

SYMBI Activity A5: EU Green Deal and Circular Economy Action Plan related funding mechanisms for promoting industrial symbiosis and circular economy



SYMBI Project
5th Interreg Europe Call 2022

SYMBI – Industrial Symbiosis
for Regional Sustainable
Growth and a Resource
Efficient Circular Economy

Häme University of Applied Sciences
& Regional Council of Häme

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EXECUTIVE SUMMARY

This report is part of SYMBI (Industrial Symbiosis for Regional Sustainable Growth and A Resource Efficient Circular Economy) project, realised under the “5th call for additional activities” (active during years 2021-2022). This lessons learned report presents the findings of the SYMBI project activity A5 “EU Green Deal and Circular Economy Action Plan related funding mechanisms for promoting industrial symbiosis and circular economy”. The aim of this activity is to identify good practises regarding industrial symbiosis (IS) and circular economy (CE) and their funding.

One of the main objectives of the SYMBI project has been to identify enabling and driving factors for the formation of industrial symbiosis. Funding is an essential enabler of industrial symbiosis practices. During the SYMBI project extension the consortium conducted a peer review study and a workshop about how different funding schemes are used to support industrial symbiosis and if there is a linkage to EU Green Deal and Circular Economy Action Plan (CEAP). At EU level, EU Green Deal and the Circular Economy Action Plan are considered perhaps the main tools when it comes to advancing and supporting circular economy and industrial symbiosis.

During the study SYMBI partners identified which kind of funding instruments are used to fund successful CE and moreover IS projects and initiatives. The focus of the activity was in collecting information about different funding instruments the partner countries have used to fund CE and IS activities and to estimate the success of the good practices identified. Each partner identified 1-2 good national/regional practises and described their link to EU Green Deal and/or CEAP and elaborated the funding that had enabled the practise. All together 11 practises were identified. Most of the cases were funded through public funding (6/11) but also companies own capital investment (3/11) and joint public private funding (2/11) had been utilized.

SYMBI project aims to build regional capacity and increase regional development by exchanging of experiences and information. Finding good practices that could potentially be learned and transferred from one region to another is one of the key elements of Interreg Europe projects. As an output of this activity four (4) good practices were identified based on their high potential to be transferred also to other regions. In addition, four (4) good practices were identified based on their impact on the environment and economy and compliance with EU Circular Economy Action Plan.

1 SYMBI partnership

In the context of the Interreg Europe 5th call, the SYMBI project brings together nine partners in total, from seven Member States (Spain, Poland, Italy, Slovenia, Greece, Hungary, and Finland).

Table 1: The SYMBI partnership under the Interreg Europe 5th call for additional activities

Country	Partner organisation
	Foundation FUNDECYT Scientific and Technological Park of Extremadura (FUNDECYT)
	The Malopolska Region (MALOPOLSKA)
	Chamber of Commerce of Molise (CoC-Molise)
	Government Office for Development and European Cohesion Policy (SVRK)
	Regional Development Agency of the Ljubljana Urban Region (RDA-LUR)
	Pannon Novum West-Transdanubian Regional Innovation Non-Profit Ltd (PANOV)
	Municipality of Kozani, Development and Planning Bureau (KOZANI)
	Regional Council of Häme (HÄME)
	Häme University of Applied Sciences Ltd (HAMK)

2 Thematic background for the funding instruments for European Green Deal and Circular Economy Action Plan

The European Union and the European Commission have multiple plans to overcome the challenges caused by climate change and environmental degradation. European Green Deal and Europe's growth and resilience strategy are among the key plan of actions to achieve these goals. Circular economy is seen as a way to bring environmental and economic benefits together and thus has been a long-term goal of the European Commission. Different funding schemes and instruments play an essential role in implementing these strategies. Below are listed the main plans, policies and instruments that are designed to contribute to the EU's green transition and therefore also enhance circular economy.

2.1 NextGenerationEU recovery plan

NextGenerationEU (NGEU) is a temporary instrument to boost EU's recovery from the pandemic and improve the economy. A key instrument under the NGEU is the Recovery and Resilience Facility which allows the Commission to raise funds to help Member States implement reforms and investments that are in line with the EU's priorities. EU countries must devote at least 37% of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. Country specific Recovery and resilience plans can be found from: https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en (European commission, n.d.-a)

2.2 EU Cohesion policy

EU Cohesion policy is a regional policy instrument to improve EU's economic well-being and to level and avoid regional disparities. The Policy helps EU countries, regions, local governments, and cities to implement large investments that contribute to the European Green Deal. All EU member states must devote at least 30 % of what they receive from the European Regional Development Fund to these priorities. (European commission, n.d.-a)

2.3 Mobilising private investments

The EU budget alone are not enough to achieve the goals of the green transition. The Commission aims to boost private sector investment in green and sustainable projects. One of the ways to increase investments in green and sustainable projects through private investments is the EU taxonomy classification. The EU taxonomy is a classification system to support sustainable financing through a list of environmentally sustainable economic activities. The taxonomy aims at providing companies, investors, and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable. (European Commission, n.d.-c)

2.4 European Green Deal

The European Green Deal is a set of policy initiatives by the European Commission with the aim to make Europe the first climate-neutral continent by 2050. The Deal was approved 2020 and it consists of measures and actions to reduce greenhouse gas emissions, adapt to the impacts of climate change and to make Europe a climate resilient society. In addition, the initiative comprises of various policy initiatives in areas such as agriculture to energy efficiency, clean transport, and the circular economy, to reach the increased European Union's 2030 climate and environmental goals. The EU Green Deal is Europe's roadmap for more sustainable economy. The Green Deal will be mobilized through Direct EU funding and support to initiatives triggered by EU budget. (European Commission, n.d.-d)

2.5 The European Green Deal Investment Plan and The Just Transition Mechanism

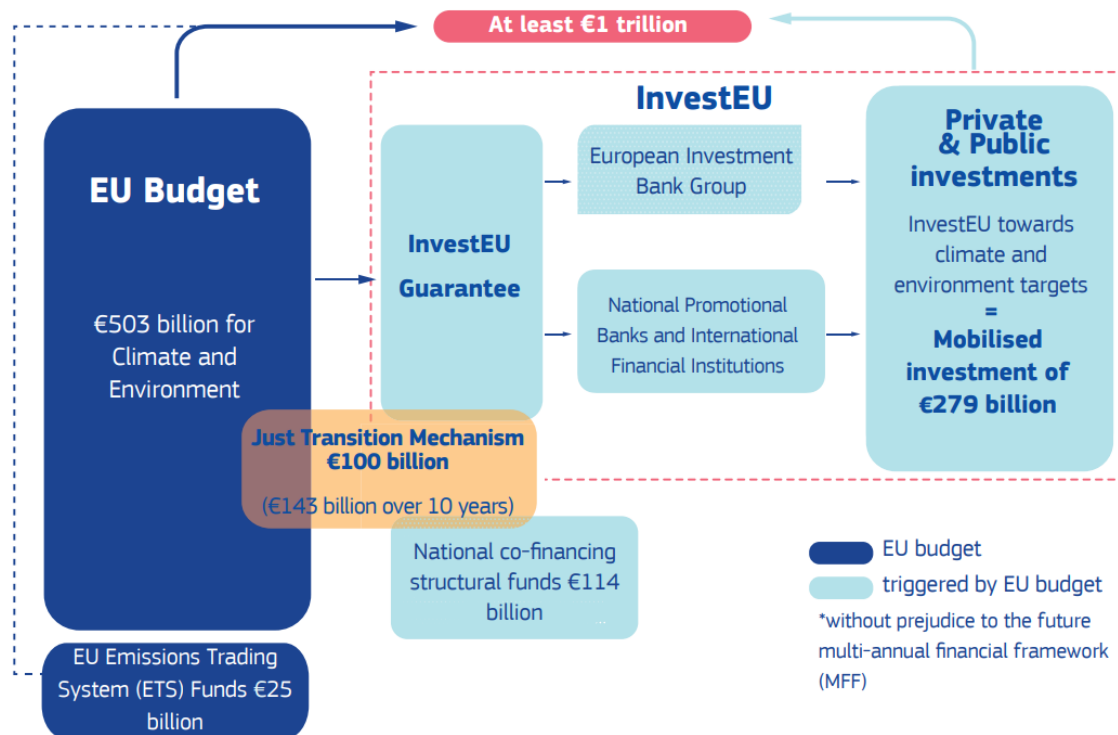
The European Green Deal Investment Plan (EGDIP), also referred to as Sustainable Europe Investment Plan (SEIP), is the investment plan to support and execute the Green Deal. The plan is set to mobilise at least 1 trillion euros in sustainable investments over the course of 10 years. A set of measures will be undertaken to achieve this goal, they include:

- capital from EU and national budgets,
- public and private investments,
- additional measures to facilitate and boost green public and private investment,
- attractive investment conditions,

- technical assistance to help investors in selecting sustainable projects. (European commission, n.d.-a)

The European Green Deal Investment Plan includes the Just Transition Mechanism, which focuses on ensuring a fair and just transition to a green economy, also known as the green transition. The Just Transition Mechanism will mobilise at least 100 billion euros in investments over the period 2021-2027 to support workers and citizens of the regions most impacted by the transition, which are territories in the EU that are currently hosting CO₂-intensive industries and are thus most affected by the transition. (European Commission, n.d.-e)

WHERE WILL THE MONEY COME FROM?



*The numbers shown here are net of any overlaps between climate, environmental and Just Transition Mechanism objectives.

Picture 1: The European Green Deal Investment Plan of mobilizing at least 1 trillion of investments over the next decade consist of 25% of all European Union funding for climate measures, 30 % of InvestEU to projects that fight climate change and stimulating green investments with support from the EIB (European Investment Bank) Group. (European commission, 2020)

2.6 EU Circular Economy Action Plan

The EU Circular Economy Action plan (CEAP) is part of the European Green Deal. The action plan describes EU's transition to a circular economy through initiatives along the life cycle of products. The plan targets legislative and non-legislative measures on how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims at ensuring that waste is prevented, and the resources used are kept in the EU economy for as long as possible. The CEAP describes a sustainable production policy framework and plans to enhance waste policies and secondary raw material markets. The plan focuses on the sectors that use most resources and where the potential for circularity is high. Key product value chains specified in the Circular Economy Action Plan are:

- Electronics and ICT,
- Batteries and vehicles,
- Packaging,
- Plastics,
- Textiles,
- Construction and buildings,
- Food, water and nutrients. (European Commission, n.d.-f).

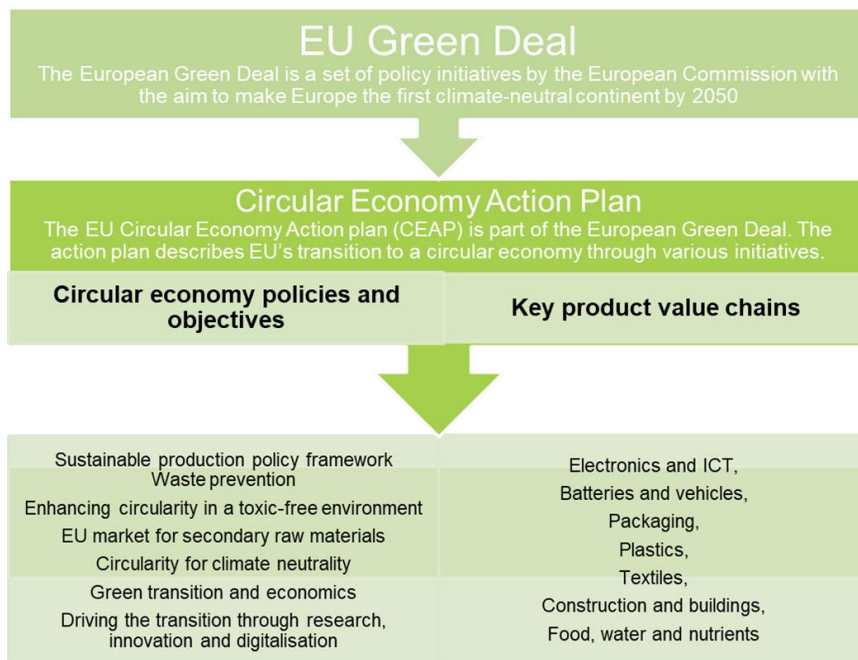


Table 2 The EU Circular Economy Action plan (CEAP) is part of the European Green Deal. The action plan describes EU's transition to a circular economy through various initiatives.

