





# D6.1. Report on available good practice and success stories from Focus Districts

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# **Dissemination Level**

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# **Executive Summary**

The aim of the deliverable is to provide a comprehensive overview of the good practices and success stories observed in the four Focus Districts within the Simply Positive project. These districts serve as crucial testbeds for sustainable urban development and energy transformation initiatives. By synthesizing the lessons learned and best practices, this document aims to inform stakeholders (such as services beneficiaries, municipalities, politicians and other local/regional/national authorities, utilities, transport operators, investors, financial institutions, and ICT consultants), policymakers, and project participants about the key strategies and approaches that can be replicated and scaled in similar contexts.

Starting from the evidence collected by DENK (on behalf of RES) and provided by every Focus District in T6.1 "Preparing the ground for local adaptation", the best practices had been put by DENK in a database and had been categorized according to different typologies.

As the report of T6.3 "Participation strategies", this deliverable has been structured assembling the database supplied by DENK.

This deliverable will also serve as the basis for the D6.3 "SIMPLY POSITIVE best practice Booklet", the final report of the WP6 "Participation concepts to trigger Cities' engagement onto the pathway towards PEDs" which will highlight the main project achievements, best practices, lessons learned and recommendations for successful city and stakeholder engagement.



# Table of Contents

1	INTRO	DDUCTION	6
	1.1 Pu	rpose of the document	6
	1.2 Re	lation to other project activities	6
	1.3 Str	ucture of the document	7
2	GOOL	PRACTICES AND SUCCESS STORIES FROM FOCUS DISTRICTS	8
	2.1 Sco	ppe and approach	8
	2.1.1	Scope	8
	2.1.2	Approach	9
	2.2 En	ergy efficiency	. 10
	2.2.1	Energy efficiency in public buildings	. 10
	2.2.2	Energy efficiency in private buildings	. 18
	2.2.3	Energy efficiency in municipal infrastructure	. 21
	2.3 Re	newable energy production	. 27
	2.3.1	Conversion of all street lighting to LEDs	. 27
	2.3.2	Regional Energy Strategy Amsterdam	. 28
	2.3.3	Energy Efficiency - The Premise of a Better Environment in Romania – Serbia Cross-Border A	rea
		31	
	2.4 Su	stainable mobility	. 31
	2.4.1	Smart streetlights in Verona (Italy)	. 31
	2.4.2	A short- and long-term rental and maintenance service for electric vehicles in Reggio Emilia	. 32
	2.4.3	Walkway and Cycle Path in Großschönau	. 33
	2.4.4	Bike City Amsterdam – Long-term Bicycle Plan 2017-2022	. 36
	2.4.5	Complex revitalization project of the central area of Resita Municipality	. 38
	2.5 Sta	ikeholder engagement	. 41
	2.5.1	LEAVE A MARK: An anti-smog mural for your city	. 41
	2.5.2	New charging stations in Turin (Italy)	. 42
	2.5.3	School Projects in Großschönau	. 43
	2.5.4	New Amsterdam Climate	. 46
	2.5.5	Integrated Urban Development Strategy of the Municipality of Resita for the period 2022-20	030
	26 Ur	49 han Planning Land Lice Planning and Lirban Decign	51
	2.0 01	LOS DAMA (Interreg Alning Snace)	51
	2.0.1	Information event on sealing prevention/rainwater infiltration for municipalities	51
	2.0.2	3D Amsterdam	56
	2.0.5	Undating the General Urban Plan of the Municipality of Resita	58
	2.7 Inr	novative integration of technologies	. 60
	2.7.1	e-SMART e-mobility SMART grid for passengers and last mile freight transports in the Alp	vine
	Space	60	
	2.7.2	Blackout protection in the elementary school Großschönau	. 61
	2.7.3	Hydrogen Hub Amsterdam	. 63
	2.8 Im	pacts of districts and cities to overall Sustainable Energy Vision	. 65
	2.8.1	PROSPECT2030 - PROmoting regional Sustainable Policies on Energy and Climate char	nge
	mitiga	ation Towards 2030	. 65
	2.8.2	PEACE Alps - Pooling Energy ACtion plans and Enhancing their implementation in the Alps	. 67
	2.8.3	Großschönau is community member in climate and energy organizations	. 68
	2.8.4	Positive Energy District in Buiksloterham	. 71
	2.9 Cli	mate change adaptation	. 74



