

# **Compendium of good practices in implementing sustainability transitions with Cohesion Policy under Policy Objective 2**

**Cohesion for Transitions (C4T) Community of  
Practice**

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Cohesion for Transitions (C4T)  
Community of Practice

C4T Working Group members

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# 1. Introduction

## 1.1 Presentation of the C4T Initiative

### What is C4T?

Cohesion for Transitions (C4T) is a Community of Practice bringing together public authorities and other stakeholders to support cohesion regions in the absorption of EU funds for sustainability transitions. The aim of C4T is to support relevant stakeholders by providing the forum for collaboration, networking, exchanges of good practices, creating solutions, as well as by offering targeted technical expert support to facilitate the implementation of sustainability transitions on the ground.

### Why C4T?

Regions play a significant role in translating the sustainability transitions goals into reality on the ground by phasing out unsustainable technologies, practices, and behaviours. Given the urgency to deliver investments supporting sustainability transitions, there is a need to provide assistance to authorities within regions and Member States in making these a reality.

### Who is in C4T?

The initiative engaged stakeholders involved in implementing transition measures with Cohesion Policy under Policy Objective 2 (PO2) 'A greener, low-carbon transition towards a net zero carbon economy and resilient Europe'. This included Managing Authorities of the European Regional Development Fund (ERDF) and Cohesion Fund (CF) programmes, regional and local authorities, implementing authorities and other public bodies in the areas of environment, energy, and climate, as well as other relevant stakeholders involved in the implementation of Cohesion Policy.

### The C4T Working Groups

In 2023, C4T established **Working Groups on Energy, Environment, and Climate Change** to facilitate the exchange of good practices and knowledge related to the successful implementation of sustainability transitions investments with support from Cohesion Policy. They provide a space for more specific discussions on bottlenecks related to the implementation of investments on energy, climate change and environment. The Working Groups engage 96 stakeholders from 21 Member States including Managing Authorities, intermediary bodies, and other relevant stakeholders as their members. Meeting twice a year, they exchange on their horizontal and thematic-specific challenges in implementing sustainability transitions with Cohesion Policy under PO2 and share existing knowledge and good practices in overcoming such challenges.

Below is a snapshot of the key **priority topics and key challenges** on which each Working Group focused.



The **Climate Change Working Group** focuses its work on areas such as: engagement and compensation of (green and rural) communities and the geography of discontent, Do No Significant Harm and climate proofing in the context of infrastructure (e.g. cleaning rivers, prevention of fires, etc.)

Key issues relate to maintenance and readaptation of crucial infrastructures impacted by severe climate conditions. These can be related to water supply and sewage systems, provision of electricity, heating, and communication networks, along with transportation systems comprising roads, railroads, and ports.



The **Energy Working Group** is focusing on the social impact of the energy crisis and transition, further uptake of production of consumption of renewable energy in areas with lower potential, energy storage solutions, flexibility in the definition of green hydrogen, and the complexity of bioenergy.

Key challenges include: cost and availability of new technologies, regulatory barriers (e.g., land permissions), community awareness, and access to clean energy.



The **Environment Working Group** identified the following as priority topics: biodiversity and nature-based solutions, including environmental practices for protecting cities and settlements (adaptation), water management, circular economy and waste, as well as tackling local pollution.

One of the top challenges faced is preserving and strengthening biodiversity and natural ecosystems, prevent environmental degradation or restore environmentally degraded areas in synergy with climate change actions, which is not always obvious (see for instance efforts to transition to clean energy using biofuels or hydropower, which can, impact ecosystems or lead to land-use changes from forests to crops.)

### The C4T Academic Sounding Board

The C4T Academic Sounding Board (ASB) is a scientific forum composed of distinguished academics who advise on sustainability transitions to the C4T Community of Practice. Linking to the academic community, the ASB offers actionable knowledge to public bodies involved in implementing funds through research at the intersection of Cohesion Policy and sustainable transitions. The ASB has participated in some joint meetings with the Working Groups, provided insights into the challenges identified by Managing Authorities, produced tailored knowledge pieces, and reviewed the good practices shared by the Working Groups collected in this compendium.

## 1.2 Presentation of the Compendium

This Compendium compiles the insights that Managing Authorities and other stakeholders shared during the C4T Working Group meetings held in 2023 and 2024. It is also a knowledge-sharing tool to showcase good practices adopted by Managing Authorities and other stakeholders in implementing transition measures with Cohesion Policy funds under PO2.

### Who is this for?

This Compendium is directed to any Managing Authority or intermediate body in the EU27 that is looking for inspiration and replicable solutions for implementing sustainability transition measures, especially related to implementing investments in energy, climate change and the environment.

### Methodology

The development of the Compendium was guided by a participatory process involving hybrid conferences and workshops as well as online consultations.<sup>1</sup> The conferences gathered the Working Groups members, the ASB and representatives of the European Commission. The Working Group meetings took the form of participatory workshops facilitated by technical experts in energy, climate change and environment with the support of the European Commission. These meetings offered a platform for stakeholders to exchange on cross-cutting and thematic challenges faced by Managing Authorities and other key stakeholders in implementing sustainability transitions investments with Cohesion Policy funds.

The good practices were collected through an open online form on EUSurvey for Working Groups and ASB members, who were also encouraged to share the form with their peers and networks. As a result, not all good practices have the exact same level of detail and presentation while we have adopted a common format to showcase them. These cases were thereafter assessed based on their relevance by technical experts and ASB members. Other criteria used for the selection included their relevance, potential for replicability, and scalability.

### Structure of the Compendium

This compendium is structured in three parts:

#### **PART 1: Challenges in implementing sustainability transitions with Cohesion Policy**

The section presents internal and external challenges to the implementation of projects in the sustainability transition shared by Working Group members. This is complemented by inputs from academics and subject-matter experts involved in the coordination and facilitation of the C4T Working Group meetings. The section considers both procedural and technical challenges.

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<sup>1</sup> Discussions mainly took place during the C4T conferences and forums as well as in four dedicated working group meetings held between June 2023 and October 2024

**PART 2: Good practices**

The chapter presents 8 good practices. They are structured by thematic area: climate change, energy and environment. For each we provide a concise overview fiche as well as contact details of implementing entities to allow interested readers to gain more insights on them.

**PART 3: Conclusions**

This chapter presents conclusions derived from the identified challenges and good practices and follows the outcomes of the discussions during the Working Groups.

## 2 Challenges and good practices in project initiation and implementation

This chapter outlines some of the key challenges identified by Managing Authorities and implementing bodies promoting and implementing initiatives and programmes focusing on climate, energy or environment, which we detail in sections 2.1 and 2.2 below. Where possible, we have distilled key lessons and recommendations for future policy and research originating from discussions in the working groups. Good practices that address some of the challenges are referred to in the text. More information on the good practices can be found in Chapter 3.

### 2.1 Challenges and lessons learnt linked to external factors

The challenges and lessons learnt described below originate from external factors (policy, legislation, technology) and therefore are not linked to the design and delivery of the projects directly. Overcoming them requires close collaboration with other stakeholders, often on a regional, national or European level and the guidance of qualified experts. Ultimately, new knowledge, policy and legislation are needed to attend to these needs.

#### Challenges related to Public Procurement

Public procurement poses significant bottlenecks in climate-resilient infrastructure development. The transformative potential of public procurement in reducing environmental impacts and addressing climate change adaptation is hindered by **stringent regulations for construction sites and an emphasis on cost-effectiveness**, which hamper innovation on local and regional scales. Simultaneously, Managing Authorities voiced their struggle to provide the right incentives for solid environmental and climate-proof projects in the procurement documentation. Regulations, guidelines and standards (including funding standards/guidelines) do not always give full consideration to the needs of climate-proofing projects and promising solutions, such as Nature Based Solutions are not always prioritised politically.