3 Data collection and peer-review process

The aim of the activity was to collect and exchange good practices on how to build synergetic actions with circular EU instruments, to prescribe funding mechanisms for promoting industrial symbiosis as a recovery tool. This was done by collecting general information about national implementation of The Recovery and Resilience Facility instrument and European Regional Development Fund. In addition to this, each SYMBI partner identified 1-2 national or regional good practices that have been funded through different schemes. The partners that come from the same country were advised to coordinate and consult each other to avoid repetitions and therefore could do the activity jointly.

3.1 Data collection methods

SYMBI partners were advised to conduct the activity by desk research and/or consulting relevant national or regional experts. The information was collected during spring 2022 through a Webropol survey created by HAMK (Annex 1). The activity consists of three main aims:

1. Collect general information about the ways each SYMBI partner country or region is planning to mobilize funding allocated to green transition and in particular circular economy (CE) and IS through the two EU funding schemes. And to explain if CE and/or IS constitute to these national schemes. The two EU funding schemes are:
 - a. The Recovery and Resilience Facility instrument (EU countries must devote at least 37 % of the financing they receive under the Recovery and Resilience Facility to investments and reforms that support climate objectives)
 - b. The EU Cohesion Policy (EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities)
2. Identify 1-2 good practices per SYMBI partner, for example:
 - a. a good practice that is funded mainly through public funding (any portion of the funding being public)
 - b. a good practice that is funded through private funding (any portion of the funding being private)
3. Evaluate the success of the good practices collected
 - a. Evaluation scale from 1 - low economic impact to 5 - high (positive) economic impact

- b. Evaluation scale from 1 - low environmental impact to 5 – high (positive) environmental impact.

The aim of the activity was to identify which kind of funding instruments are used to fund successful CE and moreover IS projects and initiatives. The focus of the activity was in collecting information about different funding instruments the partner countries have used to fund CE and IS activities and to estimate the success of the good practices identified. The success of the practises was evaluated by economic and environmental impact. The aim was to identify what kind of funding instruments have created the most successful projects or initiatives.

3.2 Evaluation methodology of the good practices

The success of the good practices was evaluated through the effectiveness and impact of the practice in five main levels:

1. Economic impact
 - a. for example, reduction in waste management costs or production or procurement costs. Increase in employment.
 - b. Evaluation scale from 1 - low economic impact to 5 – high (positive) economic impact.
2. Environmental impact
 - a. for example, reduction of CO₂ or other emissions in production, logistics of other parts of the value chain. Replacing virgin raw materials with secondary raw materials. Reducing the amount of waste.
 - b. Evaluation scale from 1 - low environmental impact to 5 – high (positive) environmental impact.
3. Extent of the impact
 - a. Organisational/regional/national or international level
 - b. Continuation of the practice after the funding
4. General description of the success of the practice
 - a. Scoring the level of the impact and justification of answers.
5. How well the practice is in line with the objectives of the Circular Economy Action Plan and Green Deal.
 - a. Assessed through to which key product value chains listed in the CEAP, the practise related to:
 - i. Electronics and ICT

- ii. Batteries and vehicles
 - iii. Packaging
 - iv. Plastics
 - v. Textiles
 - vi. Construction and buildings
 - vii. Food water and nutrients.
- b. Open ended justification on how the practise related to EU Green deal and/or CEAP.

3.3 Peer-review process

In addition to partners own evaluation of the good practises they selected. The practises were also evaluation through peer-review. All partners evaluated all practises, so all practises were evaluated seven times. The peer review process was conducted by a Webropol survey (Annex 2). The peer-review consist of the evaluation of:

1. Economic and environmental impact
2. Transferability of the good practise
 - a. If a similar practise already exists in the region/country
 - b. The transferability to the region/country
 - c. Interest of the good practise
3. Transferability of the financial instruments
 - a. If a similar financial instrument already exists in the region/country
 - b. The transferability of the financial instrument to the region/country
 - c. Interest of the financial instrument
4. Compliance with EU Green Deal and/or Circular Economy Action Plan
 - a. Evaluation scale from 1 – not at all in line with to 5 – as well as possible in line with EU Green Deal and/or Circular Economy Action Plan.

Table 3: The rating system

Criterion – Definition	Scale	Evaluation Rate	Minimum Points	Maximum Points
Economic impact	1-5	1- low economic impact 5- high economic impact	1	5
Environmental impact	1-5	1- low environmental impact 5- high environmental impact	1	5
Transferability	1-5	1- Low transferability potential 5- High transferability potential	1	5
Compliance with EU Green Deal and/or Circular Economy Action Plan objectives	1-5	1- Not at all in line with the objectives 5- As well as possible in line with the objectives	1	5

4 Analysis of data on good practises

During the activity 11 practises were identified. The full presentation of the practises can be found from annexes 3-13 and the summary list from the grid below. The grid presents the name of the good practise, the country from which they originate, the description of the funding instrument and the primary funding body, the scope (regional/ national/ international) and to which key value chains of the CEAP they are linked to.

1. Design, Financing, Construction, Maintenance and Operation of Infrastructure of the Integrated Waste Management System (IWMS) of the Region of Western Macedonia with PPP (Greece)			
Funding instrument	Primary funding	Scope	CEAP
<ul style="list-style-type: none"> - The European Investment Bank (EUR 13 million) - The Jessica financial instrument (EUR 13 million) - an amount that will be returned to Western Macedonia for reinvestment - The National Bank of Greece (EUR 6 million) - Equity of 17 million euros of the Private Partnership Agency EPADYM SA 	Joint public-private funding	Regional level	Packaging, Plastics, Textiles, Food, water and nutrients
2. Rehabilitation of an abandoned quarry in the Region of Attica (Greece)			
Funding instrument	Primary funding	Scope	CEAP
Private funds. The initial funds needed were from company's own capital and bank loans. After starting to provide services, operating expenses and loan payback is achieved by a specific fee/ton of waste for the accepted waste, set by the alternative management systems responsible for the rehabilitation.	Company's own capital investment, private investment	Regional level	Construction and buildings
3. Circular Economy Technology Platform (Hungary)			
Funding instrument	Primary funding	Scope	CEAP
100 % of the initial seed funding was provided through the project (Project ID: 2020-2.1.1-ED-2020-00117), Circular Economy Science Park	National public funding	National public funding	Electronics and ICT, Construction

Phase I. – Planning phase”, funded by Ministry of Technology and Innovation, and the National Research, Development and Innovation Agency. The funding condition was to create a Technology Platform and start expanding membership. Project funding covers the start-up phase (max 1 year).			and buildings, Food, water and nutrients
4. RoboKaland (Hungary)			
Funding instrument	Primary funding	Scope	CEAP
No funding instrument was involved. It is a garage-scale initiative, which was built up step-by-step.	Company's own capital investment	Regional level	Electronics and ICT
5. WHRS- Waste Heat Recovery System (Italy)			
Funding instrument	Primary funding	Scope	CEAP
The funding consists in the release of Energy Efficiency Qualification (TEE) - White Certificates: The TEEs are issued by the GSE (Energy Services Management) annually based on the energy savings achieved. To obtain the TEEs there must be a tangible result in terms of energy efficiency. The issue of TEE has a duration of 10 years.	National public funding	Organisational level	Construction and buildings
6. P2P- Packaging to Polymers: the new joint venture made up of Unilever and Seri Plast (Italy)			
Funding instrument	Primary funding	Scope	CEAP
National Agency for Investment Attraction and Business Development, owned by the Ministry of Economy. Project > 50 M €.	National public funding	National level	Plastics
7. SPIN- Transfer Centers of Knowledge in Małopolska Region (Poland)			
Funding instrument	Primary funding	Scope	CEAP
The services provided by Knowledge Transfer Centers are provided under de minimis aid. The entrepreneur pays only VAT, the rest is financed by the European Regional Development Fund.	EU funding	Regional level	Food, water and nutrients

Project SPIN is implemented in 2019-2023 with the budget PLN 20 million. The planned effect for the project is to provide advisory support to 754 entrepreneurs from Małopolska.			
8. Life Cycle Assessment (LCA) Voucher Scheme (Slovenia)			
Funding instrument	Primary funding	Scope	CEAP
Period of eligible costs: they start from the publication of the public call and last until 30th September 2023. Minimum incentive: EUR 3,000.00. Maximum incentive: EUR 9,999.99. Maximum funding rate: 60 %. Funds available for the period 2021-2023: EUR 409,000.00 until 2023. Special condition: The applicant must have at least 3 employees on the day of submitting the application, according to the Health Insurance Institute of Slovenia.	EU funding	National level	Electronics and ICT, Batteries and vehicles, Packaging, Plastics, Textiles, Construction and buildings, Food, water and nutrients
9. Localcir project (Spain)			
Funding instrument	Primary funding	Scope	CEAP
The project is co-financed by the European Regional Development Fund through the INTERREG V-A SPAIN PORTUGAL (POCTEP) 2014-2020 programme. Under the technical coordination of the Extremadura Energy Agency- AGENEX, the project is being implemented by 16 partners, 12 Extremaduran and 4 Portuguese from the regions of Alentejo and Centro and has a total budget of 3,284,870 euros. The co-funding of 25 % of the budget is provided by public sector entities and several non-profit organisations.	EU funding, regional public funding	Regional level	Electronics and ICT, Packaging, Plastics, Textiles, Construction and buildings, Food, water and nutrients
10. Electricity production with recycled photovoltaic panels (Spain)			
Funding instrument	Primary funding	Scope	CEAP

<p>100 % of the investment was the company's own capital. There has been no external financing by banks or other private investors. The total financing of the project has been carried out by the two cooperating companies.</p>	<p>Company's own capital investment</p>	<p>Organisational level</p>	<p>Electronics and ICT</p>
<p>11. ExpandFibre (Finland)</p>			
<p>Funding instrument</p>	<p>Primary funding</p>	<p>Scope</p>	<p>CEAP</p>
<p>ExpandFibre is funded through A joint public-private funding scheme. The public funding covers for 40 % of the total funding and is funded through Partnership model funding by Business Finland. Total budget of 50 M € out of which 20 M € is funded by Business Finland. Fortum's share is 32 M € (12.8 M € funding) and Metsä Group's 18 M € (7.2 M €). The public funding is a grant (no payback) and the duration of the project is 2020-2024. Business Finland is a public organization under the Finnish Ministry of Employment and the Economy.</p>	<p>Joint public-private funding</p>	<p>International level</p>	<p>Packaging, Plastics, Textiles, Food, water and nutrients</p>

4.1 Economic and environmental impact

The economic and environmental impact of the collected cases was evaluated combining partners own evaluation and the peer-review. SYMBI partners were advised to consider economic impacts such as reduction in waste management costs or production or procurement costs or increase in employment. Environmental impacts were evaluated in the same way considering for example reduction of CO₂ or other emissions, logistics, replacing virgin raw materials with secondary raw materials and reducing the amount of waste.