2.9.1	SHREC – SHifting towards Renewable Energy for Transition to Low Carbon Energy	74
2.9.2	Rainwater utilization in the passive house community in Großschönau	76
2.9.3	Amsterdam Rainproof	77
ANALYSIS	S OF BEST PRACTICES	80
STEP		81
CLUSIONS		82
	2.9.1 2.9.2 2.9.3 ANALYSIS T STEP CLUSIONS	<ul> <li>2.9.1 SHREC – SHifting towards Renewable Energy for Transition to Low Carbon Energy</li> <li>2.9.2 Rainwater utilization in the passive house community in Großschönau</li> <li>2.9.3 Amsterdam Rainproof</li> <li>ANALYSIS OF BEST PRACTICES</li> <li>IT STEP</li> <li>CLUSIONS</li> </ul>



# 1 Introduction

### 1.1 Purpose of the document

The aim of the document is to offer a comparative report on exemplary approaches observed in Simply Positive Focus Districts.

Drawing from the data provided by each Focus District and collected by DENK in T6.1, these best practices have been compiled into a database and classified based on various categories.

We define "good/best practices" as initiatives, experiences, exemplary method, or approach that have proven effective in:

- A significant reduction of energy consumption.
- Maximization of renewable energy generation.
- Fostering sustainability and sustainable practices within a district or urban area.

Moreover, the success stories should be readily replicated in other regional or local contexts.

These practices encompass processes or interventions that exhibit positive outcomes in various aspects of energy management, such as energy efficiency in public and private buildings, renewable energy production, sustainable mobility, stakeholder engagement, etc.

The best practices and success stories collected have been individually detailed in a prior report by DENK, following a consistent analytical framework. Building upon the previous database, this comparative report offers the baseline for the D6.3 "SIMPLY POSITIVE best practice Booklet" giving recommendations how to best use the available possibilities to trigger successful city and stakeholder engagement for local creation of PEDs and PENs.

### 1.2 Relation to other project activities

This deliverable is a component of T6.3, titled "Participation strategies," which contributes to the overarching goal of WP6 "Participation concepts to trigger Cities' engagement onto the pathway towards PEDs": the analysis of local motivation and participation strategies to use the limited given resources regarding time and capacity for optimal results. A special place is given to the awareness raising for the need of PV installations as a key renewable energy source in existing urban areas. The WP6 will also develop a best practice booklet of available participation concepts and recommendations on local authorities' policies on how to gain the best effect based on impact of climate change and capability to adapt.

The genesis of this report lies in the findings gathered during prior activities, particularly the mapping of the available good practices and success stories provided by DENK thanks to the participation of the four Focus Districts.

Furthermore, these identified best practices serve as a prelude to the final Activity of WP6, T6.4 titled "Local authorities' policies to support PED", as they will be used as case studies to formulate a set of successful activities to stimulate public and private stakeholder engagement.



### 1.3 Structure of the document

The document is divided into 5 main chapters: introduction, best practices divided by typology, analysis of best practices included, next steps and conclusion.

For every Focus District (Settimo Torinese, Großschönau, Amsterdam and Reşiţa) have been identified seven typologies of best practices:

- Energy efficiency
- Renewable energy production
- Sustainable mobility
- Stakeholder engagement
- Urban Planning, Land Use Planning and Urban Design
- Innovative integration of technologies
- Impacts of districts and cities overall Sustainable Energy Vision
- Climate change adaptation

The second chapter contains the scope and approach and all the best practices found, divided by typology.

The number of good practices and success stories is different for every chapter and for every Focus District, as it depends on the available sources.

The total number of best practices collected is:

- Settimo Torinese: 13
- Großschönau: 11
- Amsterdam: 10
- Reşiţa: 8



# 2 Good practices and success stories from Focus districts

### 2.1 Scope and approach

Defining the scope of the deliverable is essential to provide clarity and context for the exploration of available good practices within the project.

In this chapter, we outline the objectives and boundaries of this document to ensure a comprehensive understanding of the scope of our analysis, and it is also defined the approach pursued to identifying and analyzing available good practices.