There are two aspects related to public procurement which deserve specific attention:

#### Need for guidance for the implementation of environmental requirements

The introduction of the '**Do No Significant Harm Principle**' (DNSH) is aimed at defining a classification of methods and technologies used for sustainability activities to ensure no significant harm is caused to the environment. Managing Authorities indicated the **need for a clearer understanding of how to practically implement the DNSH principle**. Additionally, a better interpretation of the regional application of climate proofing is necessary. **In particular, sector-specific guidance for the implementation of climate-proofing requirements would be helpful**. More guidance on sustainable climate adaptation is crucial for assessing options, particularly



focusing on inspiring examples and ideas for NBS in different areas and risks. The relationship of green infrastructure and NBS in terms of how to develop comprehensive and practical greenery management with small-scale action (industrials) and larger-scale action (green corridors etc.) is still to be researched.

#### Difficulty in demonstrating adaptation to climate risks

Further, rising temperatures leading to heat waves and droughts and heavy rainfalls inducing floods can have a detrimental effect on crucial infrastructures. Furthermore, urban areas are significantly affected by climate risks. They are often unprepared and due to water levels, face problems exacerbated by poorly managed river catchments and urban sprawl that consumes retention surfaces. Implementing infrastructure projects and NBS poses challenges due to the **difficulty in demonstrating adaptation to climate risks** already at the programming stage and quantifying impacts, such as emission reduction, beforehand.

Therefore, it is key to implement the **climate-proofing process** on all governance levels and understand the risks included in projects. Appropriate questionnaires that are based on the **magnitude of consequences** across various risk areas would be helpful, as outlined in Table 7 of the Technical guidance on the climate proofing of infrastructure in the period 2021-2027 (2021/C 373/01), supporting beneficiaries in assessing climate-related risks.



*The good practice Evolving Regions: Climate Adaptation in North Rhine Westphalia (DE) and Overijssel (NL) developed a guideline for developing roadmaps to the climate adaptation cycle for local and regional authorities, which could be used to address the impact of climate change in various policies.*

#### Access to funding requirements and processes

While numerous funding opportunities exist for infrastructure development (private capital, EU funds i.e. Cohesion Policy Funds, blended funding, public private partnerships and crowdfunding), **challenges arise in complying with funding requirements, including state aid compliance**. Difficulties often lay in the implementation phase and in identifying projects, as these need to fit the various requirements of the different funds, of environmental authorities, and of the impacted population.

The simultaneous opening of numerous calls and the need for expertise, knowledge, time, and human resources for project call preparation are among the difficulties faced. Balancing activities that aim for knowledge creation and on-the-ground implementation of projects in European calls as well as different funding sources increases chances for successful project conduction. Reliable co-financing involving partners with financial constraints (e.g., non-governmental organisations) poses further challenges, especially for urban development projects.



*For more information see the good practice MARTE, from the Marche Region, in Italy, which combines technical assistance and access to funding to support energy efficiency investments in healthcare sector buildings.*

### Challenges related to energy market and legislation

The uptake of renewable energy (carriers) such as green hydrogen, biomass and biofuels and development of necessary infrastructure and storage can be a challenge in the decarbonisation of industry, transport and other sectors driving the European economy. Particular challenges identified include:

- the **cost of renewable options** to be higher than conventional ones,
- unclear **future demand** in the uptake of renewable options,
- the general **public's acceptance** of renewable energy production types,
- difficulties in **integration of projects** due to regulatory barriers,
- unclarity of the **legal framework and certification**.
- **lengthy administrative procedures** and non-uniformity of procedures between different Member States,
- **excessive bureaucracy** hampering the development of renewable energy projects, with a low level of digitalisation, no standardisation of procedures and no one-stop shops that would facilitate procedures,
- **different energy taxation** across EU Member States,
- **constraints in access to the grid**, limiting the possibility of connection to new installations or restraining households to lower-capacity installations in several Member States,
- **low potential** for the production of renewable energy due to local environmental conditions, highlighting the need for self-efficient initiatives,
- **solutions for the uptake in highly densely populated areas**.



*The good practice of building a small hydroelectric power plant on the existing damming threshold in Maków Mazowiecki is an example of how producing renewable energy using existing infrastructure can be a very effective way to reduce energy dependency on other regions.*



*The good practice in Lazio of the implementation of technical-economic feasibility studies of Renewable Energy Communities is an example where the production of energy from renewable sources and self-consumption was encouraged by supporting new Renewable Energy Communities.*

### Market and legislative barriers to circular approaches

Managing Authorities indicate it can be challenging to **promote circular approaches** in projects and practices. New initiatives often face the burden of insufficient market innovations or restricting policies and regulations. Some challenges faced include:

- **Lacking market initiatives** or missing elements in a value chain necessary to reuse or recycle products or resources.
- **Definition of waste**, following from national legislation, e.g. treating it as hazardous substances, prevents it from reuse in other applications.
- **Circular design maximising product lifecycles** is not yet standard practice, resulting in failing business models and preference for conventional construction or use of resources.

The European Circular Economy Action Plan (CEAP) enhances a focus on circular practices and promoting circularity in seven industries, including electronics and information and communications technology (ICT); batteries and vehicles; packaging; plastics; textiles; construction and buildings; as well as food, water and nutrients.

### The long-term benefits of green investments are often overlooked

The long-term nature of green investments can make it difficult to **justify the costs** based on cost-benefit analysis. Quantification of the benefits is often unknown, as for instance green roofs improve the lifespan of building roofs and reduce the energy consumption of a building. However, costs are often emphasised since many of them do not have **established methodologies of quantifying (societal) benefits**. This can make accessing finance more challenging. Additional challenges are related to the longevity of finance and the need to ensure their long-term maintenance and preservation. It may be useful to more systematically collect and quantify information on climate risks as a result of the non-implementation of measures as this provides the “other side of the coin” from the costs of investment.



*The good practice on thermal modernisation of public utility facilities in Węgrów made use of result and outcome indicators that went beyond improving the energy efficiency of public buildings and reduction of emissions. Monitoring impacts beyond these effects can help justify the investment.*

## 2.2 Challenges and lessons learnt - internal factors

These challenges relate to project management, capacity building, stakeholder engagement and other internal factors that are inherently faced in the design and implementation of projects and initiatives. Overcoming hurdles involves among others project and capability management and creation of knowledge, setting and monitoring clear goals and targets and stakeholder engagement.

### Monitoring and assessment of progress to European, national and local targets

Implementing initiatives such as infrastructure projects and NBS poses challenges due to the **difficulty in demonstrating (benefits in) adaptation to climate risks** already at the programming stage and quantifying impacts, such as emission reduction, beforehand. Furthermore, a robust **methodology and key performance indicators (KPIs) for monitoring** are needed to implement projects that feed the purpose of climate resilience and to avoid “greenwashing” of projects financed with European funding. For urban areas, challenges occur in translating heat island effects into guidance and **EU-wide indicators** for building regulation and retrofiting. For sustainability to be transformative, **good assessment criteria** are needed to cover diverse aspects but still with limits of scope. When evaluating applications, the prioritisation of criteria is still an open question.

Furthermore, it is important to learn from successful projects and initiatives and share lessons to **scale-up**. This requires new approaches, along with an exchange of knowledge and expertise and financing instruments. However, practical experience is often still missing. For instance, the relationship of green infrastructure and NBS in

terms of how to develop comprehensive and practical greenery management with small-scale action (industrials) and larger-scale action (green corridors etc.) is still to be researched.