Few cases stand out with highest ranking but mostly the results are very even (table 4). To better conclude and demonstrate differences among the cases, the compliance with CEAP was examined together with the environmental and economic impact. The good practises with the highest evaluation points were:

1. ExpandFibre (Finland)
2. P2P- Packaging to Polymers: the new joint venture made up of Unilever and Seri Plast (Italy)
3. Integrated Waste Management System (IWMS) of the Region of Western Macedonia (Greece)
4. Rehabilitation of an abandoned quarry in the Region of Attica (Greece).

The good practises that got the highest points with this evaluation are all large private or state-owned companies that handle voluminous amounts of waste and secondary raw materials. Their scale is notable and vary from regional, national to international level.

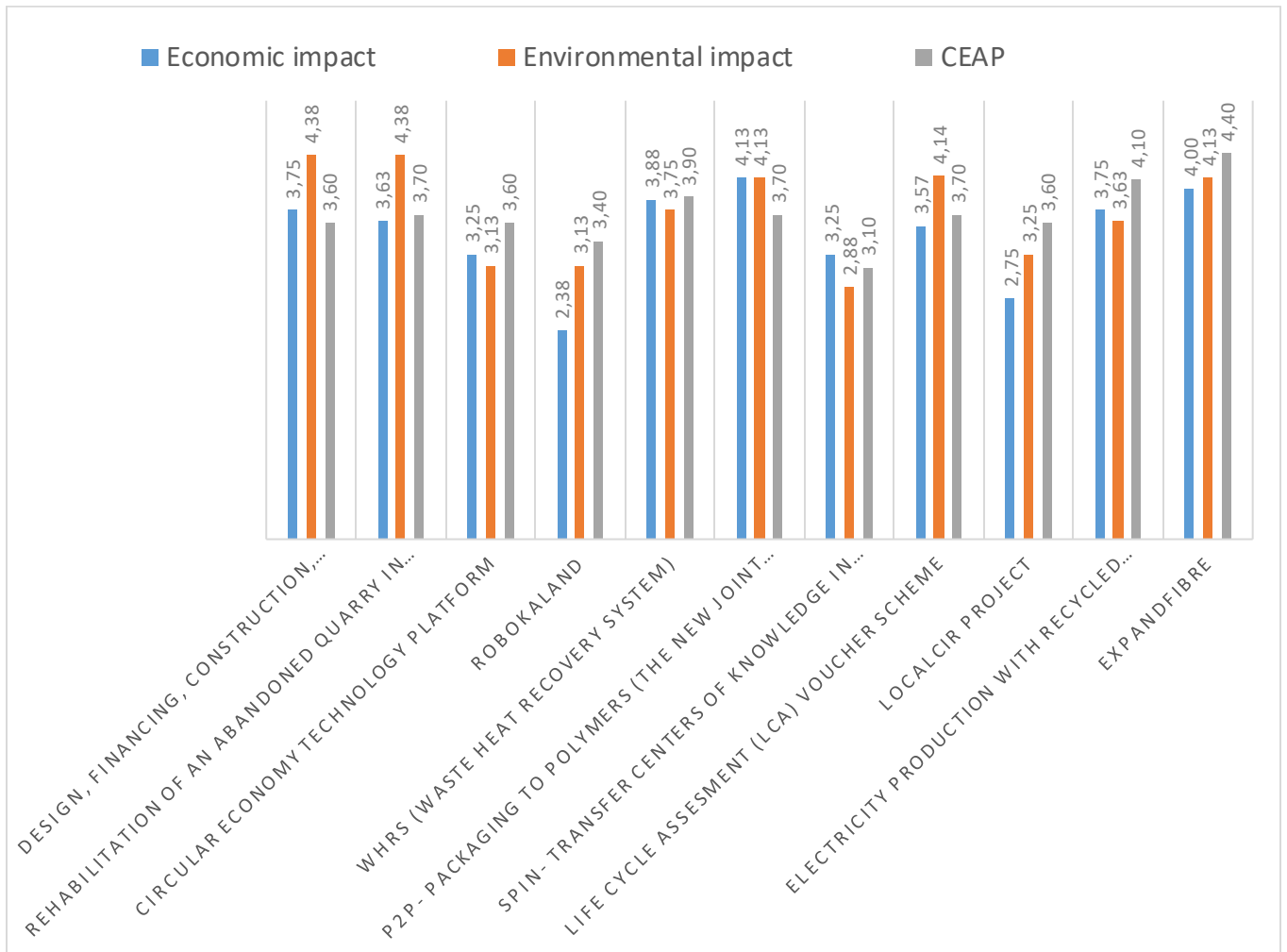


Table 4: Good practise evaluation results from economic and environmental impact and the compliance with EU Circular Economy Action Plan.

4.2 Transferability of the good practise

Transferability indicates the capability to transfer the practise from one country/region to another. This is essential in Interreg Europe projects as the aim of Interreg Europe is to bring people together to share innovative and sustainable solutions to regional development challenges. Learning from other regions/countries/partners is one of the main objectives of the SYMBI project funding and cooperation.

The transferability of the good practise was evaluated mainly through the peer-review process. Partners evaluated whether the good practise and/or the financial instrument could be transferred to their region/country and the interest towards the practise was evaluated. Table 5 presents the results combined with the impact evaluation. The cases that got the highest points were:

1. WHRS - Waste Heat Recovery System (Italy)
2. Electricity production with recycled photovoltaic panels (Spain)
3. Life Cycle Assessment (LCA) Voucher Scheme (Slovenia)
4. ExpandFibre (Finland).

The cases are of smaller scale (2 organisational level, 1 regional level, 1 international level) compared to the ones ranked the highest in the impact evaluation. Smaller scale practises can be seen more transferable than activities of large companies. The case from Slovenia, the Life Cycle Assessment (LCA) Voucher Scheme differs from all other cases as it is a funding instrument in itself. Such funding instrument already exists in some of the partner countries but is new to most. The Finnish case ExpandFibre is the only practise that is among both of the four good practise lists.

Based on the evaluation one practice was ranked the most interesting, even though its impact evaluation was low, as it is a regional small-scale practice. This practice was RoboKaland (HU); a small family enterprise that holds workshops for children to disassemble old electronic tools and create new electronic gadgets. Because of the scale of the practice RoboKaland did not get high points but is worth mentioning as it serves as a great way to spread information and increase knowledge. The full description of the good practice can be found from Annex 5.

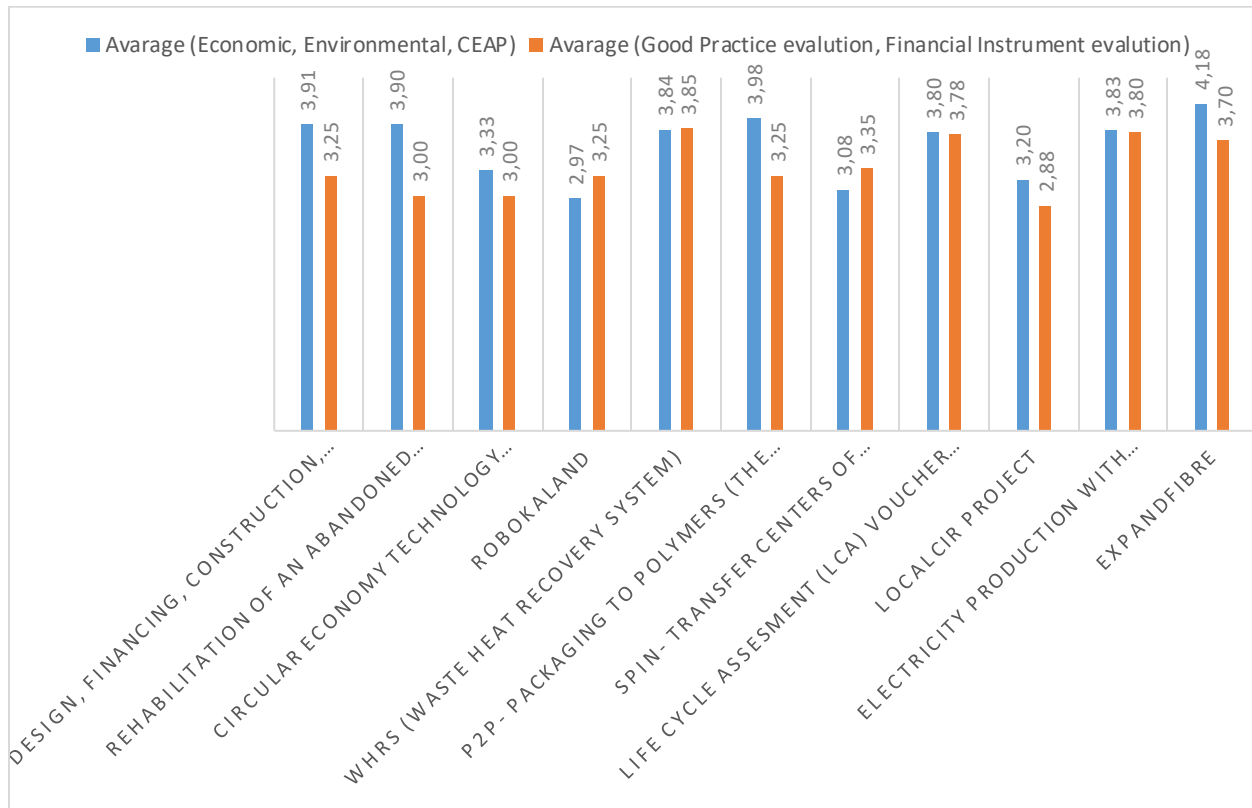


Table 5 Good practise evaluation results from economic and environmental impact and the compliance with EU Circular Economy Action Plan together with transferability evaluation. The results are average from economic, environmental and CEAP compliance and the average of the good practise and financial instrument evaluation.

4.3 Compliance with EU Green Deal and Circular Economy Action Plan

All the good practises were in line with the EU Green Deal and Circular Economy Action Plan objectives. Many of the practises were linked to more than one of the key value chains identified in the CEAP. All the key value chains were covered by the cases collected. The number of the cases concerning each key value chain are listed below:

- Food, water, and nutrients (6)
- Plastics (5)
- Construction and buildings (5)
- Electronics and ICT (5)
- Textiles (4)
- Packaging (4)
- Batteries and vehicles (1).

Most of the practises were related to the key value chain “food, water, and nutrients”. Table 6 presents the key value chains division among the cases. From CEAP circular economy policies and objectives the cases mostly contribute to waste prevention by the utilization or recovering waste or secondary raw materials and advancing EU market for secondary raw materials (table 2).