#### 2.1.1 Scope

Establishing a clear scope is essential to guide the exploration of good practices within the Simply Positive project. By defining the boundaries and objectives of this deliverable, we ensure that the document provides a comprehensive and focused examination of practices that contribute to the advancement of PEDs and sustainable urban development.

The primary objectives of this deliverable are as follows:

- 1. To identify, document, and analyze a diverse range of good practices within the four Focus Districts.
- 2. To showcase practices that have demonstrated success in enhancing energy efficiency, sustainability, and overall quality of life.
- 3. To inspire the replication and scaling of these practices in similar contexts.
- 4. To set the baseline to provide, in the "Simply Positive best practice Booklet", the insights and lessons learned that can inform stakeholders, policymakers, and project participants.

To establish the context, it is vital to begin with a brief overview of the Simply Positive project. The project's mission, goals, and key stakeholders are introduced to provide a framework for understanding the scope of the deliverable.

Simply Positive aims to facilitate the development of Positive Energy Districts and the shift towards Climate Neutral Cities. By utilizing four Focus Districts located in various European countries as case studies, we intend to formulate and experiment with strategies for a seamless energy transition. These strategies encompass maximizing photovoltaic (PV) energy generation, implementing efficient energy storage solutions, optimizing energy consumption patterns, and creating unified climate and energy action plans.

Through the establishment of a shared framework for defining Positive Energy Districts within existing urban areas, we will illustrate the most effective methods for monitoring and visualizing the outcomes achieved. We also intend to promote active stakeholder engagement through well-suited participation concepts. Ultimately, our goal is to inspire more cities to embark on the journey towards establishing thousands of Positive Energy Districts and Climate Neutral Cities throughout Europe.



Another foundational element of this deliverable is the definition of "good practices." It is crucial to clarify what is meant by this term in the context of PEDs.

As explained in the Introduction, good practices encompass proven methods, strategies, and approaches that contribute to the energy efficiency, sustainability, and overall success of a PED. These practices may include, but are not limited to, innovations in energy production, building design, transportation, community engagement, and climate change adaptation practices.

These PEDs are located within specific urban or district areas, each with their unique characteristics and challenges. The practices under consideration are those implemented within the boundaries of these PEDs.

This report addresses contemporary good practices. It draws from a range of time that goes from 2010s to the near future, to present a comprehensive view of the evolution and development of practices within PEDs. While older practices offer valuable insights, contemporary practices demonstrate the cutting-edge solutions currently being deployed.

To enhance the organization and clarity of this deliverable, good practices are categorized and grouped according to seven relevant typologies. Categorization aids in the systematic presentation of practices and facilitates targeted exploration.

### 2.1.2 Approach

The approach to identifying and analyzing available good practices in the four Focus Districts has been established by DENK.

A document containing different tables has been sent to the four Focus Districts in order to be filled in with the information collected.

The document has been structured according to specific areas of interest (explanation, KPIs, guiding questions and examples), in order to help the reader to better understand a project specificity and to further replicate it, if desired. The categories were determined by available PED research, conclusions from Making a City project and SECAP methodology.

Positive practices have been provided by each focus district, however if there were no examples available for the focus districts, examples from other surroundings from the same country have been mentioned.

Once positive practices have been identified, each partner has filled in the blue side of the table under the corresponding category, as follows:

Initiative name	Name of initiative / project / measure; if no official title is available, please provide a short name
Location	Please specify the district, city and country
Population impacted	If no further information is provided, this will include the residents of the area where the initiative took place



Duration of initiative	Please specify exact year when initiative started and year it ended/ongoing (e.g.: "2020 – ongoing")
Quantitative	Please provide quantitative outcomes for each initiative / project / measure reported, in the sense
outcomes (KPIs)	of presenting the results or progress against the targets.
	Without being exhaustive, examples for these KPIs are provided under each category within this
	document, and within the attached examples of positive practices.
Success factors	What makes this initiative a positive example? Did it solve a problem / reach performance in a
	certain field? Provide monetary savings? Was it a first of its kind?
Objective	If no official chiestives are present places fill in what was the need (problem (experiment) / rick
objective of	In no official objectives are present, please fin in what was the need problem/opportunity/fisk
Initiative	that led to the development of this initiative. As an example, it may be defined as a local situation
	or correlated to a national / international objective or plan
Positive practice	Full description of the initiative / project / measure: resources used, actions taken, investments
description	made, stakeholders involved, challenges met etc.
Funding	Please specify what type of funding was used. If it was EU or national funding, please specify the
	program and financing axis.
references / link:	Please state where the information was gathered from:
	<ul> <li>non-public information: direct contact with municipality representatives, paper</li> </ul>
	archives, printed reports etc.
	<ul> <li>public information: link to online sources / database (including non-English websites)</li> </ul>

Since all the good practices from Focus Districts appear in this format in DENK's report, it has been decided to maintain the table in this deliverable.