*One relevant good practice is S3UNICA, which focused on enhancing public-private partnerships to scale up energy efficiency and renewable energy on university campuses and other buildings owned by public authorities.*

### Urban planning to mitigate climate change impact

Urban planning has historically neglected mitigation for increasing temperatures, which contribute to heat island effects, and disrupting wind corridors. Integrating green infrastructure can alleviate stress from these events while promoting biodiversity and enhancing mental and physical well-being. Effective solutions require long-term urban and spatial planning, robust governance, and capacity building, as well as citizens who actively participate in mitigating climate impacts.



*The good practice Social Housing Initiative of Mińsk Mazowiecki focused on future-looking urban planning and developed a local spatial development plan that combined social, economic and environmental elements for the construction of social housing.*

### Need for new competencies and more learning exchange

Environmental authorisations and procedures for infrastructure development remain challenging due to a **lack of knowledge and experience, particularly concerning newer developments**. Maintaining in-house knowledge and capacity for planning, funding, and local tailoring proves especially challenging for small and medium-sized enterprises (SMEs) or small municipal administrations.

The establishment of a platform for dialogue and knowledge exchange can foster learning and social innovation. Expertise is needed to implement the concept of climate resilience in **multilevel and horizontal governance and to develop policy recommendations** (European, regional, local). Advisory on the activation and development of regional ecosystems related to climate risks can complement these services.

In addition, the best nature-based solutions are often very specific to the local area. In those cases, **local expertise** related to wildlife or very specific studies on waterflows may be required. In addition, collaborations may need to be tailored for very different local contexts. Studies carried out in the preparatory phase are therefore crucial as in identifying local experts – perhaps from local universities or environmental organisations.



*The good practice School of Bioclimatic Design for Adaptation and Mitigation (SBAM) focused on building competencies among local authorities and practitioners for climate-resilient cities to mitigate the heat island effect and flooding through urban design.*



### Need for tailored stakeholder engagement

**Effective stakeholder management and engagement** present challenges for local and regional authorities. This includes collaborating with a multitude of stakeholders in a penta-helix structure (involving the public administration, businesses, civil society actors, finance, and academia), and getting them to agree on the best solutions. Ensuring **effective communication with beneficiaries** is not only challenging but also vital for raising awareness among stakeholders, including citizens. One method to support stakeholder communication is setting up **regional one-stop shops**. It is furthermore crucial to tailor communication activities to diverse preferences and recognise that not everyone, particularly elderly individuals or vulnerable groups, regularly use the internet underscores the need for tailored channels and strategies. Preventing regional discontent is above all important for the links of urban-rural water infrastructure.



*The good practice of Progetto Manifattura has interesting lessons on the involvement and interaction with local stakeholders. The engagement process was intense but resulted in successful renovation of a historical factory site, while creating an innovative business area.*

### 3 Good practices

This chapter provides a set of good practices shared by Managing Authorities and other key stakeholders involved in the implementation of sustainability transitions using Cohesion Policy funds. The presentation of the good practices is structured across the three main thematic areas of the C4T Working Groups: climate change, energy and environment. The table below offers an overview of the good practices identified.

**Table 1: Overview of good practices**

#	Theme (WG)	Name of the initiative	Country	Implementing agency
1	Climate Change	Evolving Regions: climate adaptation in North Rhine Westphalia (DE) and Overijssel (NL)	Germany and The Netherlands	Social Research Centre of the TU Dortmund University
2	Climate Change	SBAM – School of Bioclimatic Design for Adaptation and Mitigation	Italy	ANCI Emilia-Romagna AESS - Agency for Energy and Sustainable Development
3	Energy	MARTE project: Marche Region Technical Assistance for healthcare buildings energy retrofitting	Italy	Marche Region Department for Land Protection, Management and Planning
4	Energy	The implementation of technical-economic feasibility studies of Renewable Energy Communities in Lazio	Italy	Lazio Region, Italy
5	Energy	Smart Specialisation University Campus project – S3UNICA	Italy	Friuli Venezia Giulia Region, Italy
6	Energy	Construction of a small hydroelectric power plant on the existing damming threshold in Maków Mazowiecki	Poland	Maków Mazowiecki, Poland
7	Energy	Progetto Manifattura	Italy	Autonomous Province of Trento

8	Environment	Adoption of the local spatial development plan for the implementation of the Social Housing Initiative (SIM)	Poland	Mińsk Mazowiecki municipality
9	Environment	Thermal modernisation of public utility facilities in Węgrów	Poland	Węgrów, Mazovia, Poland

## 3.1 Climate

### *Good practice 1: Evolving Regions: climate adaptation in North Rhine Westphalia (DE) and Overijssel (NL)*

#### **Evolving Regions: climate adaptation in North Rhine Westphalia (DE) and Overijssel (NL)**

##### **Implementing agencies**

- Social Research Centre of the TU Dortmund University
- Institute for Spatial Planning of the TU Dortmund University
- German Institute of Urban Affairs (Difu)
- PROGNOS AG
- BEW Bildungszentrum
- University of Twente
- ZDF Digital

##### **Date and place of implementation**

- July 2019 – June 2023
- North Rhine-Westphalia (NRW), Germany, and Overijssel, the Netherlands

##### **Budget**

- EU LIFE environmental programme: 2.000.000€
- National funds from the Ministry for the Environment, Agriculture, Nature Conservation and Consumer Protection of the State of North Rhine-Westphalia: 1,330,000€

##### **Contact person**

Stefan Greiving, TU Dortmund University, Head of Institute of Spatial Planning, [stefan.greiving@tu-dortmund.de](mailto:stefan.greiving@tu-dortmund.de),



URL: <https://evolvingregions.com/>

BACKGROUND	CHALLENGES ADDRESSED
<p><b>The project aimed at developing roadmaps for climate-adaptation action in rural areas and small communities across seven German municipalities:</b> Wesel district, district of Steinfurt, district of Soest, Siegen-Wittgenstein district, district of Minden-Lübbecke, district of Coesfeld, and the Lippe district. One Dutch municipality – Zwartewaterland – was also involved in the implementation.</p> <p>The analysis focused on heat, heavy rain, floods, and drought. The project comprised four components: review of regional processes, interregional exchange, mainstreaming and transfer of solutions, and monitoring.</p> <p>The project also produced guidelines that can be used to replicate the support provided to these regions by the facilitators.</p>	<ul style="list-style-type: none"> <li>• <b>Lack of expertise</b> in climate change adaptation in rural areas and small communities.</li> <li>• <b>Need to join forces across small regions and communities with limited resources</b> to reach common avenues.</li> </ul>
IMPLEMENTATION	
<p><b>Key milestones</b></p> <ul style="list-style-type: none"> <li>• The introduction of the methodology of integrated road mapping helped define the mandate, scoping, forecasting, back casting and the preparation of the roadmap as an integrated planning document.</li> <li>• Facilitating (inter)regional dialogues and encourage regions to work together and exchange lessons.</li> </ul> <p><b>Key challenges</b></p> <ul style="list-style-type: none"> <li>• The project application and its financing were time-consuming due to the co-funding procedure by two different institutions (EU LIFE + federal state NRW).</li> <li>• Data acquisition was difficult because of scattered data, resulting in delays in the project timeline.</li> </ul>	

- In some cases, the regional promoters had difficulties activating other departments in their administrations for climate adaptation.