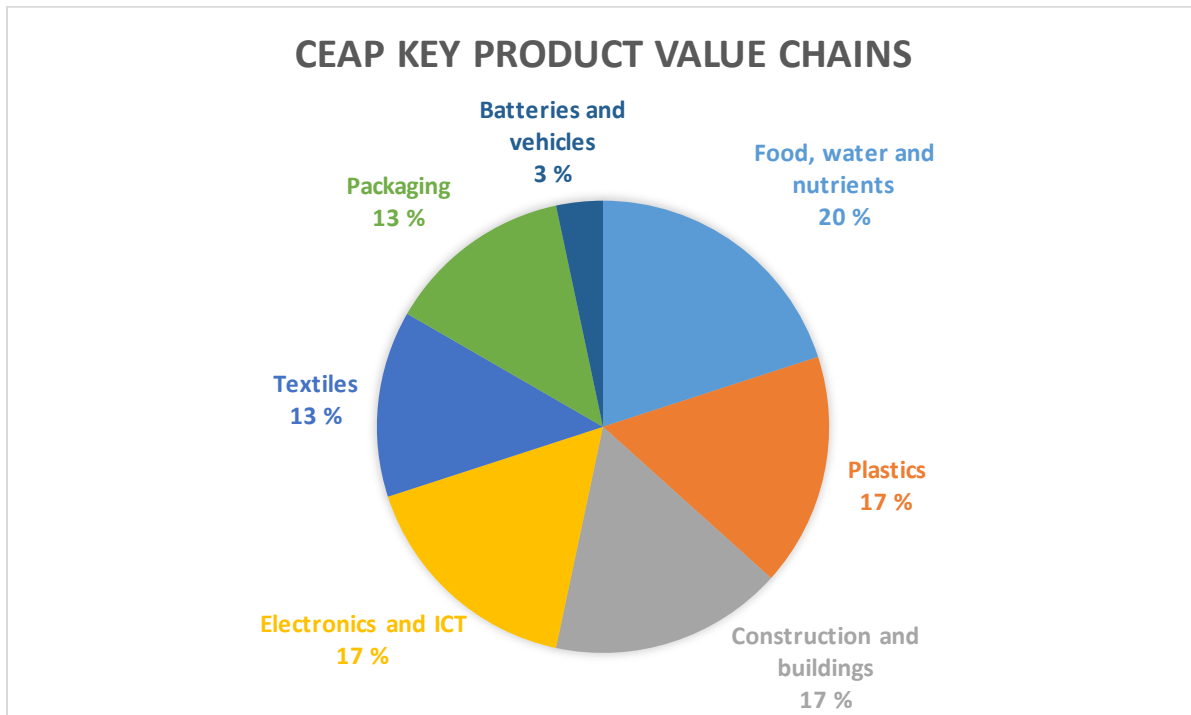


Table 6 presents the Circular Economy Action Plan key value chains the good practises are related to.

4.4 Funding instruments

Both public and private funding play an important role in funding CE and IS activities. When the different variety of public funding from EU funding, national public funding and regional public funding are combined, they form the biggest (54 %) funding source for the good practises identified during this activity (table 7). Companies own capital investments are the second largest funding instrument (28 %) and the most significant instrument when all of the instruments are examined separately (table 7). Joint public-private funding covered for 18 % of the good practises funding, which is the third largest funding instrument. It is notable from the good practises identified, that it has not always been easy or clear to identify which funding instrument has been used to fund some of the good practises. For example, often EU funding is distributed through national and/or regional organisations and thus can be interpreted either as EU funding or national/regional funding. Thus, the different public funding instruments are examined together and grouped as a bigger whole.

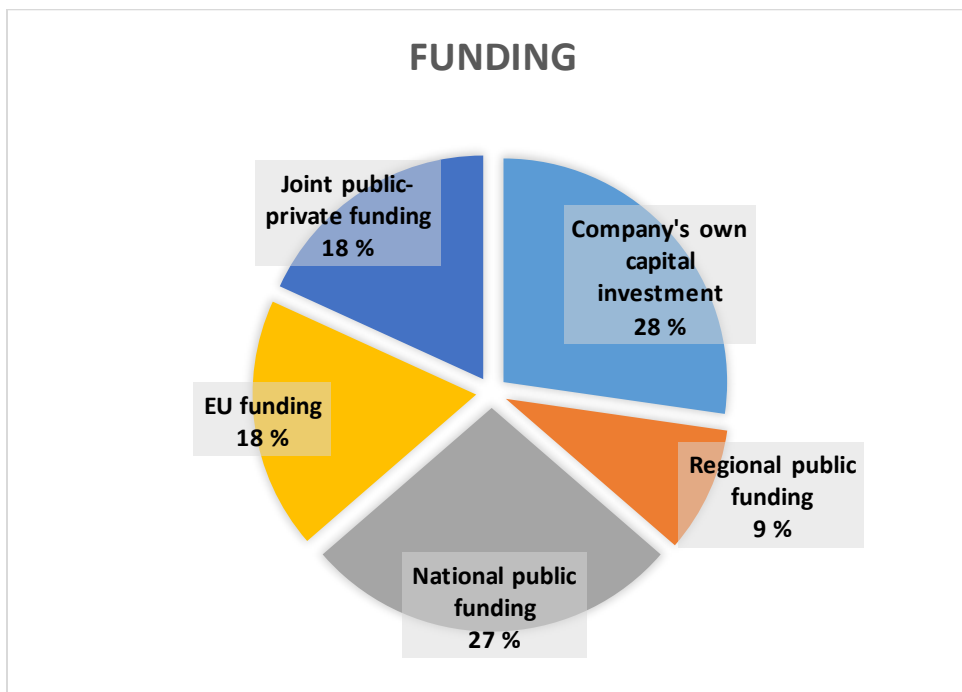


Table 7: The different funding instruments of the good practises collected.

4.5 Conclusions

The aim of this activity was to identify which kind of funding instruments have been used to fund industrial symbiosis and circular economy activities. The objective was to collect activities with significant impact environmentally and/or economically, high possibility for transferability and linkage to EU Green Deal and moreover EU Circular Economy Action Plan. In addition to the impact and transferability, the funding of the good practises was examined with the aim of identifying which kind of financial instruments create more successful IS and CE activities. The initial aim of this activity was to be able to conclude four good practises that stand out with the highest ranking based on partners own evaluation and the peer review. When examining the evaluation results it was noted that different cases stand out when assessing the environmental and economic impact compared to the transferability. Both before mentioned qualities are of high importance, so the SYMBI consortium decided to select four good practises that got the highest results based on environmental and economic impact and the compliance with CEAP and another set of four good practises that got the highest results based on the transferability of the good practise combined with the results from the impact evaluation.

The results from partners own evaluation and the peer-review were relatively even, and thus the ranking does not indicate high quality differences between the cases. Partners had already identified and selected cases that were compliant with the evaluation criteria and among the best national/regional practises. All the practises identified were good and had good performance in the evaluation process.

The grid below presents the two sets of the good practises that were selected the most successful. The colouring resembles the colouring of the analysable factors presented in the previous chapters.

The conclusions and lessons learned from this SYMBI activity is that when examining the funding of the most successful cases it can be noted that joint public-private funding stand out from the funding instruments. Only two cases were funded by Joint public-private funding and both of them are among the ones with highest impact and one (ExpandFibre) is among both main practises.

Public funding plays a key role in supporting the formation of IS and CE activities as the sole funding instrument or as part of a public-private funding. Moreover, companies own investments are crucial and indicate that IS and CE activities are profitable and worth investing in. Companies own investment through capital investment or private loans play an important role in funding IS and CE activities as part of a public-private funding or as the sole funding.

Another conclusion of the study is that most of the good practices were related to CEAP key value chain “food water and nutrients” but when looking at the most successful and transferable cases the most presented key value chain was plastics (6 cases). Packaging, textiles and food, water and nutrients were jointly the second largest key value chain the good practices related to (each 4 cases). Based on this activity it could be said that practices that are related to recycling or replacing plastics are the most successful, but this result can not be generalized outside of this study.

Good practices with the highest ranking with economic and environmental impact and compliance with CEAP			
Good practice	Primary funding	Scope	CEAP
Integrated Waste Management System (IWMS) of the Region of Western Macedonia with PPP (Greece)	Joint public-private funding	Regional level	Packaging, Plastics, Textiles, Food, water and nutrients
Rehabilitation of an abandoned quarry in the Region of Attica (Greece)	Company's own capital investment, private investment	Regional level	Construction and buildings
P2P- Packaging to Polymers: the new joint venture made up of Unilever and Seri Plast (Italy)	National public funding	National level	Plastics
ExpandFibre (Finland)	Joint public-private funding	International level	Packaging, Plastics, Textiles, Food, water and nutrients

Good practices with the highest ranking with transferability and impact evaluation			
Good practice	Primary funding	Scope	CEAP
Life Cycle Assessment (LCA) Voucher Scheme (Slovenia)	EU funding	National level	Packaging, Plastics, Textiles, Food, water and nutrients, Construction and buildings, Electronics and ICT

Electricity production with recycled photovoltaic panels (Spain)	Company's own capital investment, private investment	Organisational level	Construction and buildings
WHRS - Waste Heat Recovery System (Italy)	National public funding	Organisational level	Plastics
ExpandFibre (Finland)	Joint public-private funding	International level	Packaging, Plastics, Textiles, Food, water and nutrients

The number of cases being so low combined with the lack of similar studies no generalizable outcome or cause and effect relationship can be drawn. However, the conclusions can act as a base and bring additional value to similar studies, in the future. It can also be said that the results are very indicative and coherent. Presenting and promoting good practices and showcasing the funding behind successful cases can accelerate learning from others and can help with directing funding to the right places to create IS and CE that are environmentally and economically viable. Through the different funding mechanisms, instruments and schemes aiming to fund the EU Green Deal (presented in the thematic background), EU partner countries have and continue to have even more greatly in the future, possibilities to support and develop industrial symbiosis and circular economy.

ANNEX 1 DATA COLLECTION SURVEY



SYMBI Activity Questionnaire: EU Green Deal and Circular Economy Action plan related funding mechanisms for promoting industrial symbiosis and circular economy

1. The respondent

First name	<input type="text"/>
Last name	<input type="text"/>
Email	<input type="text"/>
Project partner	<input type="text"/>
Country	<input type="text"/>

Distribution of National EU Funding

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

Good Practise Public Funding

4. General information of the good practise

Name of the good practice	<input type="text"/>
Number and type of organisations involved	<input type="text"/>
Economic sectors involved	<input type="text"/>
When was the good practice established	<input type="text"/>

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

6. The good practice was funded primarily through

- EU funding
- National public funding
- Regional public funding
- Local public funding
- Joint public-private funding
- Other

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

- Electronics and ICT
- Batteries and vehicles
- Packaging
- Plastics
- Textiles
- Construction and buildings
- Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

- Organisational level
- Regional level
- National level
- International level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

13. More information about the GP

Link/etc.

14. General information of the good practice

Name of the Good practice

Number and type of organisations involved

Economic sectors involved

When was the good practice established

15. Good practice private funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

16. The good practice was funded primarily through

- Company's own capital investment
- Bank loan
- Angel investor or venture capital
- Other (foundations, associations, etc.)

17. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

18. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

- Electronics and ICT
- Batteries and vehicles
- Packaging
- Plastics
- Textiles
- Construction and buildings
- Food, water and nutrients

19. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

20. Impact and success of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

21. Scope and impact of the good practice

- Organisational level
- Regional level

National level

International level

22. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

23. More information about the GP

Link/etc.