# 2.2 Energy efficiency

### 2.2.1 Energy efficiency in public buildings

### 2.2.1.1 Connection to district heating by Public Schools

Initiative name	Connection to district heating by Public Schools
Location	Settimo torinese (ex FIAT Village)
Population	600 Students of involved school
impacted	
Duration of	2000-ongoing
initiative	
Quantitative	- Users connected ► 600 Students of 2 public school in ex Villaggio FIAT in Settimo To
outcomes (KPIs)	<ul> <li>Public building served ► 35 public buildings in Settimo To</li> </ul>
	<ul> <li>Total Length of the Network ► 47 km</li> </ul>
	-
	Other potential KPI's to be considered for similar projects:
	Reduction of pollutants



	<ul> <li>Monetary savings on energy use (€)</li> <li>GHG emissions reduction (tons CO2e)</li> </ul>
Objective of initiative	<ul> <li>To ensure secure energy supply and grant efficient systems to public buildings.</li> <li>To ensures the right environmental comfort for the most sensitive users, such as school students.</li> <li>Efficient public buildings also means improving the environmental impact in communities and therefore the quality of the air.</li> </ul>
Positive practice	District heating was born in Settimo in the year 2000. The solution is characterized by an extensive
description	network of pipes that provide cooling and heating services to the private residences and businesses located in the area.
	Of the 371 connected users, 35 are public buildings, including 15 public schools and in particular 2 primary and secondary school near old FIAT Village district.
	The connection of schools to the city district heating network is a positive element for the entire city, not only because it allow to exploit an already existing network, but also because it has positive
	CO2 emission.
	involvement of students to make them aware of the technology and its environmental impacts, so
	that its use also becomes a form of shared culture.
Funding	Private
Success factors	Strong impetus from the public administration through its investee companies, that make possible to respond to the needs of the city, in terms of lower energy consumption, CO2 emission and monetary savings.
references / link:	https://www.engie.it/cosa-facciamo/produzione-infrastrutture-energy- management/teleriscaldamento/settimo-torinese/

# 2.2.1.2 District heating: installation of a summer boiler in the course of conversion to a bidirectional network

Initiative name	District heating: installation of a summer boiler in the course of conversion to a bidirectional network
Location	Großschönau
Population impacted	Approximately 20 district heating connections are affected, including public buildings, single- family homes, apartment buildings and companies



Duration of initiative	Since 2016
Quantitative outcomes (KPIs)	The installation of the new summer boiler as well as the buffer storage bring savings in electricity and wood chips consumption.
Objective of initiative	The goal was to always operate the district heating plant at full load, since this is how the fuel utilization rate is highest.
Positive practice description	As part of the research project "Bi-directional integration of buildings with heat generation into heating networks 2+" (BINE 2+), the district heating network in Großschönau was upgraded for bi- directional heat feed-in. In the course of this, a summer boiler with an output of 115 kW was installed. As can be seen in the figure below, a buffer with 2,000 l was interposed between this boiler and the heat exchanger. The new boiler runs at full load when needed in the summer and charges the buffer tank. Heat is drawn into the network via the buffer storage tank as required. This reduces frequent start-up and shut-down operations and provides short-term heat demand requirements. Since the summer boiler is considerably smaller than the main boiler with 500 kW, it can always burn at full load during operation. This has made it possible to significantly increase the heat utilization efficiency of the fuel used.
	Pufferkreispumpe Heitkreispumpe
Funding	Around 60 % by the funding initiative "Klima- und Energiefonds" as part of the Energy Research Program; the rest was financed by FWG-Fernwärmeversorgung Großschönau regGenmbH.
Success factors	As part of the research project "Bi-directional integration of buildings with heat generation into heating networks 2+" (ESD 2+), not only was the technical upgrade of the district heating network implemented, but various operating models were also evaluated.
references / link:	http://www.aee- now.at/cms/fileadmin/downloads/projekte/bine2/Publizierbarer_Endbericht_BiNe2plus_final.pdf

### 2.2.1.3 Housing subsidy by the municipality of Großschönau

Initiative name	Housing subsidy by the municipality of Großschönau
Location	Municipality of Großschönau
Population impacted	42 approved funding applications to date
Duration of initiative	Since 2010
Quantitative outcomes (KPIs)	A total of 42 grant applications have been approved so far and supported with a total amount of € 156,841.78.