MONITORING MECHANISMS IN PLACE	TECHNICAL AND HUMAN RESOURCES MOBILISED
<ul style="list-style-type: none"> <li>• Six thematic workshops were set up as the core aspect of the regional component of the project.</li> <li>• Following the workshops, online questionnaires were set up to monitor the results and future plans of the intervention, as well as track the participants' experience and potential drawbacks with implementing the roadmap method.</li> </ul>	<ul style="list-style-type: none"> <li>• Five full-time research staff</li> <li>• Seven part-time local facilitators</li> </ul>
RESULTS AND IMPACT OBSERVED	
<ul style="list-style-type: none"> <li>• The participating regional partners utilised the roadmap method to establish their climate adaptation action points for the future – joining forces and under the guidance of the team of experts, they have been able to define clear goals and directions for their territory; more details on the individual regions can be found <a href="#">here</a>.</li> <li>• Tailor-made roadmaps are created at the end of the regional process. In these integrated planning documents, the measures developed in the process are recorded for each region. Through the five different and successive steps, the integrated road mapping method allows vision-based climate adaptation measures to be developed and collected in a strategic planning document.</li> <li>• The project drafted guidelines for the design of climate adaptation processes. These guidelines intend to help initiators, organisers and facilitators of climate adaptation processes to plan and implement integrated and collaborative processes according to the Evolving Road mapping method. The guidelines (in German) can be found <a href="#">here</a>.</li> </ul>	

**Good practice 2: SBAM – School of Bioclimatic Design for Adaptation and Mitigation****SBAM – School of Bioclimatic Design for Adaptation and Mitigation****Implementing agencies**

ANCI Emilia-Romagna (Emilia-Romagna Regional Association of National Italian Municipalities)

AESS - Agency for Energy and Sustainable Development

**Date and place of implementation**

1<sup>st</sup> edition: autumn 2022

2<sup>nd</sup> edition: spring-autumn 2023

**Budget** EUR 80 000 per edition, for a total of 2 editions

**Financing sources:**

National funds from the Ministry of the Environment focused on climate adaptation pilot actions and experimental projects. Scope were municipalities with less than 60.000 inhabitants.

**Contact person:**

Francesca Poli - AESS

BACKGROUND	CHALLENGES ADDRESSED
<p>A conscious design of public spaces using NBS and sustainable urban drainage systems (SUDs) allows for widespread climate change adaptation actions that can significantly improve the comfort of urban areas: mitigating the heat island effect, avoiding local flooding, improving air quality, and stimulating social inclusion. Against this backdrop, the SBAM project invited public officers and technicians from 11 municipalities in the Emilia Romagna Region to a training course focused on resilience and climate adaptation strategies. The goal was to develop new skills concerning urban climate adaptation among practitioners and policy makers.</p> <p>The main topics covered by the training course were urban design and the regeneration of public spaces. For what concerns climate adaptation the focus was on increased quality and social function by rethinking the use of greenery, stormwater management, using permeable materials, and integrating soft mobility infrastructures. SBAM can also be considered an outreach and training opportunity aimed at creating a network of competent professionals ready to implement adaptation strategies across regions.</p>	<ul style="list-style-type: none"> <li>• <b>Mitigate heat island effect and flooding through urban design</b> and regeneration</li> <li>• <b>Build competencies for climate-resilient cities</b> among local authorities and practitioners</li> </ul>

## IMPLEMENTATION

### Key milestones:

- Municipalities were supported to get funding from the Ministry by AESS.
- Once the municipalities were awarded the projecting and planning phase started.
- 2 training waves were organised. Every municipality could send up to 5 people.

Each edition of the training comprised:

- 50 participants in class
- 280 technicians/professionals connected online to webinars
- 14 speakers
- 5 lectures + group activities at the end of the lecture
- 2 study visits, to Rimini and Medicina (Bo) to visit implemented projects and NBS construction sites
- 3 days of intensive workshops
- 10 microclimatic analyses with the Envimet software (one per municipality)

### Key challenges:

- Policymakers usually have limited competencies and knowledge on these themes – there is therefore limited awareness on new approaches and the training tended to be more technical and for professionals. To be seen how to engage more policymakers who ultimately have decision making power is a key challenge for future editions.
- Identify the participants of each municipality to engage in the training given the limited time and human resources available. In small municipalities there was no capacity, in larger ones they were very compartmentalised and a multi-sector approach was needed for the training.

### MONITORING MECHANISMS IN PLACE

There was no specific monitoring system in place, however:

- Catalogue to map NBS pilot projects in Emilia-Romagna (informal scouting of ongoing projects) to see if those who attended the training followed up with a project in this area.
- Informal networking of NBS addicted and SBAM followers is used to monitor any follow-up activity from the training.

### TECHNICAL AND HUMAN RESOURCES MOBILISED

- AESS staff (1 NBS expert + 1 facilitator + 1 graphic designer + 2 people for logistics)
- local and regional experts and teachers

## RESULTS AND IMPACT OBSERVED



- Increase capacity building and awareness on the topics in the scope of the training.
- High interest among beneficiaries, up to 250 online participants also beyond the region that could benefit from the training. Municipalities, practitioners and experts could participate even if not from the selected municipalities in streaming.
- Requests for a third edition of SBAM.
- One year after the region has funded pilot projects for adaptation, and several of the winning projects were by municipalities which had attended the training.
- Creating a community of practice among participants and municipalities and practitioners that can cooperate and also share learning.
- Facilitating contacts among practitioners and municipalities which have common challenges in the region.
- Plan is to expand and replicate in the future in other regions like Puglia and Tuscany if resources can be found.

## 3.2 Energy

### Good practice 3: The MARTE Project

#### The MARTE Project

##### Implementing agencies

- Marche Region Department for Land Protection, Management and Planning
- AESS
- ASUR
- Università Politecnica delle Marche

##### Date and place of implementation

March 2014 – June 2017 in Marche Region, Italy

##### Budget

- Technical assistance: MLEI PDA € 570.000
- Energy retrofit investment: € 11,923,371.83 (VAT included)

##### Financing sources:

- The Intelligent Energy Europe – IEE programme, under the MLEI PDA (Mobilising Local Energy Investments – Project Development Assistance)
- Investment: Private capital with Energy performance contracts integrated with Regional Operational Programme (ROP) of European Regional Development Fund – ROP Marche ERDF 2014-2020

##### Contact person

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BACKGROUND	CHALLENGES ADDRESSED
<p><b>The project provided technical assistance and funding to support energy efficiency investments in healthcare sector buildings.</b></p> <p>The Marche Region ROP ERDF 2014-2020 was adopted by the European Commission in February 2015 and includes seven priority axes. Axis 4 “Supporting the transition towards a low-carbon emission economy in all sectors”, covers investments aimed at developing energy efficiency and reducing greenhouse gas emissions, especially in enterprises, public buildings, public lighting systems and local public transport in urban areas, with a total funding of EUR 65,449,929 (19.4% of the programme’s resources).</p> <p>In the document implementing the ROP ERDF (Regional Government Decree no.1143 dated 21 December 2015), Axis 4 action 13.1.1 was dedicated specifically to energy requalification of the healthcare facilities identified under the MARTE project, which devolves a grant of EUR 4,379,000 to ASUR Marche.</p> <p>The goal of the project was to create innovative financing models and strategies to support energy efficiency investments; combining the technical assistance of the Intelligent Energy Europe Programme with structural funds. The approaches and support provided are relevant also outside the healthcare sector and can be tuned to other public buildings.</p>	<ul style="list-style-type: none"> <li>• <b>Access to the necessary financial stream</b> is a key challenge. Most existing public and private funds available are very fragmented; structural funds are needed for these types of interventions but are not easy to access.</li> <li>• <b>Technical assistance</b> is also needed to support local and regional authorities in accessing and managing funding.</li> </ul>
IMPLEMENTATION	
<p><b>Key milestones:</b></p> <ul style="list-style-type: none"> <li>• Establishment of a procedure for energy audits and for assessing energy retrofit actions in healthcare sector buildings.</li> <li>• Assessment of the energy performance in healthcare sector buildings in planning actions for improving efficiency.</li> <li>• Development of Energy Performance Contracts (EPC) tender for healthcare sector buildings.</li> <li>• Setting up of an “Energy Fund” with European structural and investment funds.</li> </ul>	

- Capacity building of policymakers on EPCs in the public sector.
- Impact assessment of the project.