ANNEX 2 PEER-REVIEW SURVEY

1. Evaluate the economic and environmental impacts of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

2. Is a similar good practise already existing in your own country/region?

- Yes
 No

3. Evaluate feasibility/transferability of the good practice to your own country/region

	1	2	3	4	5	
Not transferable to my region/country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very transferable to my region/country

4. Evaluate the interest of the good practice

	1	2	3	4	5	
Not interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interesting

5. Is the financial instrument already existing in your own country/region?

- Yes
 No

6. Evaluate feasibility/transferability of the financial instrument to your own country/region

	1	2	3	4	5	
Not transferable to my region/country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very transferable to my region/country

7. Evaluate the interest of the financial instrument

	1	2	3	4	5	
Not interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interesting

8. Evaluate how well the practice is in line with the objectives of the Circular Economy Action Plan and/or Green Deal?

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	As well as possible

ANNEX 3 Expand Fibre, Finland

Project partner	HAMK
Country	Finland

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

Finland's recovery and resilience (RRF) plan responds to the need of fostering a strong recovery and making Finland future-ready. The reforms and investments in the plan will help Finland become more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions. To this end, the plan consists of 39 investments and 18 reforms. They will be supported by €2.1 billion in grants. 50% of the plan will support climate objectives and 27 % of the plan will support the digital transition. ☐

110 M € of the RRF is allocated directly to circular economy plant and demonstration investments. Circular economy is a crosscutting theme that is mentioned in several of the funding descriptions of the RRF Green transition funding. (Funded through the Ministry of Economic Affairs and Employment and the Ministry of Environment) ☐

30 M € of the RRF is allocated to environmental sustainability and nature based solutions. Circular economy is linked at a key theme to this funding scheme. (Funded through the Ministry of Agriculture and Forestry, the Ministry of Environment.)

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

In Finland 35 % of National ERDF is targeted to green deal and climate objectives. Under the 35% target, 30% 261,1 M € is funded through "carbon neutral Finland" ERDF funding and the 5% is crosscutting. Under the "carbon neutral Finland" ERDF funding there is 11,5 M € allocated to a programme called "transition to circular economy". Circular economy is often a crosscutting theme and often is part of many other ERDF project also wider than just the "transition to circular economy" funding. However this way the allocation of funds towards advancing circular economy is ensured. Circular economy remains one of Finland's current government program's main objectives. ☐

4. General information of the good practise

Name of the good practice	ExpandFibre
Number and type of organisations involved	2 founding organisations: Metsä Group and Fortum. 65 organisation in the whole ecosystem
Economic sectors involved	Forest industry group and energy company
When was the good practice established	2020

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

ExpandFibre is an R&D collaboration and an Ecosystem launched by Fortum and Metsä Group to accelerate the development of sustainable bioproducts. It focuses on upgrading pulp fibres, hemicellulose and lignin from renewable and sustainable sources of straw and northern wood into new bioproducts. Its ambition is to meet the growing demands for sustainable textile fibres and other added value biomaterials. ExpandFibre aims to develop technologies and smart business concepts that are required to convert straw and pulp fibres into novel bioproducts, such as textile fibres. The joint mission of Fortum and Metsä Group is to provide selected markets with high-volume bioproducts that have a significantly lower carbon footprint compared to currently available fossil-based products.

ExpandFibre targets to create awareness, facilitate match-making, identify gaps and initiate the preparation of new R&D projects. The ExpandFibre Ecosystem, consisting of a multitude of bioeconomy players, has a central role in co-creating new technologies and concepts that complement the R&D efforts of **Fortum and Metsä Group.**

6. The good practice was funded primarily through

Joint public-private funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

Expand Fibre is funded through A joint public-private funding scheme. The public funding covers for 40% of the total funding and is funded through Partnership model funding by Business Finland.

Total budget of 50 M€ out of which 20 M€ is funded by Business Finland. Fortum's share is 32 M€ (12.8 M€ funding) and Metsä Group's 18 M€ (7.2 M€). The public funding is a grant (no payback) and the duration of the project is 2020-2024.

Business Finland is a public organization under the Finnish Ministry of Employment and the Economy. Business Finland's goal is to attract trade, tourism and foreign investment to Finland as well as providing funds for innovation. Business Finland also works among allocating several sources of EU funding and supporting Finnish companies applying for EU funding.

Partnership projects that advance the green transition are largely funded through the EU Recovery and Resilience Facility (RRF) in accordance with the Sustainability Growth Programme for Finland. Business Finland offers partnership funding for research, development, and innovation projects in leading companies' ecosystem themes. Funding is intended in particular for joint projects between companies and joint projects between companies and research organizations.

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Packaging
 Plastics
 Textiles
 Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The concept links to CEAP in many ways. The activity strives to enhance the sustainability and circular economy solutions among the three key value chains mentioned in the CEAP: textiles, packaging, replacement of plastics. It focuses on upgrading pulp fibre, hemicellulose and lignin from renewable and sustainable sources of straw and northern wood into new bioproducts. Its ambition is to meet the growing demands for sustainable textile fibres and other added value biomaterials. Driving the green transition and economic growth through design for circularity, research, innovation and enmeshing EU market for secondary raw materials through more investments, is among the main aims of the activity. The ecosystem aims to build knowledge-based competitive advantage among the ecosystem members. [

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

International level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The initiative has substantial long-term objectives (2030 and beyond), which, if actualized, would bring significant benefits: [

- Provide markets with new bioproducts that have less [than 20% of the carbon footprint of the current [products (replacement of fossil materials). [
- Bring new revenue to ecosystem partners through the [increasing production and sale of new value-added [bioproducts and technologies. [
- Significantly increase investments into biomass-based [value chains. [

The long-term objective is to provide markets with new bioproducts that have less than 20% of the carbon footprint of the current products, which is a relatively large environmental impact. R&D carried out in ExpandFibre will contribute to the target of Fortum, Metsä Group and the ecosystem partners to commercialize new bioproducts. Optimally, this leads to investments, creation of new jobs and increased exports from Finland. The economic impacts are estimated to be relatively large.

13. More information about the GP

Link/etc.	GP: https://www.expandfibre.com Funding: https://www.businessfinland.fi/en/for-finnish-customers/services/funding/funding-for-leading-companies-and-ecosystems
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ANNEX 4 Integrated Waste Management System & Rehabilitation of an abandoned quarry, Greece

Design, Financing, Construction, Maintenance and Operation of Infrastructure of the Integrated Waste Management System (IWMS) of the Region of Western Macedonia & Rehabilitation of an abandoned quarry in the Region of Attica

Project partner	PP6
Country	Greece

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

Greece is going to mobilize the finance of the Recovery and Resilience Facility Instrument through the The National Recovery and Resilience Plan "Greece 2.0". The "Greece 2.0" plan includes 106 investments and 68 reforms, utilising investment resources of 31.16 billion euros, of which 30,5 billion European will mobilise a total of 60 billion euros in investments in the country over the next five years. The plan has 4 main pillars (1) Green Transition (2) Digital Transformation (3) Employment, skills and social cohesion (4) Private Investments and Transformation of the economy. The four pillars of the Plan are significantly interlinked in terms of their content, enhancing the coherence of the Plan, and the synergies and complementarities expected between its integral parts. "Greece 2.0" fully complies with the EU goals for an accelerated green transition of the Greek economy, aligns with the priorities of the European Green Deal, the 2030 climate targets and the goal for climate neutrality by 2050, and devotes in total 37.5% (37.81% grants and 37% loans) of the NRRP's estimated cost to these two pillars respectively, thus surpassing the RRF Regulation's mandatory minimum allocation. □

Reforms and investments that are essential in order to meet Greece's climate and environmental targets and address the challenges and opportunities stemming from green transition have been mapped in the following four components: □

Component 1.1 – Power up: Transition to a new, low carbon energy mode. The aim of the component is to contribute to the aforementioned climate and energy targets, through a batch of investments that increase the resilience of the electricity network, its capacity and its energy storage capabilities, thus, allowing for greater penetration of RES in the energy mix. In addition, the component introduces the simplification of RES licensing procedures as well as a regulatory framework for offshore RES/wind facilities to facilitate new investments in the sector increasing the RES-e share and achieving the NECP targets. □

Component 1.2. – Renovate: Climate mitigation and adaptation actions for the built environment. The component includes reforms and investments that promote the renovation and energy efficiency upgrade of buildings, the implementation of urban and spatial 29 planning, and the development of strategic "green" urban regeneration projects. □

The major reforms refer to the Preparation of Urban Plans in implementation of the urban policy reform, Energy poverty Action Plan, Establishment of new maritime spatial planning and Establishment of new special spatial planning for RES, industry, tourism and aquaculture. □

Component 1.3. – Recharge and refuel: Transitioning to green and sustainable transport. It introduces reforms that enable the installation and operation of charging infrastructure for electric vehicles. It also promotes the investments required to establish the roadmap towards meeting the NECP target of 30% share of electric vehicles

in the domestic market by 2030. . Moreover, this component complements a number of reforms implemented or under implementation regarding the framework for installation and operation of EV charging infrastructure. **Component 1.4. – Sustainable use of resources, climate resilience and environmental protection: The main objectives of the proposed reforms and investments included in this component are alignment with the principles of a circular economy, natural environment protection and climate change. The component includes three sets of actions: (1) The first set of actions contributes to waste management following the principles of waste hierarchy and circular economy, and the protection of water resources, including water saving actions, the installation of digital meters and telemetry - remote control systems, the construction of infrastructure for water management and wastewater treatment and the introduction of 30 reforms that promote efficient and sustainable use of water resources. (2) The second set of actions aims to protect the environment, through reforestation initiatives and actions for the protection of biodiversity. (3) The third set of actions, focuses on enhancing and upgrading the capabilities of Greece’s civil protection mechanism; and aims to address challenges related to climate change, as Greece is seriously affected by the increasing severity and frequency of climate related disasters and extreme events. The majority of investments will take place in municipalities and regions across the country; they are bound to boost territorial cohesion as well. Last, but not least, the actions of these four components are reinforced by the one-off tax credits for business investment that fosters clean energy and sustainable production, which are part of the 4th Pillar.**

The major reforms under implementation focus on Waste management reforms for the implementation of sustainable landfilling and recycling, banning of single use plastics and promotion of reduction of waste and the **Establishment of new water and wastewater regulatory authority.**

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

On national level the priorities of the Cohesion Policy, according to the EU policy, are focusing on the following **strategic policies objectives (PO):**

PO1 "Towards a smarter Europe by promoting an innovative and clever financial reform"

PO2 "Towards a greener low carbon emitting and resilient Europe by promoting a clean and just energy transition, green and blue investments, circular economy and adaptation on climate change and disasters management"

PO3 "Towards a more connected Europe by promoting mobility and regional interconnection of Information and Communication Technologies" (8% of total funds)

PO4 "Towards a more social Europe by implementing the European pillars of social rights" (30% of total funds)

PO5 "Towards a Europe closer to citizens by promoting the sustainable and integrated development of urban, rural and coastal territories, and by supporting local initiatives" (8% of total funds)

PO6 "JTF Specific Objective"

The total finance is distributed to the Sectorial Programmes and the Regional Programmes for the preparation of **the Calls of Proposals. Circular economy and Industrial Symbiosis are included in:**

PO1 through the sectorial programme "Competitiveness – Entrepreneurship – Innovation". Indicative Calls of Proposals:

Strengthening of Value Added Chains - Collaborative Schemes - Networking: The Action aims at the creation of permanent/stable industrial symbiosis collaborations and the creation of the critical mass required for achieving economies of scale, the amelioration of the coordination of the supply chain as well as the improvement of the quality of the products and services provided, the implementation of modern logistics systems, increase in the bargaining power and the ability to claim a larger market share and finally the strengthening of the enterprises **extroversion.**

Innovation Clusters The Action aims at the implementation of business plans in industrial symbiosis schemes, placing an emphasis on the dimension of innovation, with a views to assist them in their development, as well as to **help them in forming Research and Technology collaborations with other businesses.**

Environmental Infrastructure: Reinforcement of Waste Management Facilities The main goal of the Action is Regional Development and concerns the financing of investment projects for the business utilization of liquid and solid waste, so that the waste after treatment can be re-introduced into the production Cycle and reused as raw materials, materials or substances in order to serve again either their original use or other uses.