Objective of	The goal of the community housing subsidy is to promote sustainable construction with low heating requirements in order to reduce energy consumption for heating private buildings
Positive practice description	For the building on a plot of land in Lower Austria, a development tax must be paid to the municipality. The amount of this tax varies among the municipalities. Furthermore, the municipalities can decide independently whether and in what way they pay back part of the development fee by means of subsidies. In the municipality of Großschönau this payback takes place in the course of the described housing subsidy. The municipality of Großschönau has decided to link the housing subsidy to the energy consumption of the newly built building. Basically, builders, who are registered with their main residence in the municipality of Großschönau and who undertake to maintain their main residence here for at least 10 years after completion of the subsidized building, can apply for the municipal housing subsidy. Subsidized are 30% of the development fee and the supplementary fee for a maximum of 900 m <sup>2</sup> of floor space. In addition, a further subsidy of 10% can be applied for in the case of a heating requirement (reference climate) according to the energy certificate for residential buildings up to 30 kWh/m <sup>2</sup> a and a further subsidy of another 10% in the case of a heating requirement (reference climate) according to the energy certificate for residential buildings up to 10 kWh/m <sup>2</sup> a (=passive house construction).
Funding	By the municipality of Großschönau
Success factors	Through the housing subsidy, sustainable construction with low heating requirements is promoted and the energy consumption for heating private buildings can be reduced.
references / link:	http://www.grossschoenau.gv.at/page.asp/-/formulare

# 2.2.1.4 Energy-neutral district wharf Amsterdam South

Initiative name	Energy-neutral district wharf Amsterdam South
Location	Amsterdam, Netherlands
Population impacted	141,438
Duration of initiative	Permanent
Quantitative outcomes (KPIs)	80% water savings through usage of osmosis water for washing, rinsing and filling sweepers 1.104 PV panels supply electricity
	Thermal storage system for heat-cold-storage enables self-sufficient operations without any connection to gas or district heating



Objective of initiative	The Municipality of Amsterdam wanted a new and self-sufficient building for the municipal wharf of the South District. A building that generates energy and saves water. The municipal yard houses the Waste Collection, as well as Enforcement & Safety and Public Space Management departments of the South district. The building shall fulfill the needs of the respective uses in a highly efficient and environmentally friendly way.
Positive practice	The new urban district wharf has become a compact building that, partly due to a smart
description	organization in a tight location, feels spacious and pleasant. The ground floor mainly serves as storage space for large equipment and has a transparent appearance that clearly shows the industrial character. The layout is precisely tailored to the logistics and movements of the fleet. The dressing rooms, canteen, roof garden and an open office are located on the first floor.
	The PV roof supplies more energy than the building needs. As a result, the surplus can be used to charge the electric vehicles. Surface water and rainwater are used for washing the vehicles and filling the sprinkler basin. The interior is also sustainable, with LED lighting and furniture made from scrap wood. The walls are covered with wood from felled Amsterdam trees. Rubber from inner tubes is incorporated into the upholstery of the chairs. Even the artwork on the wall is made of recycled materials, such as textiles.
	The district wharf Amsterdam South shows that a completely energy-neutral building can be built without exceeding the budget.