**Key challenges:**

- Procedural: difficulties in the integration of structural funds with a large investment programme
- Technical: complexity in energy audit and retrofit intervention in hospital facilities

**MONITORING MECHANISMS IN PLACE**

- Structural fund reporting
- EPC contract management with performance indicators

**TECHNICAL AND HUMAN RESOURCES MOBILISED**

- Twelve Technical assistance experts
- Eighty Investment implementation experts
- Six Contract managers

**RESULTS AND IMPACT OBSERVED**

- Five healthcare buildings retrofitted: Hospitals at Pergola, Urbino, and San Benedetto del Tronto, and Polyclinics and Nursing Sant'Elpidio a Mare and Petritoli
- Avoided GHG emissions (tCO<sub>2</sub>e/year): 2148 t CO<sub>2</sub> e/year
- Primary energy savings (toe/year): 1041 tep/year
- Total amounts of EE investment: 11.923.371,83 € (VAT included)

**Good practice 4: The implementation of technical-economic feasibility studies of Renewable Energy Communities in Lazio****The implementation of technical-economic feasibility studies of Renewable Energy Communities in Lazio****Implementing agencies**

- Lazio Regio, Italy

**Date and place of implementation**

- December 2022 – active

**Budget**

- EUR 1,000,000 in combination from 2014-2020 ERDF funds and 2021-2027 ERDF funds

**Financing sources**

- ERDF funds

**Contact person**

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**BACKGROUND****CHALLENGES ADDRESSED**



**The objective of this action by the Lazio Region was to encourage the production of energy from renewable sources and self-consumption by supporting new Renewable Energy Communities.**

Through a competitive call for proposals, the region supported a selection of communities with technical assistance (TA) from the University La Sapienza and technical-economic feasibility studies by individual experts. This initiative responds to the ambition of creating energy communities as envisaged by art. 31 Legislative Decree. 8 November 2021, n. 199 and subsequent amendments. On “Implementation of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources”.

The beneficiaries of the funding were natural persons, SMEs, territorial bodies and local authorities, research bodies, third sector and environmental protection bodies and local administrations. They were selected based on the following criteria. A) size and organisation of the renewable energy community, b) its energy benefit, and 3) social impact.

One of the key innovative aspects is the fact that also private entities and communities not yet associated could be supported (legal expenses to be registered as an energy community were also covered by the fund).

- Need to **involve and empower communities** in for a just and inclusive energy transition
- Need to **reduce dependence on the fossil fuels-based national electricity system** encouraging bottom-up initiatives

## IMPLEMENTATION

### Implementation steps:

- The region funded a 300.000 research project by the university to prepare the tender and meet the municipalities to raise awareness on energy communities, and relevant economic models applicable in the territories. This research created the foundations and generated ownership among key stakeholders and was instrumental in empowering them to apply.
- Extensive promotion and support to applicants was provided (Q&A and at least 6 information sessions) to help them respond to the tender.
- 50 current or potential energy communities were selected, at the end 43 projects were funded.
- University La Sapienza was providing TA to the selected applicants for the feasibility studies, which could be performed by individual experts designated ad hoc for each community.

**Challenges**

- Legal obstacles – a law providing direction on energy communities has been in place only since March 2024 – the lack of a clear legal framework has hampered implementation of actions by the communities. This also leads to long bureaucratic procedures
- Resources had to be anticipated by beneficiaries – then were refunded. For smaller entities this model creates a liquidity problem and limits participation for those that have no resources upfront.
- There was a short time for the proposal preparation, not taking into account the long time required for all administrative steps required especially for those communities not yet registered.

**MONITORING MECHANISMS IN PLACE**

University Sapienza and LazioInnova have regularly monitored the use of the funds during the TA implementation

**TECHNICAL AND HUMAN RESOURCES MOBILISED**

- University La Sapienza and representatives from LazioInnova
- Regione Lazio overseeing implementation
- Civil society organisation to reach out communities in different territories

**POTENTIAL RESULTS AND IMPACT OBSERVED**

- 43 feasibility studies have been completed; directly and indirectly. The action has led to the creation of new energy communities in the region also thanks to the awareness raising generated by the initiative.
- Social criteria were very innovative – this led to the creation of about 20 “social” energy communities (focused on energy poverty and just transition-related issues) to which the action has contributed. These have also created specific networks to foster coordination.
- Several communities were supported outside Rome – at least half were in small towns and more rural territories.

- The communities are now able to access further funding as a follow-up and scale up of the action (PNRR and other EU funds for which they are no eligible).
- The university has launched a master programme on this subject - further research and work on the theme will continue.

### **Good practice 5: Smart Specialisation University Campus project – S3UNICA**

#### **Smart Specialisation University Campus project – S3UNICA**

##### **Implementing agencies**

- Friuli Venezia Giulia Autonomous Region, Italy (Lead Partner)
- Universities of Trieste and Udine, Italy
- Alba Iulia Energy Agency, Romania
- Andalusian Energy Agency, Spain
- University of Malaga – UIDEE, Spain
- South Karelia Region, Finland
- University of Lappeenranta, Finland
- Association of Municipalities Polish Network “Energie Cités”, Poland

##### **Date and place of implementation**

- August 2019 – July 2023

##### **Budget**

€ 1,538,662.00

##### **Financing sources**

ERDF; national funds

**Contact person**

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**BACKGROUND**

The “Smart Campus” project was supported by DG REGIO as a pilot initiative under the call for expression of interest for “Thematic Partnerships to pilot interregional innovation projects”, within the S3 Partnership on “Sustainable Buildings. It represents and utilises principles of learning, connecting, and demonstrating to boost a tailored approach to support concrete actions among regions.

The project addressed the crucial use of **public private partnerships** (PPP) and innovation procurements to ensure a broad execution of energy efficiency actions in universities and other buildings of public authorities.

In particular, it emphasised the role of universities in regional innovation policies, by **providing specialist research and technical expertise in the field of energy sustainable buildings and by offering campuses as a hands-on lab** where to implement these innovative solutions. Universities involved in the project can contribute to regional knowledge exchange and its translation into innovative energy products, solutions and public/private services.

**CHALLENGES ADDRESSED**

- **Capitalise on the experience of the "Smart Campus" project** through knowledge creation and improving the energy efficiency of university campus buildings and infrastructures,
- **Promoting symbiosis** with regional authorities and the development of innovative solutions throughout the value chain associated to energy saving and smart grid developments.
- **Defining a common methodology**, using the new Energy Performance of Buildings directive and its Smart Readiness Indicator to be implemented in future iterations of the project.

