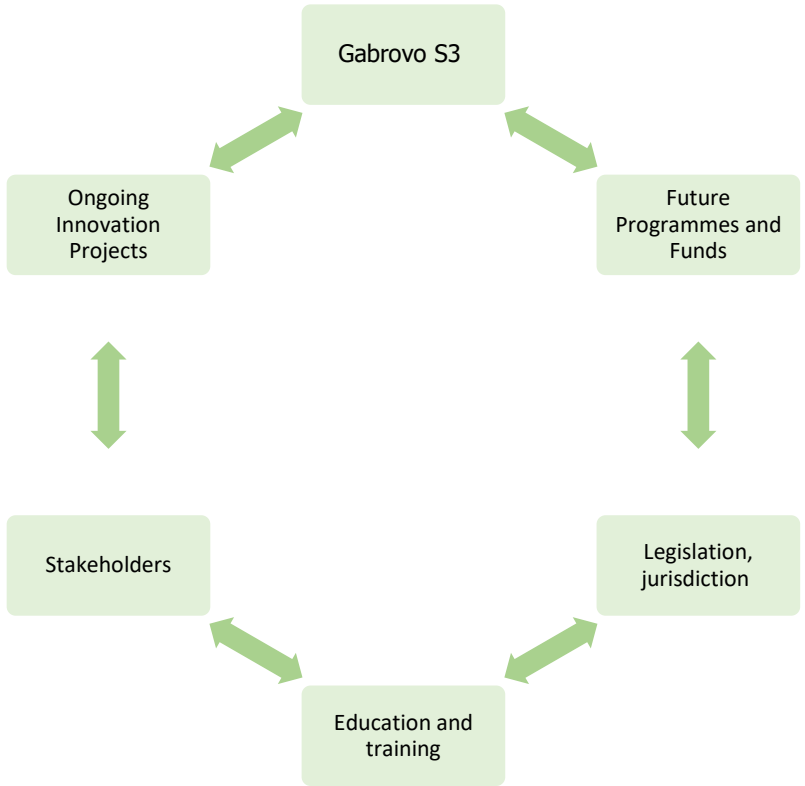
Educational institutions (2)

Innovative companies

About the Best Practice. **Description**

Objectives.

The aim is to increase coordination, provide expert support, increase synergies and add value to project funding. Also, aims to achieve joined projects and growth of innovations in the region through new products development and improvement of the technology transfer and development and implementation of smart integrated solutions in the city and SMEs.
The objectives for the tool are the Local administration and the SMEs.



Activities.

The activities include meetings for project coordination, public events for networking, and engagement with businesses and stakeholders.

Timing.

Start: October 2022
Duration: 6 years

Funding.

Scope of funding covers Structural Funds, rural development, national funding, international programs

Management body.

Coordination: RIC and Gabrovo Municipality
Participants: Technical University of Gabrovo, Municipality of Gabrovo, District administration Gabrovo, Gabrovo Chamber of Commerce and Industry, Sofia Tech Park, Municipality of Lovech

Legal basis.

Policy mix covers regional development, SMEs, RDI activities, infrastructure, Social Fund and rural development

Analysis of the Best Practice. **Outcomes**

Performance indicators

In the context of Industry and Innovation, the focus lies on assessing the added value in high-tech production, the share of high-tech industries in overall industry value, exports from these sectors, and investments in tangible assets. Additionally, there's a spotlight on innovation-driven aspects, such as the number of innovative companies and participation in the EEN network.

Within the sphere of Science and Education, attention is given to investments in research and development (R&D), the workforce engaged in R&D activities, and fostering academic growth with trained doctoral students and those in fields relevant to digital skills and energy efficiency. Furthermore, metrics cover postgraduate qualifications, collaborative efforts with Technology Parks, and the involvement in various scientific projects, including patent activities and international collaborations.

Digitization takes center stage with assessments of the digital sector's contribution to the local economy and employment within digital companies. It also tracks the adoption of technology through software procurement projects and the certification of personnel.