PO2 by promoting a clean and just energy transition, green and blue investments, circular economy and adaptation on climate change and disaster management" through the programme "Environment and Climate Change". □

Priority of the programme will be investments on (a) all types of bio-economy, (b) services procurement instead of product procurement and (c) of circular economy innovation industrial models. Calls for activities on (a) waste reduction, (b) waste source sorting, (c) increase of waste recycling and reuse ,(d) public information and awareness, (e) upgrade of existing facilities and construction of new for the recovery and reuse of waste. □
Reforms will be also applied by creating one management organization for monitoring, coordinating and reinforcing the sector of waste management. □

PO5 Just Transition Fund special objective. The special objective of the JTF is focusing on specific regions of Greece, Western Macedonia , Region of Megaloupoli and Greek Islands in order to ensure the economically and socially just transition of these regions, by minimising the consequences caused from the diversification of the energy production model through the creation of new value in different sectors and branches. □

The programme is constructed in 6 priority pillars. Investments and reforms regarding circular economy and industrial symbiosis schemes are included in □

Pillar 1: Reinforcement and promotion of entrepreneurship. Actions for the transform of enterprises towards a green and circular economy for their entire line of production are included. Further more in this pillar the digital transformation of enterprises is promoted . □

Pillar 3: Land use adjustment – circular economy. Investments on large scale circular economy projects are included, such as investments for the reuse, repair and recycling of waste. Especially for Western Macedonia, Kozani included, the following investments will be a priority, creation of recycling units regarding photovoltaic panels, battery recycling, and treatment and reuse of wastewater treatment sludge, integrated management of municipal waste, creation of green point networks and recycling corners □

Pillar 5: Integrated small scale interventions – Smart communities. Investments on integrated management of waste towards a circular economy, management of natural resources for their saving and protection, activities of environmental monitoring awareness and information. □

4. General information of the good practise

Name of the good practice	"Design, Financing, Construction, Maintenance and Operation of Infrastructure of the Integrated Waste Management System (IWMS) of the Region of Western Macedonia with PPP"
Number and type of organisations involved	12 Municipalities of Region of Western Macedonia 3 Municipalities from the island of Corfu 1 Alternative Waste Management Enterprise 1 infrastructure construction company 1 operation company 1 technology provider
Economic sectors involved	Local Government Alternative Waste Management Company Industry
When was the good practice established	2017

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The object of the Partnership Agreement is the design, financing, and construction of: □

a) the Mechanical and Biological Treatment plant (MBT) with a capacity of 120,000 tons / year, □

b) the Landfill (Waste Landfill) capable of accepting the waste of the MBT for 30 years and □

c) the new Local Waste Management Unit (LWNU) of Kozani □

as well as the operation and maintenance of all the infrastructure of the IWMS of Western Macedonia for 25 years. □

It is a Mechanical - Biological Treatment Unit (MBT) which includes: mechanical sorting of mixed waste into recyclable and biowaste, followed by mechanical treatment and separation of recyclable materials in streams with wide use of optical, gravitational and ballistic separators while the organic is separated processing and composting in closed boxes. □

6. The good practice was funded primarily through

Joint public-private funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

The European Investment Bank (EUR 13 million),

• The Jessica financial instrument (EUR 13 million) - an amount that will be returned to Western Macedonia for reinvestment,

• The National Bank of Greece (EUR 6 million),

• Equity of 17 million euros of the Private Partnership Agency EPADYM SA.

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Packaging

Plastics

Textiles

Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The good practice is organized so as the Municipalities of Western Macedonia to achieve the goals of the European legislation regarding recycling and reuse of waste.

There are three main performance goals achieved so far :

• Diversion of Biodegradable Waste (BW) from Landfill at a rate of > 80%

• Landfill diversion at a rate of <35.98%

• Recovery of Recyclable Materials (RM) of Conventional Waste at a rate of > 35%

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High environmental impact

11. Scope and impact of the good practice

Regional level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The practice was the first reciprocal project implemented in this way at country level, has received many awards in European and National level. It is a practice viable and ongoing for almost 5 years and the contract of symbiosis is valid for another 18 years. The practice has expanded its services and outside of the Region of Western Macedonia, to nearby municipalities.

13. More information about the GP

Link/etc. <https://diadyma.gr/en/sdit/>

14. General information of the good practice

Name of the Good practice	Rehabilitation of an abandoned quarry in the Region of Attica
Number and type of organisations involved	2 public administration bodies 3 alternative management systems for demolition, excavation and construction waste 22 enterprises that process demolition, excavation and construction waste 1 enterprise specialist on quarries rehabilitation
Economic sectors involved	Construction and building enterprises Alternative management systems
When was the good practice established	2020

15. Good practice private funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The good practice gave solution to two main problems:

a. legal and environmentally accepted method for the management of the construction, building and demolition waste, left after the initial process of the waste and the reuse of the available material

b. Rehabilitation of abandoned quarries with construction, building and demolition waste and land use adjustment

16. The good practice was funded primarily through

Company's own capital investment

17. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

The good practice was funded primarily through

Private funds. The initial funds needed were from company's own capital and bank loans. After starting providing services, operating expenses and loan payback is achieved by a specific fee/ton of waste for the accepted waste, set by the alternative management systems responsible for the rehabilitation.

18. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Construction and buildings

19. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The illegal disposal of the waste is limited and their integrated management according to circular economy principles is promoted.

Protection and sustainable use of natural resources

Less energy consumer

20. Impact and success of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High environmental impact

21. Scope and impact of the good practice

Regional level

22. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

It is a practice that is replicated and in other Greek regions (Region of Kozani is included), is economically viable, industrial symbiosis and co-operation among different parties is promoted and environmental and circular targets are achieved.

23. More information about the GP

Link/etc. <https://ypen.gov.gr/enarxi-ergasion-tis-perivallontikis-apokatastasis-tou-anenergou-latomeiou-kyriakou/>

ANNEX 5 Circular Economy Technology Platform & RoboKaland, Hungary

Project partner	Pannon Novum
Country	Hungary

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

No answer yet. Due to change of government obtaining the answer takes more time.

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

No answer yet. Due to change of government obtaining the answer takes more time.

4. General information of the good practise

Name of the good practice	Circular Economy Technology Platform
Number and type of organisations involved	Ten: National Research, Development and Innovation Office, National Bank, Chamber of Commerce, large corporations, university, circular economy science park, City of Nagykanizsa
Economic sectors involved	building construction, petrol industry, communication (mobile phone operator), agribusiness, management consultancy, water engineering
When was the good practice established	March 2022

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The mission of the Circular Economy Technology Platform is to accelerate the transition to a circular economy and make Hungary a leader in circular technologies, thus strengthening the global competitiveness of the country as a whole and the companies operating in Hungary. In order to achieve this goal, the aim of the Platform is to connect

economic, academic, professional, civil and administrative actors engaged in circular economic activities and interested in the transition to a circular economy, and to establish and strengthen their circular connections.

6. The good practice was funded primarily through

National public funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

100% of the initial seed funding was provided through the project "Project ID: 2020-2.1.1-ED-2020-00117, „Circular Economy Science Park Phase I. – Planning phase”, funded by Ministry of Technology and Innovation, and the National Research, Development and Innovation Agency. The funding condition was to create a Technology Platform and start expanding membership. Project funding covers the start-up phase (max 1 year).

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Electronics and ICT

Construction and buildings

Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

This good practice has been directly created to support the implementation of the EU Green Deal, and more specifically, the EU's Circular Economy Action Plan. By involving corporate players the Platform helps companies exchange experience so that sustainable products can become the norm also in Hungary. It focuses on sectors, which currently use the most resources and which have high potential for circularity, e.g. construction, transport, water, food etc. By involving cities it makes circularity work for people. By involving academia and research (and directly Hungary's "Circular Economy Science Park") it contributes to positioning Europe as a leading global actor for advancing circularity.

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

National level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The Circular Economy Technology Platform was created just two months ago, so it is too early to draw conclusions and judge its success. However, every sign indicates that it will be a successful and lasting initiative. This is because all the major players of the country's economy and politics are fully committed (and members) of it. As it was highlighted at the launch event by high level speakers such as the Minister of Economy, the CEO of Hungary's oil company etc., converting the country's economy to a circular model is the only way to go around major current and upcoming challenges, such as lack of raw materials, escalating raw material and energy prices, energy security, global crisis (e.g. war in Ukraine), interruption of international value chains (e.g. imports from China) etc. C

Once the seed funding expires, the Platform will be operated from the membership fees of its participants.

13. More information about the GP

Link/etc. • The home page of the Circular Economy Technology Platform: <https://www.circularhungary.hu/> • News release about the establishment of the platform: <https://korforgas.uni-pannon.hu/projekt/hirek/154-korforgasos-gazdasag-technologiai-platform-a-pannon-egyetemem>

14. General information of the good practice

Name of the Good practice	RoboKaland
Number and type of organisations involved	One, Nonprofit Ltd.
Economic sectors involved	Electronics
When was the good practice established	2019

15. Good practice private funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

Every year a vast amount of electronic devices are discarded and landfilled – much of which is still usable or with little repair could still be used. On the other hand children and young people are extremely open to the world of **electronics and have excellent ideas and interest to create new electronic gadgets.** ☐

RoboKaland is a small family enterprise, uniting these two aspects. The mother is a primary school teacher, the father is a hardware and software developer. They have created a well-equipped workshop and organise short retreats for children to disassemble old electronic tools and create new electronic gadgets and creations. A team of IT experts and scientists are involved in the interactive workshops. They welcome children with learning disabilities, **too (e.g. autism): so far they have worked with 50+ such children.** ☐

In less than 3 years of operation RoboKaland has diverted more than 15 tons of electronic waste from landfilling and organised programmes for hundreds of children. Eco-consciousness is part of their mission: they try to find planned weaknesses in disassembled pieces and try to eliminate those in newly built devices. They collect working retro items and plan to open an electronics museum. They disassemble every part to the smallest possible component and what is not used up is taken to the recycling ward.

16. The good practice was funded primarily through

Company's own capital investment

17. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

No funding instrument was involved. It is a garage-scale initiative, which was built up step-by-step.

18. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Electronics and ICT

19. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

This is an excellent initiative to showcase converting a linear value change to a circular one. Planned weaknesses of electronic components are identified and exposed. It has directly contributed to diverting waste streams from landfilling, while raising the digital competences and creativity of the younger generation.

20. Impact and success of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

21. Scope and impact of the good practice

Regional level

22. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

This is an excellent case for a low-budget start-up activity. It has been a huge success among children and parents – to such an extent that RoboKaland was featured in a national TV show. After that they have received the "Telekom Digital Hero" award, too. The initiative will be continued on a volunteering basis (e.g. retired university teachers/researchers/IT experts as trainers), as well as from the financial contribution of children's parents.

23. More information about the GP

Link/etc.	News about the good practice (HU): https://helloworld.hu/a-capak-is-nagyra-tartottak-a-vallalkozohazaspar-otletet-a-fenntarthatosagot-otvozik-a-digitalizacioval-es-az-oktatassal/ Home page (HU): https://robokaland.eu/index.php?q=content/Home
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ANNEX 6 P2P- Packaging to Polymers & WHRS (Waste Heat Recovery System), Italy

Project partner	Chamber of Commerce Molise
Country	Italy

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

No answers

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

No answers

4. General information of the good practise

Name of the good practice	WHRS (Waste Heat Recovery System)
Number and type of organisations involved	3 companies involved: Colacem S.p.A. - Enel X - Cogenio
Economic sectors involved	Cement and energy production
When was the good practice established	The feasibility study was carried out in 2020. During 2021 the preliminary planning was completed and the procedure for obtaining Energy Efficiency Qualification (TEE) was presented and approved by GSE (Energy Services Management).