**IMPLEMENTATION**

**Key milestones:**

- Creation of a working group within the Sustainable Building Partnership, including research organisations, private companies and clusters focusing on energy generation and distribution systems and energy use in university buildings towards more efficient and innovative campuses.
- The Udine campus has successfully set up a heating district with PPP investments that connects the campus to the city, thus realising a symbiosis with the regional territory. The Trieste campus, part of the so-called Trieste Research System, has set up a promising program for energy monitoring, distribution and generation among campus buildings. The Malaga (Spain) and Lappeenranta (Finland) campuses are also considered as hands-on labs that will allow testing energy saving solutions and share results at interregional level. Moreover, the choice of these campuses is strategic because they represent a variety of solutions applied to different typological buildings (ancient, modern and high tech) and different climatological characteristics.
- Adoption of a set of guidelines to foster a consistent knowledge and use of PPPs by public administrations.
- Creation of an online support tool for university applicants submitting energy efficiency projects with the regional programme 'Centru' in Romania.
- Implementation of a specific working group called REDEJA.

**Key challenges:**

- Contributing to the foreseen "entrepreneurial discovery" process to influence regional policy, starting from university achievements and involving all the quadruple helix actors in the 6 partner countries involved.
- Implement the actions of the 5 Action Plans presented as output of the project second phase.

**MONITORING MECHANISMS IN PLACE**

- The Joint Secretariat of the Interreg Europe Programme has verified the 5 Action Plans, asked for 2 rounds of clarifications, finally approved them and transferred the final co-financing amount.

**TECHNICAL AND HUMAN RESOURCES MOBILISED**

- Officers and professors of the public bodies and universities involved.

- Regional stakeholders of the partner countries.
- Other public entities private companies, energy clusters invited to the final event organised in April 2024 in Trieste

## RESULTS AND IMPACT OBSERVED

- Both representatives of the partners and of some stakeholders have expressed their willingness to continue working together, even after the project ended. In particular, the lead partner and the 2 Italian universities established a table of experts with a quadruple helix approach which involved all parties from the FVG Region, the universities, stakeholders and other representatives at the regional level.
- The table enabled the design of guidelines to support local public actors in the design, planning and activation of innovative public-private partnerships for energy efficiency in buildings through the relevant public tender procedures
- In June 2023, the guidelines were approved by the regional council as an addendum to the Regional Energy Plan.



**Good practice 6: Construction of a small hydroelectric power plant on the existing damming threshold in Maków Mazowiecki****Construction of a small hydroelectric power plant on the existing damming threshold in Maków Mazowiecki****Implementing agencies**

The Town of Maków Mazowiecki – a local government unit

**Date and place of implementation**

May 2020 – September 2023, Maków Mazowiecki

**Budget**

EUR 1,826,116.19 (PLN 7 909 091.81)

**Financing sources**

Regional funds, namely from the subsidy of the Marshal's Office of the Mazovian Voivodeship and from own funds.

**Contact person**

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BACKGROUND	CHALLENGES ADRESSED
<p>This project is an example of <b>old-site reconversion for the production of clean energy</b>. In the 1960s a damming threshold which was part of an old power plant was converted for flood protection. However, the threshold and area around the retention reservoir needed investments to rationalise water management in the river valley and the town needed an autonomous, green source of electricity, which is what this intervention provided. The outcome was the construction of small hydroelectric power plants. It is possible</p>	<ul style="list-style-type: none"> <li>• <b>Urban requalification</b> of old/unused infrastructures and improvement of urban landscape</li> <li>• Need to <b>boost clean energy production at the local level</b> to</li> </ul>

to implement similar solutions in other places where there are damming structures on rivers (including lowland rivers such as Orzyc).

decrease dependence on national electricity provision

## IMPLEMENTATION

The most crucial stage for the implementation of the task was the design phase; the implementation of the investment task was commissioned in the design and build formula.

### Key challenges

Procedural issues:

- Stakeholders in the hydrotechnical industry had diverged options on the design of the plan, given the peculiar and quite innovative nature of this reconversion project.
- There were also some bureaucratic impediments and delays in obtaining relevant administrative documents to authorise the construction.
- Finally reaching an engagement and agreement on the construction plan with the government administration bodies requested extended discussions.

Technical challenges:

- Force majeure events: the COVID-19 pandemic, the armed conflict in a neighbouring country and the increase in the prices of materials caused by high-inflation.
- Problems with the availability of not only materials, but also specialised equipment used for hydrotechnical works during the construction works.

## MONITORING MECHANISMS IN PLACE

## TECHNICAL AND HUMAN RESOURCES MOBILISED

The operation of a small hydroelectric power plant is monitored on a daily basis using dedicated software available from the employees of the City Hall, who analyse the degree of production and energy consumption by public utility facilities connected to the plant.

- The town of Maków Mazowiecki was only responsible for coordinating the tasks and employing industry inspectors to supervise the investments.
- Specialised staff responsible for the development of the design documentation for the construction employed by the contractor.
- External entities specialising in the hydrotechnical and electrical industries to prepare documents preceding the procurement procedure, e.g. the concept and the functional and utility program.

#### POTENTIAL RESULTS AND IMPACT OBSERVED

- The operation of the power plant allows for the reduction of energy dependence on the national energy system.
- The requalification of the damming structure made it possible to unblock the pedestrian route leading through the power plant area and connecting again the city and the areas located by the reservoir. At the same time, the attractiveness of the area around the power plant and the accompanying water reservoir has been increased.
- Already in the first month of operation, the power plant ensured 80% electricity savings. It is expected to reach 100% of the electricity production and fully cover local demand.
- The hydroelectric power plant is part of a broader investment programme on the river, which also results in better-maintained areas around the reservoir, improvement of the aesthetics and safety of riverside areas (both in terms of protection against flooding and safety of people staying in the area of the reservoir).

**Good Practice 7: Progetto Manifattura – Industrial innovation hub in Trento****Progetto Manifattura – Industrial innovation hub in Trento****Implementing agencies**

Trentino Sviluppo Spa – in-house agency of the Autonomous Province of Trento

**Date and place of implementation**

May 2018 – July 2020, Rovereto – Borgo Sacco, Trentino-Alto Adige, Italy

**Budget**

EUR 54,900,000

**Financing sources**

The ERDF Programme contributed EUR 6.4 million (11,63% of the total budget) to the project. The remaining 48,5 million euro was financed by the national fund for development and cohesion (FSC).

**Contact person**

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**BACKGROUND**

The aim of the project was to **recover a dismissed tobacco factory by creating an industrial innovation hub**. The project was centred around innovative, cultural and urban development which combines research with industrial production. The peculiarity of this project is that it was developed in a symbolic place for the city of Rovereto. The area has been occupied by the Tobacco Factory for a very long time, making it a sort of industrial “fortress”. The masterplan of the project has been entrusted to a selected group of international

**CHALLENGES ADRESSED**

- **Need for more energy efficiency measures** to reduce greenhouse gas emissions
- Promoting renewable energy in accordance with **Renewable Energy**

professionals, such as the architect Kengo Kuma and Carlo Ratti, along with a group of local professionals, so to give the project an international vision while preserving its local roots.

The project is replicable both in terms of the technologies and societal approaches used; since abandoned buildings are unfortunately a trend common not only in Italy, but also in other EU countries, finding common solutions could certainly benefit the society as a whole.

**Directive (EU) 2018/2001**, including the sustainability criteria set out therein

## IMPLEMENTATION

### Key milestones:

- The project took many years to develop. In 2005 the local government first started to think about the construction of a technological district on the territory. This led to the subscription of a Memorandum of Understanding (MoU) with business stakeholders, resulting in the constitution of the technological district “Habitech”.
- Following the MoU, the former tobacco factory, which risked being yet another abandoned site, was acquired by the local government and the design phase for “Progetto Manifattura” officially began.
- The next step consisted in restoring the historic building and demolishing the old industrial buildings, preparing the area for the realisation of the new low-carbon building complex. In 2018, the tender for the construction of the new complex was officially awarded. In July 2020, the building complex was completed, offering itself as an innovative place for start-ups, enterprises and many others.