Lastly, in the realm of Investments to Reduce Climate Change, a focus on sustainable practices emerges, encompassing initiatives like photovoltaic system adoption, waste recycling facilities, and endeavors related to technological modernization, energy efficiency, and innovation, all aimed at minimizing environmental impact.

Success explanation.

The ICT brought together the key figures of the Gabrovo to create joined ideas for the development if the region.

Success factors.

Enhanced communication has facilitated a deeper understanding of the specific requirements and proficiencies of participants within the ecosystem. This heightened level of interaction allows us to better align with the precise needs of businesses, thus fostering a more adept comprehension of their unique demands and preferences.

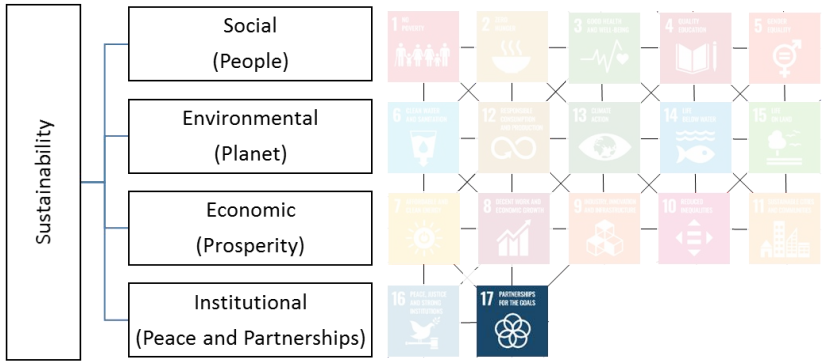
Visibility of Good Practice.

Thanks to this tool, participants in the ecosystem were able to combine their knowledge and skills to create a shared plan for the region's integrated development.

Impact beyond region.

Because the tool is in its first stage of development, we hope in the future to see the impact's visibility in Europe.

Sustainability indicators



Conclusions

This report has analyzed several good practices of the regions participating in ARIES4 that facilitate the implementation of sustainability in smart specialization strategies. The instruments analyzed are examples of actions, although the implementation of sustainability requires the use of different instruments that cover the diverse facets of the sustainability concept.

The **programming and planning** of sustainability implementation is reflected in the S4 of the regions that participate in ARIES4. Examples of smart specialization strategies have been seen at regional and municipal levels that include their own instruments for sustainability, as well as targets and monitoring systems. In the case of S4, these are cross-cutting programming and planning tools. This paper has also presented programming and planning tools with a focus on sustainability. Due to the scale of the challenge, it is necessary to deploy planning through other specific plans, with a clear directionality towards working on a specific issue. We have analysed two specific cases oriented towards the circular economy and waste management and reduction.

Undoubtedly, **the role of the administration and the public sector** are key to the implementation towards sustainability. On the one hand, the administration must be exemplary in the implementation of sustainability in its own structures, something that can also be promoted through tools such as public procurement, incorporating sustainability criteria and using innovative products with sustainable solutions. In any case, public administration has a key role to play through its own functions, defining, according to its sphere of competence, regulations and standards as well as subsidies. In their facilitating (aid, regulation) or penalising (taxes, regulations) approach, these are actions that have a clear impact on the promotion of sustainability. The document has provided examples of regions introducing instruments, regulation, aid and taxation for the promotion of initiatives linked to sustainability.

Communication is, as in any other initiative based on participation, a key element. In a broad sense, it includes concepts of dissemination, awareness raising, training, capacity building and, of course, monitoring. With regard to education and training, sustainability should be covered at all educational levels, from primary to university education. In addition to future workers, it is necessary to train and raise awareness among current workers and entrepreneurs, providing opportunities, trends and generating the necessary skills to face the sustainable transition in the business fabric. And, from the point of view of transparency and analysis of outcomes, monitoring is another key element in communication. The analysis of monitoring tools has not been included in the document, as the ARIES4 project itself will be a good practice in sustainability monitoring models.

Finally, and oriented towards the **business network**, there are those instruments aimed at facilitating the incorporation of sustainability in business or at creating new business opportunities in sustainable models. Examples include a business incubator focused on the green economy, as well as the work being done through clusters in the energy, tourism and ICT sectors.