	Images by BDG Architecten Amsterdam.
Funding	City of Amsterdam
Success factors	Building layout tailored to the needed functions of users;
	Roof complete used for energy saving and energy generation;
	Internal wastewater recycling and grey water usage;
	Intelligent heating and cooling system with integrated storage;
	Open space to motivate collaboration and exchange between workers;
	Sustainable ideas implemented in all areas to visualize and highlight the unique character of the building.
references / link:	https://www.architectuur.nl/inspiratie/blog/stadsdeelwerf-amsterdam-zuid-transparant-en- duurzaam/

### 2.2.1.5 Energy renovation of the Social Welfare Department Headquarters

Initiative name	Energy renovation of the Social Welfare Department Headquarters
Location	Municipality of Resita, Caras-Severin County, Romania
Population	Population of Resita Municipality
impacted	
Duration of	2022 - ongoing
initiative	



Quantitative	Potential KPI's to be considered for similar projects:
outcomes (KPIs)	
	Reducing space heating costs in winter (%)
	Reducing air conditioning costs in summer (%)
	Decrease in gas consumption (%)
	Decrease in energy consumption (%)
	<ul> <li>Quantity of energy saved (MW / GJ / TJ)</li> </ul>
	<ul> <li>Monetary savings on energy use (€)</li> </ul>
	GHG emissions reduction (tons CO2e)
Objective of initiative	<ul> <li>Achieving the objectives set at community level, through an integrated approach of energy efficiency, seismic strengthening, fire risk reduction and the transition to green and smart buildings, with the due respect to aesthetics and architectural guality.</li> </ul>
	<ul> <li>Developing appropriate mechanisms to monitor the performance of the built stock and ensuring the technical capacity to implement the investments</li> </ul>
	• Supporting economic growth and countering the negative effects that the current international crisis may have on the energy sector
	<ul> <li>Increasing energy performance by supporting the construction industry and while contributing to the creation of new jobs</li> </ul>
	Reducing energy consumption for space heating in buildings has the effect of reducing
	the maintenance costs, mitigating the effects of climate change by reducing
	greenhouse gas emissions, and leads to energy independence by reducing the
	consumption of conventional fuel used to prepare heat, as well as to improving the
	urban design of the city.
description	repairs proposed in the project are:
	<ul> <li>Thermal insulation of the facade - glazed part, by replacing the existing external joinery, including the access to the building, with high performance thermal insulation joinery</li> <li>Thermal insulation of the facade - opaque part, by insulating the exterior walls</li> <li>Thermal insulation of the floor above the top level on the bipped roof</li> </ul>
	<ul> <li>Thermal insulation of external walls in contact with the ground</li> </ul>
	Thermal insulation of the plinth
	Modernization of the building's heating, plumbing and electrical installations
	Provision of ventilation and air-conditioning systems
	Installation of alternative heat and newer systems
	Installation of high officiency heat and power systems
	Installation of high-enclency heat recovery systems
	Installation of reacting/air conditioning for the main premises with cening fan condition
	Installation of photovoltaic panels for electricity generation
	Creation of a modern lighting system with LED luminaires equipped with
	motion/presence sensors
Funding	The project is financed with EU support through the NRDP, Component C5 - Renovation Wave, Operation B2.1.a - Moderate energy renovation of public buildings - Local authorities
Success factors	The project is aligned to the community objectives of reducing energy usage and it aims at
	encouraging other institutions to follow. Besides experimenting with lower costs in terms of air
	conditioning usage and space heating costs, which can weigh substantially in the public opinion,
	this will contribute as well in transitioning to a more sustainable community.
references / link:	N/A



Initiative name	Energy rehabilitation of the Traian Lalescu National College, Resita
Location	Municipality of Resita, Caras-Severin County, Romania
Population	Population of Resita Municipality
impacted	
Duration of	Finished
initiative	
Quantitative	Potential KPI's to be considered for similar projects:
outcomes (KPIs)	
	Decrease in energy consumption (%)
	<ul> <li>Quantity of energy saved (MW / GJ / TJ)</li> </ul>
	<ul> <li>Monetary savings on energy use (€)</li> </ul>
	GHG emissions reduction (tons CO2e)
Objective of	The implementation of the project will contribute to reducing the energy consumption within the
initiative	building and reducing the maintenance cost with heating. Additionally, it will lead to energy
	independence, reducing the consumption of conventional fuel and implicitly decreasing the
	greenhouse gases in the community.
Positive practice	The actions covered within this project are:
description	• Improving the thermic isolation of the building envelope, reaf trucces and equatings
	<ul> <li>Improving the thermic isolation of the building envelope, root trusses and coverings, including creating measures to strengthen the building</li> </ul>
	• The rehabilitation and modernization of the domestic hot water systems and air
	conditioning of mechanical ventilation systems with heat recovery, including passive
	cooling systems
	The use of renewable energy sources to ensure the building's energy needs
	The implementation of energy management systems with the aim of improving energy     efficiency and monitoring energy consumption
	The replacement of fluorescent and incandescent lighting fixtures with lighting fixtures
	with high energy efficiency and a long lifespan
Funding	The project was financed under the Regional Operational Program 2014 – 2020, priority axis 3,
	investment priority 3.1, operation B – Public Buildings
Success factors	The project is aligned to the community objectives of reducing energy usage and it aims at
	encouraging other institutions to follow. Besides experimenting with lower costs in terms of air
	conditioning usage and space heating costs, which can weigh substantially in the public opinion,
	this will contribute as well in transitioning to a more sustainable community.
references / link:	N/A