### Key challenges:

- Economic operators participating in the selection presented different appeals which inevitably delayed the work schedule. This frequent practice in tenders can sometimes jeopardise the very nature of the project, since what was innovative when the tender was launched is not automatically innovative when the tender is awarded, if too many years elapse from one moment to the other.
- When the project was drafted it was highly innovative for what concerns its energy strategy; the technologies and the scope of the project were part of an extremely progressive and avantgarde vision, which then proved to be correct. With Progetto Manifattura, the autonomous Province of Trento invested in technologies which were not so popular at that time, especially for a mountainous region; in spite of this, the province bet on this project

because it had a vision in which it strongly believed. Today, it can be said that the province guessed right as the technology chosen has now become a standard also for large scale interventions.

- Participatory planning was certainly a plus as it allowed the project to be fully accepted and embraced by the community, creating an added value which should not be underestimated. At the same time, however, this type of planning inevitably requires more time, as it entails involving the community in all the different stages of the project, slightly delaying the schedule.

MONITORING MECHANISMS IN PLACE	TECHNICAL AND HUMAN RESOURCES MOBILISED
<p>The progress/results are registered in the monitoring system of the Programme, called SI-FESR.</p>	<ul style="list-style-type: none"> <li>• International professionals such as Kengo Kuma were involved in the project. Their “signature” is evident in the use of wood and stone, which can be easily obtained by certified local industries.</li> <li>• The engineering bureau ARUP was involved from an energy point of view.</li> <li>• The new building complex falls in the A+ energy class and has obtained the certifications LEED GOLD and ARCA Platinum, as proof of the great attention of the project to sustainability.</li> </ul>
RESULTS AND IMPACT OBSERVED	



- With regards to the specific objective of reducing energy consumption of public buildings, the project led to a reduction of annual primary energy consumption of public buildings equal to 1.348.967 KWH/A and to an annual estimated reduction of greenhouse gases equal to 276,83 tonnes of CO2 equivalent.
- With regard to the industrial innovation hub the results are the following. Out of 31 modular spaces, 19 are permanently occupied, 6 are under negotiation and 3 will soon be occupied. Hence, the total occupation rate reaches 90% of the total surface available. In line with the Smart Specialisation Strategy 2021-2027, the companies settled in BeFactory Manifattura act mostly in the fields of sustainability, energy efficiency, circular economy, smart building and quality of life.
- The value added of the intervention is the fact that the site has been completely restored but with a dual purpose: maintaining and giving value to the historic building and rebuilding the industrial part of the site innovatively and efficiently. The local community has actively participated to the project and a great attention has been paid on environmental issues.
- The value-added given by the architectural and urban design encourages the dialogue with the surrounding urban fabric, functioning as a driver for the local economy and as a catalyst for new initiatives on cultural development and models of work-life balance. The project focuses particularly on young people and on jobs of the future, with the aim of avoiding depopulation and contrasting brain drain.

## 3.2 Environment

### ***Good practice 8: Social Housing Initiative (SIM) - Mińsk Mazowiecki: adoption of the local spatial development plan***

#### **Social Housing Initiative (SIM) - Mińsk Mazowiecki: adoption of the local spatial development plan**

##### **Implementing agencies**

SIM Mińsk Mazowiecki sp. z o. o. was established, whose shareholders are:

- the Municipality of Mińsk Mazowiecki
- the Town of Mińsk Mazowiecki
- the State Treasury represented by the National Real Estate Resource

##### **Date and place of implementation**

November 2021 – December 2028, Mińsk Mazowiecki

##### **Budget**

- Local spatial development plan: EUR 1732,35 (PLN 7503)
- SIM investment: in the process of being determined by SIM Mińsk Mazowiecki sp. z o. o.

##### **Financing sources**

- Municipal funding – adoption of the local spatial development plan
- SIM – non-refundable funds from the Government Housing Development Fund, ultimately funds from the Subsidy Fund and a preferential loan from Bank Gospodarstwa Krajowego are to be released, part of the construction costs will be financed from the participation (own contribution) of future tenants

##### **Contact person**

Anna Wycech, Climate Policy Unit of the Marshal's Office of Mazowieckie Voivodeship, [anna.wycech@mazovia.pl](mailto:anna.wycech@mazovia.pl)

URL: [SIM Mińsk Mazowiecki – Społeczna Inicjatywa Mieszkaniowa | Mazowsze Centrum \(simminskmaz.pl\)](#)

BACKGROUND	CHALLENGES ADRESSED
<p>The goal of this project is the design and implementation of a <b>spatial development plan including social housing</b> that can represent a model living space offering access to social and environmental economic services. The initiative originated from the will of the Municipal Urban Planning and Architectural Commission and a team of experts from the Association of Polish Cities (meetings during the implementation of the "Local Development" programme financed by the European Economic Area Financial Mechanism 2014-2021 and the Norwegian Financial Mechanism 2014-2021, the so-called Norway Grants). The principles on which this intervention is built include: municipal participation in social rental housing, providing social housing of moderate rent specifically targeting citizens of the town who do not have creditworthiness or whose income is too high to be awarded a municipal flat. The concept of the SIM provides for the availability of important services while contributing to energy efficient construction. The solution can be replicated and scaled both in Poland and across Europe.</p>	<ul style="list-style-type: none"> <li>• <b>Need to reduce the gap in the housing market</b> for beneficiaries who do not have sufficient creditworthiness.</li> <li>• Promoting energy efficiency measures and <b>reducing greenhouse gas emissions in buildings.</b></li> <li>• <b>Enhancing protection and preservation of nature,</b> biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution.</li> </ul>
IMPLEMENTATION	
<p><b>Key milestones:</b></p> <ul style="list-style-type: none"> <li>• The preparation of the spatial development plan was the first step, necessary to increase the supply of municipal flats for rent. The plan was necessary for the efficient implementation of the concept of a model housing estate and to ensure that the investment is carried out in a well-thought-out manner and in accordance with current urban planning standards.</li> <li>• The plan foresaw spaces in multifamily buildings for social, recreation or commercial facilities, thus boosting the local labour market and promoting social aggregation.</li> </ul>	

- The plan furthermore specified detailed parameters regarding the share of biologically active area, as well as the location of green areas (including street greenery) and rainwater management throughout the area, in line with the principles of adaptation of the future housing estate to climate change.

**Key challenges:**

- The main challenges were encountered during the consultations for the local spatial development plan. The trickiest aspects concerned single-family housing in the areas which had to be incorporated in the plan.