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The system uses the surplus heat from the clinker cooking line at the Sesto Campano production facility for the production of electricity for self-consumption, giving it to an innovative ORC (Organic Rankine Cycle) turbine system with which it will be able to produce from 2 to 3 MW of electricity. □

The benefits are both economic and environmental. From an economic point of view, the companies involved obtain white certificates (which are a contribution to the investment) and Colacem will be able to purchase electricity at a lower price than the market price. From an environmental point of view: 1) heat emissions into the environment are reduced, contributing to the challenge to reduce global warming; 2) The use of fossil fuels is reduced for the portion of electricity production recovered thanks to the WHRS plant.

6. The good practice was funded primarily through

National public funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

The funding consists in the release of Energy Efficiency Qualification (TEE) - White Certificates. ☐

- The TEEs are issued by the GSE (Energy Services Management) annually based on the energy savings achieved. ☐

- To obtain the TEEs there must be a tangible result in terms of energy efficiency. ☐

- The issue of TEE has a duration of 10 years. ☐

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

No answers

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

Recovering energy from excess heat that would otherwise be dispersed into the environment has multiple advantages already highlighted in section 5).

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

Organisational level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The project is still in the preliminary phase so we can only talk about expected and unattained results. The fact that **Enel X has obtained approval of the practice indicates that the results are likely to be positive.** ☐

Even after the period of allocation of the TEE, ie 10 years, the system will continue to produce energy at a cost lower than the market one, as well as maintaining the environmental advantages already highlighted in point 5).

13. More information about the GP

Link/etc. No answers

Project partner	Chamber of Commerce of Molise
Country	Italy

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

Total for Mission 2 of the National Recovery and Resilience Plan, i.e. that relating to the country's green, ecological and inclusive transition, promoting the circular economy, the development of renewable energy sources and more sustainable agriculture is € 59.46 billion i.e. 31.05% of the total amount of the Plan

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

Following the vision "taking care of the environment", the Regional Plan faces the challenge of the ecological transition through the circular economy, to support the growth of environmental quality and sustainable economic growth, looking at new green employment areas by enhancing both specific orientations of the European Community: (i) "support the prevention, reuse and recycling of waste with adequate infrastructure, targeting actions higher in the waste hierarchy, such as separate collection systems, in less developed regions" and (ii) "support small and medium-sized enterprises in the implementation of innovative solutions in the field of circular economy and other solutions in the field of green economy".

With prevailing environmental and supply chain purposes, the plant infrastructural context is strengthened and investments in technological and / or organizational innovation of companies, in cooperation for circularity along the life cycle of products or across value chains are supported. More specifically, the ERDF-ESF PR + implements its strategy, allocating 3.5-7.5% of the ERDF resources.

4. General information of the good practise

Name of the good practice	P2P- Packaging to Polymers (the new joint venture made up of Unilever and Seri Plast (subsidiary of Seri Industrial S.p.A., a company listed on the MTA list in Milan)
Number and type of organisations involved	Unilever and Seri plast companies (with the participation of various Stakeholders: the Italian Government and the Molise Region, in concert with the confederal trade unions and with the support of the Ministry for Economic Development).
Economic sectors involved	Plastic sector
When was the good practice established	In March 2021 an agreement was signed for the creation of a partnership to convert the plant located in the industrial core of Pozzilli (province of Isernia) through the aforementioned joint venture.

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The new company called P2P (Packaging Polymers), born from the joint venture, will manage the progressive conversion of the Unilever site in Pozzilli, which currently produces detergents for cleaning the house and clothing and which within 24 months of the transfer of the site to the company P2P will be entirely dedicated to the production of recycled plastic. The redevelopment project will come to Unilever to progress even further towards the ambitious goal of a world without quick waste. Specifically, this milestone expects to halve the use of virgin plastics for its packaging by 2025, increasing the use of post-consumer recycled plastics by 25%. A goal that is part of Unilever's broader "Clean Future" strategy, aimed at reducing the carbon footprint of its cleaning and laundry products by keeping them unchanged or increasing their performance. Another equally important advance will be in the field of the future of work. Indeed, the reconversion project represents an excellent example and an important step forward in Unilever's global program "Future of work", which supports collaborators in updating and developing new skills and which, even in the case of Pozzilli, accompanies the workers with an integrated support program including various aspects, including technical training, change management and any other useful aspect to put everyone in the conditions to operate at their best in the new production reality. The workers of the plant will all be **employed in the new location, under the conditions established by the trade union agreement.**

The plant will become one of the most advanced sites in Europe for the production of recycled plastic and the only one in Southern Italy capable of recovering post-consumer mixed plastic, otherwise destined for waste-to-energy plants and cement factories. In fact, in addition to the conversion, the Joint Venture and Unilever are defining the terms and conditions of a long-term commercial partnership for the supply to Unilever of plastic raw materials recovered from post-consumer packaging, resulting in the company's competitive advantage on the market and in compliance with EU and national decisions aimed at reducing pollution related to the use of plastic. The project aims to create a stable and solid future for the entire region by converting the existing site and safeguarding **employment and related industries.**

6. The good practice was funded primarily through

National public funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

Information to be provided by Unilever

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Plastics

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The new plant, in addition to working on a completely circular zero-waste model, will also be the first in Italy to use both mechanical and chemical recycling methods. Mechanical recycling uses around 60-70% of recycled plastics, but with the chemical method the gap is closed and 100% reprocessed. Not only that, but the chemical recycling process also creates plastic that can be used for food packaging. ☐

It will meet a growing market need as there is a strong demand for recycled packaging in Europe but supply is currently scarce. And of course, the new facility will also help in the long run, potentially ensuring a steady supply of the high quality PCR [post-consumer recycled plastic] and secondary raw materials that Unilever needs for its packaging. ☐

Such a project will ensure a climate-neutral, resource-efficient and circular economy, according to the principles established by the European New Green Deal and the new Action Plan for the circular economy. ☐

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High environmental impact

11. Scope and impact of the good practice

National level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

P2P is a long-term and strategically viable project that would be able to secure a bright future for the area. Creating a high-value recycling facility is in line with Unilever's sustainable business model and Clean Future commitments and could ultimately provide Unilever with the high-quality recycled plastic it needs for its sustainable packaging.

13. More information about the GP

Link/etc.	"Investing in the future: the Pozzilli factory story": https://youtu.be/6-c6mul7vsE https://www.unilever.com/news/news-search/2021/building-a-new-future-for-the-factory-floor/ https://www.unilever.it/ https://www.seri-industrial.it/eng/
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ANNEX 7 Localcir project & Electricity production with recycled photovoltaic panels, Spain

Project partner	LP
Country	Spain-

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

No answers

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

No answers

4. General information of the good practise

Name of the good practice	Localcir project
Number and type of organisations involved	16
Economic sectors involved	Public Administration, Business association, Univerty of Extremadura, Agency of energy.
When was the good practice established	2021

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The design of the closed circuits seeks to apply to the companies studied in the previous phase, a dynamic of utilisation of the waste and residues of the business models, which have already been analysed in the green itineraries, in order to treat these by-products which in the linear economy are treated as wasted waste and which generate environmental impact, so that through innovative transformation processes, where appropriate and recycling where necessary, they can be used as raw materials for new production cycles and new business models. I

In this way, the waste of resources and raw materials is substantially reduced and everything is used to the maximum, minimising any environmental impact that may be implicit in their transformation. In other words, the by-products of one company are considered raw material for other companies, thus generating value flows for new **business models, which are intended to complement each other in a closed circuit.** ☐

In Localcir-Poctep, each closed circuit is made up of a minimum of six companies, which will be accompanied so that they can be incorporated into the same closed circuit and can "work" in this symbiosis of needs. These circuits are an advantage for their business models, bringing to life everything that may have been worked on and advised in the interventions dictated in the field of green itineraries. Remember that the main objective of these is sustainability, with all that this concept encompasses, i.e. working to satisfy current needs without compromising the ability of future generations to satisfy theirs, guaranteeing a balance between economic growth, care for the **environment and social well-being.** ☐

6. The good practice was funded primarily through

Regional public funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

The project is co-financed by the European Regional Development Fund (ERDF) through the INTERREG V-A SPAIN PORTUGAL (POCTEP) 2014-2020 programme. The public funding is spread over the years of the project **duration and the results must remain over time, at least five years after the end of the funding programme.** ☐

The Regional Ministry of Environment and Rural, Agricultural and Territorial Policies of the Regional Government of Extremadura is the coordinator of the Interreg V-A POCTEP project "LOCALCIR", for the promotion of **entrepreneurship and business innovation in circular economy.** ☐

Under the technical coordination of the Extremadura Energy Agency-AGENEX, this project is being implemented by 16 partners, 12 Extremaduran and 4 Portuguese from the regions of Alentejo and Centro, and has a total budget of 3,284,870 euros. The co-funding of 25% of the budget is provided by public sector entities and several non-profit organisations.

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Electronics and ICT

Packaging

Plastics

Textiles

Construction and buildings

Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

It is totally related to industrial symbiosis, an area included in the circular economy that is encouraged by these programmes. Reusing and converting waste into raw materials, thus reducing pollution and atmospheric emissions. Intervening in the management from the beginning of the product.

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

Regional level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The good practice aims to connect companies from different regions of Spain and Portugal with the objective of **sustainability and waste reduction, as well as economic savings in transport and waste management.** **⌋**
The results of the project must remain at least five years after the end of the funding programme and the symbiosis agreements reached through the project will remain in time for the own interest of the companies and the **administration.** **⌋**

13. More information about the GP

Link/etc.	https://localcir.eu/2022/04/27/localcir-poctep-entra-en-la-nueva-fase-de-actividad-denominada-de-diseno-e-implementacion-de-circuitos-cerrados/
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14. General information of the good practice

Name of the Good practice	Electricity production with recycled photovoltaic panels
Number and type of organisations involved	2 companies
Economic sectors involved	Tourism and energy
When was the good practice established	2021

15. Good practice private funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

Reuse of photovoltaic solar panels for the production of electricity consumed by "El Raposo" Spa (Balneario El Raposo). All the panels are purchased from the " La Hormiga Verde" company, which is a Waste Electrical and Electronic Equipment (WEEE) manager. We have installed 100kW in 2021 and we are installing to reach 200kW **before the end of 2022.** **⌋**

The Good Practice contributes to the need to reuse waste, in this case solar panels that are "discarded" by large **electricity generating plants, which are checked and repaired by "La Hormiga Verde".** **⌋**

We promote reuse, industrial ecology, eco-conception and the reintroduction of products into the economic circuit.

16. The good practice was funded primarily through

Company's own capital investment

17. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

100% of the investment was the company's own capital. There has been no external financing by banks or other **private investors.** **⌋**

The total financing of the project has been carried out by the two cooperating companies.

18. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Electronics and ICT

19. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The project complies with the Green Deal and Circular Economy Strategy. As well as with the RIS3 of Extremadura **In its Objective 2 "Industrial Transition".** ☐

The cooperation of the two companies, on the one hand, "La Horniga Verde", It is a regional company that recycles **electronic waste which is committed to the circular economy and the integration of people with disabilities.** ☐

It is a Special Employment Centre (CEE) ref CEE-EXT-282, dedicated to the proper management of "electronic waste" (Waste Electrical and Electronic Equipment or WEEE), It deals from collection to recovery through **disassembly and finally recovers more than 85% of all materials.** ☐

The "El Raposo" Spa has become an example of sustainability as a thermal resort, reusing thermal waters in its ecological plantations of aromatic herbs and vineyards, in addition to the installation of thermal and photovoltaic **solar energy.** ☐

It also has a biomass boiler that uses local pine wood chips as fuel. All these measures are aimed at achieving **energy independence in the coming years and improving the company's profitability.** ☐

In addition, a new geothermal installation is expected to be built next year to generate heat and cold depending on **the season of the year, using the constant temperature of the earth.** ☐

The main objective of the "Electricity production with recycled photovoltaic panels" project is to generate an ecosystem of green and circular economy that has socio-economically developed the area and contribute to fix population in its area of influence.

20. Impact and success of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High environmental impact

21. Scope and impact of the good practice

Organisational level

22. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

Due to the high cost of electricity, the economic impact is very high. Because of this, this good practice wants to implement the installation of panels to cover 100% of its entire electricity demand. They are studying the possibility of installing heat accumulators and storage batteries, so that the excess energy produced during the day can be stored for the night hours, in order to reach the objective of covering 100% of the electricity demand.

23. More information about the GP

Link/etc. <https://www.balneario.net/> <https://www.lahornigaverde.org/>

ANNEX 8 SPIN- Transfer Centers of Knowledge in Małopolska Region, Poland

Project partner	PP3
Country	Polska

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

No answers

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

No answers

4. General information of the good practise

Name of the good practice	SPIN- Transfer Centers of Knowledge in Malopolska Region
Number and type of organisations involved	Marshall Office as a Leader of the project and 8 Centers of Knowledge Transfer in Malopolska region
Economic sectors involved	industries that are part of the Malopolska Regional Smart Specializations (research and development of technologies for manufacturing and forming of metallic and ceramic materials and waste management).
When was the good practice established	2019

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The aim of the project is to provide innovative services for entrepreneurs by business environment institutions operating at universities. It is addressed mainly to micro, small and medium-sized enterprises. Knowledge Transfer Centers provide tailor-made consulting services. Each service is tailored to the needs of the entrepreneur. The

services could be for example: expert consultations, assistance in establishing R&D business contacts, analysis of international markets, individual industry consultations, opinions and innovation recommendations, performing technological audits in terms of verifying the areas of enterprise activity, and the demand for new, innovative solutions with an indication of the potential solutions, verification of new trends, innovations and technologies, consultation with entrepreneurs – developing a consultation program with an analysis of needs, applied **technologies and company development strategies or support in the preparation of the application forms.** **One of the company that benefited from the project is company POLAN joint venture located in Zabno, malopolskie,** part of the Fruit and Vegetable Preserving and Specialty Food Manufacturing Industry. During the services offered within the project some directions of technological changes in the area of: technological steam, water, pasteurization, sewage, foil packaging for pallets were proposed based on the previous analyses of the enterprise. The effects of proposed solutions could be visible after development of technological projects. IT is initially estimated that, depending on the solutions used, it will be possible to reduce the current production costs by 5-10%.

6. The good practice was funded primarily through

EU funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

The services provided by Knowledge Transfer Centers are provided under de minimis aid. The entrepreneur pays **only VAT, the rest is financed by the European Regional Development Fund.**

Project SPIN is implemented in 2019-2023 with the budget PLN 20 million. The planned effect for the project is to **provide advisory support to 754 entrepreneurs from Malopolska.**

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

The services provided in the framework of the Spin project contribute to more efficient use of resources and increase the competitiveness and innovation of the regional economy in areas of metallic and ceramic materials and waste management.

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High environmental impact

11. Scope and impact of the good practice

Regional level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

Project spin increase the level of entrepreneurship and innovation in the entire region, that is conducive to building a knowledge-based economy together with business environment institutions operating at universities. The scope of the support could include also preparation of the application forms giving the funds for financing the developed

solutions.

13. More information about the GP

Link/etc. <https://min-pan.krakow.pl/projekty/en/2020/03/20/spin-malopolskie-centra-transferu-wiedzy/>

ANNEX 9 Life Cycle Assessment (LCA) Voucher Scheme, Slovenia

Project partner	Government Office for Development and European Cohesion Policy (GODECP), Regional Development Agency of the Ljubljana Urban Region (RRA LUR)
Country	SLOVENIA

2. EU's NextGenerationEU (NGEU) funding scheme entails The Recovery and Resilience Facility instrument to help EU countries recover from the COVID pandemic and to advance the green transition. EU countries must devote at least 37 % of the financing they receive under the 672.5 billion euros Recovery and Resilience Facility to investments and reforms that support climate objectives. How and through which kind of measures and national instruments does your country plan to mobilise the 37 %? Is circular economy part of the 37 %?

The Slovenian RRF plans to implement the 34 reforms and 52 investments in four pillars: 1) green transition; 2) digital transformation; 3) smart, sustainable and inclusive growth and 4) health and social security. ☐
The Slovenian RRF accords 42.45 percent of the funds for achieving green goals and 21.46 percent for achieving digital goals. The transition to a low-carbon circular economy is one of the key factors in ensuring the long-term productivity of the economy and the overall resilience of society. Reforms and investments of the RRF for the Green Transition support the achievement of the goals of the National Energy and Climate Plan of the Republic of Slovenia and will contribute to the implementation of the European Green Deal. The RRF will support the implementation of reforms in the field of energy efficiency, the use of renewable energy sources, and sustainable mobility, and implement measures to better adapt to the consequences of climate change. The reforms and investments will also be applied to improve the quality of public services in the field of drinking water supply and wastewater collection and treatment. ☐

Under the RRP there is a specific component devoted to the transition to the circular economy. The foreseen investments consist of implementation of the A Deep Demonstration of a Circular, Regenerative and Low-Carbon Economy project (20 mio EUR funds envisaged) and investments to increase the wood processing capacities to facilitate transition to low carbon society and improve/strengthen the forest value chain. ☐

3. The EU Cohesion Policy helps EU countries, regions, local governments and cities to implement large investments that contribute to the European Green Deal. EU countries must devote at least 30% of what they receive from the European Regional Development Fund to the EU Green Deal priorities. How and through which kind of measures and national instruments does your country plan to mobilise the 30 %? Is circular economy part of the 30 %?

The European Green Deal set ambitious goals for the transformation of the EU economy towards a sustainable future and set the framework for paving the way for a climate-neutral, circular economy by 2050 at the latest. In this context, Slovenia is committed to look for the highest impact: supply of clean, accessible, and safe energy; accelerating the transition to sustainable and smart mobility; mobilizing industry for a clean and circular economy; renovation initiatives - by building and renovating in energy and material-efficient way; ambitions to achieve zero pollution for the environment free of toxic substances; conservation and restoration of ecosystems and biodiversity and climate change mitigation; creating regions and cities that are resilient to the effects of climate change and in

other areas, in line with specific initiatives under the European Green Deal. In addition, Slovenia will use funds to mobilize and strengthen research in the field of sustainability. In addition to national funds, Slovenia will also allocate ESRR, KS, and ESPRA funds to support investments in this area. Also, Smart specialisation strategy of Slovenia (under revision) recognises the circular economy as one of the key priority areas. Where relevant, cohesion policy programs will support investments that successfully integrate the principles of sustainability, aesthetics, and inclusion under the New European Bauhaus initiative in order to find accessible, inclusive, sustainable, and attractive solutions to climate challenges. In the Operational programme for the European Cohesion Policy of Slovenia 2021 – 2027 the priorities that will be directly aligned with the European Green Deal and will contribute to the 30 percent share are: Priority 3/Green transformation for climate neutrality with the specific objective 3.6./Promoting the transition to a circular economy, Priority 4/Sustainable urban mobility and 4/Sustainable inter-regional mobility and cohesiveness.

4. General information of the good practise

Name of the good practice	Life Cycle Assessment (LCA) Voucher Scheme
Number and type of organisations involved	3/Ministry of Economic Development and Technology, Slovene Enterprise Fund, Spirit Slovenia;
Economic sectors involved	all sectors (accept »Primary production, processing and marketing of agricultural products« and »Fishing and aquaculture sector«)
When was the good practice established	2021

5. Good practice public funding: please describe the GP (to what problem/shortage/lack/need does the GP contribute to)

The purpose of the voucher is to enable SMEs to carry out a comprehensive Life Cycle Assessment (LCA), which **arises during the product life cycle.** ☐

Life Cycle Assessments provide the best framework for assessing the potential environmental impacts of the products/services. LCAs have been used increasingly by industry to help reduce the overall environmental burdens across the whole life cycle of goods and services. LCA is also used to improve the competitiveness of the company's products and in communication with governmental bodies. LCA is used in decision making as a tool to improve product design, for example the choice of materials, the selection of technologies, specific design criteria and when considering recycling. LCA allows benchmarking of product system options and can therefore also be used in decision making of purchasing and technology investments, innovation systems, etc. The benefit of LCA is that it provides a single tool that is able to provide insights into upstream and downstream trade-offs associated with environmental pressures, human health, and the consumption of resources. These macro-scale insights **compliment other social, economic, and environmental assessments.** ☐

6. The good practice was funded primarily through

EU funding

7. Please describe the funding instrument

-what % of the total funding needed, did the funding cover?

-what were the conditions for the funding?

-is the funding bound to a time factor? (For example how many years does the funding continue or is it a lump-sum, is there a payback period?)

Period of eligible costs: they start from the publication of the public call and last until 30th September 2023 ☐

Minimum incentive: EUR 3,000.00 ☐

Maximum incentive: EUR 5,000.00 ☐

Maximum funding rate: 80% ☐

Funds available for the period 2021-2023: EUR 400,000.00 until 2023 ☐

Special condition: The applicant must have at least 3 employees on the day of submitting the application, according

to the Health Insurance Institute of Slovenia. [

[

8. Is the GP related to some of the sectors listed in the EU's Circular Economy Action Plan?

Electronics and ICT
Batteries and vehicles
Packaging
Plastics
Textiles
Construction and buildings
Food, water and nutrients

9. Please describe how the GP relates to EU Green Deal and/or Circular Economy Action Plan

In the document »Circular Economy Action plan« LCA presents a favorable framework for assessing the potential environmental impacts (in the chapter »A Sustainable product policy framework«). The special focus is made on the promotion of circularity principles in the lifecycle of buildings with the intention to integrate life cycle assessment in public procurement and the EU sustainable finance framework and exploring the appropriateness of setting of carbon reduction targets and the potential of carbon storage (chapter »Key product value chain/Construction and building«).

10. Success and impact of the good practice

	1	2	3	4	5	
Low economic impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High economic impact
Low environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	High environmental impact

11. Scope and impact of the good practice

National level

12. Describe and justify why the good practice is successful. Please also describe how the good practice will be continued after the funding.

The voucher scheme presents the opportunity to promote the LCA as an internationally standardized methodology that enables Slovenian SMEs to quantify the environmental pressures related to goods and services, the environmental benefits, the trade-offs, and areas for achieving improvements taking into account the full life-cycle of the product. The methodology reflects actual industrial process chains and provides valuable insights for businesses that can bring various benefits, and savings and lower the environmental impact.

13. More information about the GP

Link/etc. <https://podjetniskisklad.si/sl/produkti-sklada/sps-dvojcekdpora-pri-produktih/vavcerski-sistemi/vavcer-za-celostno-vrednotenje-okoljskih-vplivov-lca>

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