Challenges and opportunities of S4 implementation

S4 has emerged as a promising framework to guide regional innovation policies towards a more sustainable economic and business model. While S4 holds immense potential, its implementation faces a myriad of challenges that require careful consideration and proactive measures to ensure its success. While the challenges faced in implementing S4 strategies may seem daunting, there are numerous examples of regions that have successfully navigated these obstacles and reaped the benefits of this innovative approach to regional development. By adopting a comprehensive and strategic approach, addressing institutional barriers, fostering collaboration, and embracing continuous learning and adaptation, regions can overcome the challenges and unlock the transformative potential of S4.

Challenge 1: Sustainability in S4 Thematic priorities

The S4 strategies identify and prioritize key sectors that align with a region's comparative advantages and align with emerging trends. This process requires comprehensive analysis of regional assets, strengths, and technological opportunities. The dynamic nature of innovation and the unpredictability of market shifts necessitate continuous reassessment and adaptation of the chosen sectors.

✓ Sustainability may impact on any of the selected thematic priorities at lower or higher level, and some sectors foundations could be based on sustainable concepts (ie: renewable energies).

✓ **Best practices are related with the own design of Smart Specialization strategies in combination with other more focused plans on topics directly related with sustainability.**

✓ **Challenge 2: Strengthening Innovation Ecosystems**

S3 hinges on the creation of vibrant innovation ecosystems that foster collaboration among businesses, research institutions, and policymakers. Establishing such ecosystems requires building trust, promoting open innovation, and facilitating knowledge exchange. This involves addressing institutional barriers, aligning incentives, and creating a supportive regulatory environment that encourages risk-taking and experimentation.

✓ **Best practices include policies that promote innovation (ie: research projects) or collaboration (ie: cluster policies) as tools that could foster sustainability implementation**.

Challenge 3: Fostering Entrepreneurial Dynamism

S3 aims to unleash entrepreneurial potential and create a culture of innovation within a region. This requires supporting early-stage ventures, providing access to finance, and nurturing a risk-tolerant environment. Moreover, it is crucial to develop a pipeline of skilled talent and address the challenges of talent attraction and retention.

✓ Sustainability can be an opportunity for businesses, generating new products/services, that require specific tools for financing and demand-pull creation. Sustainable business models require specific skills that may be developed during the whole education life and will require reskilling/upskilling of workforce.

✓ **Best practices are related with training and education throughout the whole working life. It may include specific activities for workers and managers.**

Challenge 4: Overcoming Institutional Rigidity

Effective implementation of S4 often requires adapting or reforming existing institutional structures and processes. This can be challenging due to inertia, resistance to change, and competing priorities among stakeholders.

✓ The role of institutions is crucial for the transformation of economic model towards a more sustainable model, not only as a policy maker, also as an early adopter of sustainable solutions and practices.

✓ **Best practices include the experimentation of new policies and sandboxes. These instruments could facilitate changes in structures and EDP.**

Challenge 5: Ensuring Data-Driven Decision-Making

S3 thrives on evidence-based decision-making, requiring access to reliable and up-to-date data on regional economic indicators, innovation trends, and stakeholder needs. However, data availability and quality can vary across regions, posing challenges in conducting rigorous analysis and informing policy interventions.

✓ Monitoring sustainability is fundamental as a tool on analysis, prospection and benchmark. Comparison between regions could be a tool to detect 'first-of-the-class' regions in the implementations of sustainability. .

✓ **Best practices are related with the use of monitoring tools at different levels: macro-monitoring (regional indicators, S4 indicators, and sectorial indicators) and micro-monitoring (specific tools to monitor sustainability in company, or more adapted to a specific sector).**

Challenge 6: Adapting to Global and Technological Disruptions

In today's rapidly changing world, regions need to be agile and adaptable to respond to external shocks (ie: new regulations) and technological disruptions. This requires continuous monitoring of global trends, investing in skills development, and fostering a culture of innovation and resilience.

✓ **Best practices include tools for Information, surveillance, technology advisory and innovation adoptions. These tools must be frequently offered to companies, as sustainability can be a continuous improvement model.**

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