MONITORING MECHANISMS IN PLACE	TECHNICAL AND HUMAN RESOURCES MOBILISED
<ul style="list-style-type: none"> <li>• This intervention is not directly linked to a performance monitoring mechanism, but its impact will be reported in the town's strategic documents.</li> </ul>	<ul style="list-style-type: none"> <li>• Three employees in the Department of Spatial Management and Real Estate of the Mińsk Mazowiecki Town Hall</li> <li>• One external urban planner</li> </ul>
RESULTS AND IMPACT OBSERVED	
<ul style="list-style-type: none"> <li>• The local spatial development plan has been adopted successfully. The expected impact of the plan is to create a model living space in Mińsk Mazowiecki with access to the full spectrum of social and environmental economic services.</li> <li>• The current expectation is the construction of approx. 540 flats for approx. 1,500 residents.</li> <li>• The plan provides clear guidelines for the construction of a new housing estate, including provisions that take climate change into account.</li> <li>• The adoption of the plan enabled the urban planner to prepare an architectural and construction design of multi-family buildings on the estate, submit an application for a building permit and obtain financing from the National Development Bank.</li> </ul>	

**Good Practice 9: Thermal modernisation of public utility facilities in Węgrów****Thermal modernisation of public utility facilities in Węgrów****Implementing agencies**

Town of Węgrów – local government

**Date and place of implementation**

November 2015 – December 2020, Town of Węgrów

**Budget**

EUR 1,913,567.52 (PLN 8,303,352.18)

**Financing sources**

- Value of co-financing from the European Union funds: PLN 5,006,232.01 gross, which constitutes 80% of eligible expenditure (1,153,722.35 EUR) from the Regional Operational Programme for the Mazowieckie Voivodeship 2014-2020
- Town of Węgrów funds

**Contact person**

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**BACKGROUND**

The aim of the project was a deep renovation of public buildings to reduce the consumption of energy and improve the quality of life of its residents. The town of Węgrów owns a few public buildings which weren't energy-efficient, especially in the case of heating. That caused costs for the environment, the town itself, and was problematic for some specific groups of citizens (like children in kindergartens and schools or

**CHALLENGES ADDRESSED**

- **Concerns for the natural environment** and health, as well as a **need to improve the quality of life** of residents (beneficiaries

elderly people in the daycare centre). The investment was also meant to limit the low emission of smog as well as to serve as a model of energy efficiency for the town's citizens.

are residents utilising modernised buildings)

- **Promoting energy efficiency measures** and reducing greenhouse gas emissions

## IMPLEMENTATION

### Key milestones:

- The key stages were the investment implementation phase from the announcement of the tender procedure for the selection of the contractor through the entire construction process. The beneficiary of the project was the Town of Węgrów, while the final recipients are all residents of the municipality and the surrounding area, users of the above-mentioned buildings.
- The Town of Węgrów, as an investor, applied for funding and obtained funds for the implementation of the investment, while the parties involved in the implementation were also institutions in the area whose intervention was carried out, i.e. schools, kindergarten, Registry Office and Day Care Home.

### Key challenges:

- The COVID-19 pandemic was a challenge during the implementation of the investment, during which the entire construction process took place.
- The supply chain was disrupted, which resulted in excessive waiting times for individual components necessary to fulfil orders. Numerous illnesses caused shortages of workers, which resulted in downtime in the use of machinery and prolonged the process.

## MONITORING MECHANISMS IN PLACE

## TECHNICAL AND HUMAN RESOURCES MOBILISED



- The beneficiary ensured the sustainability of the project's outputs (through output indicators) throughout implementation. The indicators are monitored throughout the project's durability, i.e. 5 years.

- A dedicated team in the city administration was responsible for the project design, procurement, supervising the implementation and monitoring of indicators.
- The Town of Węgrów, as an investor, applied for funding and obtained funds for the implementation of the investment, while the parties involved in the implementation were also institutions in the area whose intervention was carried out, i.e. schools, kindergarten, Registry Office and Day Care Home.

## RESULTS AND IMPACT OBSERVED

- After the completion of the investment, the Town of Węgrów carried out ex-post audits of the buildings, which showed that the intended target values of the result indicators had been achieved:
  1. Estimated annual decrease in greenhouse gas emissions [tonnes of CO2 equivalent] - 382,96
  2. Reduction of annual primary energy consumption in public buildings [kWh/year] - 143.38
  3. Reduction of final energy consumption GJ/year - 787.92
- The implementation of a comprehensive thermal modernisation of the buildings covered by the project brought economic and social benefits:
  1. Improvement of working conditions and functioning of buildings.
  2. Increase in the value of real estate, i.e. public utility buildings implemented as part of the project through comprehensive thermal modernisation co-financed by EU subsidies.

3. Better visual and functional effect of the public utility buildings implemented as part of the project.
4. Improvement of the environment – positive impact by reducing the emission of exhaust gases into the atmosphere, which will improve the purity of air and water and will also reduce the greenhouse effect.
5. Increasing the profit of the entity carrying out the construction works and increasing the wages of the persons employed in the implementation of the project.

## 4 Conclusions

This short concluding chapter summarises some of the key observations and takeaways captured in the Compendium and from discussions with the C4T Working Group members.

- There are some crosscutting difficulties faced by Managing Authorities, which are not depending on the specific topic/area of application and are therefore crosscutting to the three working groups. These are linked to factors such as a lack of capacity and competencies among public administration bodies, fragmented access to funding and long and cumbersome administrative processes to design, and the set up and implement projects. They require **policy and technical support to build competencies** at the local level. Initiatives which combine the technical assistance and access to funding support are very welcome in this respect, especially when it comes to small municipalities or regions that otherwise would not be able to participate.
- Most regions who have received some support, have in the aftermath been able to access new, **larger funding to pilot or scale up their initiative**. This suggests that even small-scale initiatives like those listed in this Compendium can create new connections, raise awareness and build those basic competencies needed to access the various national and EU opportunities which are out there and remain often out of reach for several regions.
- **Public procurement** remains a significant challenge for most Managing Authorities. Calls for innovative projects focusing on Public Procurement specifically could generate new interesting and replicable approaches to tackle the most common challenges posed by it.
- Successful projects will meet multiple needs and objectives and have a **cascade effect**: infrastructure rehabilitation can also foster urban landscape and improve social cohesion by promoting the use of shared spaces and new connections. Integrated approaches to greening cities and regions are in that respect powerful, as they combine economic and social benefits for local communities with energy and climate-related objectives, thus contributing to a more inclusive and just transition.
- The transition to a greener, carbon-neutral continent requires significant efforts and resources. Not only is it crucial to spend additional funding on innovation and piloting, but **existing funding and financing schemes should be brought in line with the European Union's ambitions**. Including externalities that increase the risks of successful implementation of projects eases investing in NBS or promoting circular strategies.
- Existing **infrastructures** such as the energy and transportation infrastructure, housing and public buildings need to be **prepared for a climate-neutral and climate-resilient Europe**. This affects Europe's citizens and businesses daily. It is therefore crucial to engage stakeholders early on and empower them to take action to scale up initiatives and ensure a widespread transition.

As C4T continues and will soon begin a second phase, there are also some recommendations the C4T Secretariat would like to share and leave as inspirations for the future.

- This first phase of the project has allowed an in-depth analysis and categorisation of key challenges Managing Authorities face. In particular, for those that are related to internal factors, the C4T Secretariat would advise targeting the search for new good practices in order to **match those challenges that have so far remained largely unexplored** or for which few good practices could be found.
- It would be interesting to explore whether any of the good practices can be **replicated in another region**. In that respect, C4T could facilitate matchmaking exercises, which could be supported by its technical assistance mechanism (Groundwork).
- It is key that Working Groups' **discussions maintain a close alignment with the objectives of Cohesion Policy and the C4T initiative overall**. By focusing on relevant challenges, the Community of Practice can deliver more comprehensive and impactful support, leveraging C4T Groundwork's technical assistance and the academic insights provided through the Academic Sounding Board's Knowledge Pieces. In this regard, it would also be important for Working Groups to begin exploring possible avenues for the **next programming period**, so to inform and contribute to future decisions on policies and funding allocations.
- Finally, while the thematic focus of the Working Groups should be retained, **more crosscutting exchanges**, especially given the nature of key challenges, can be encouraged and facilitated both offline and in the realm of upcoming meetings.