### 2.2.1.6 Energy rehabilitation of the Traian Lalescu National College, Resita



### 2.2.2 Energy efficiency in private buildings

# 2.2.2.1 Municipal Building Regulations on eco-efficiency of buildings and Environmental Sustainability

Initiative name	Municipal Building Regulations on eco-efficiency of buildings and Environmental Sustainability
Location	City of Settimo Torinese
Population impacted	500 inhabitants (on about 150 new buildings)
Duration of initiative	2009-2022
Quantitative outcomes (KPIs)	<ul> <li>From 2009 to March 2023 (date of interruption of energy desk):</li> <li>n° of practices with first level incentives approved and closed → 181</li> <li>energy class of buildings with incentives minimum class A3 max class A4 (in the majority of the 181 Class A4)</li> <li>photovoltaic installed on buildings → 1879.30kW</li> <li>photovoltaic systems installed in Settimo from 2009 to 2023 (on incentivized and non-subsidized buildings) → 34208,798 kW</li> <li>heating systems on buildings with the release of incentives → until 2015 the prevalence was the installation of condensing boilers</li> <li>heating systems on buildings with the release of incentives → since 2015, the prevalence are heat pumps for both heating and DHW</li> </ul>
Objective of initiative	Ensure that new buildings have the maximum energy class rewarding virtuous interventions that exceed regulatory requirements and allow higher energy performance than required by law
Positive practice description	Since the early 2000s, the municipality of Settimo has decided to encourage the construction of buildings that reach the maximum possible energy class in order to reduce consumption and production of CO2. The energy annex to the building regulation ("Municipal Building Regulations on eco-efficiency of buildings and Environmental Sustainability") aimed at raising the energy and bio-architectural efficiency of the building entities It is based on the granting of both economic (discount on infrastructure charges\ planning obligations) and volumetric incentives based on the achievement of the highest efficiency class, with respect to current regulations. According to a scoring methods that calculated the achievement of energy objectives or environmental levels on building it was possible to obtain discounts or incentives The main objectives required were: - On new construction> Increase in building capacity to obtain discount on urbanization costs - On renovation> discount on the cost of construction and occupation of public land for the works The annex was in force until 2022, when the obligation for all new buildings or interventions involving demolition and subsequent reconstruction to be NZEB (Nearly Zero Energy Building) was effectively replaced at national level. through the recent Legislative Decree 48/2020, which implemented the European Directive 844, known as EPBD III.
Funding	Public. Funds from the municipal budget (as a reduction in revenue as an alternative to an increase in volume achievable.
Success factors	Approximately 50% of new buildings (150) have applied the energy annex.



references / link:

https://municipium-images-production.s3-eu-west-1.amazonaws.com/s3/6869/allegati/Ambiente,%20Edilizia%20e%20Territorio/allegato\_energetic o-dcc\_105-15.pdf

### 2.2.2.2 Housing subsidy by the municipality of Großschönau

Initiative name	Housing subsidy by the municipality of Großschönau
Location	Municipality of Großschönau
Population impacted	42 approved funding applications to date
Duration of initiative	Since 2010
Quantitative outcomes (KPIs)	A total of 42 grant applications have been approved so far and supported with a total amount of € 156,841.78.
Objective of initiative	The goal of the community housing subsidy is to promote sustainable construction with low heating requirements in order to reduce energy consumption for heating private buildings.
Positive practice description	For the building on a plot of land in Lower Austria, a development tax must be paid to the municipality. The amount of this tax varies among the municipalities. Furthermore, the municipalities can decide independently whether and in what way they pay back part of the development fee by means of subsidies. In the municipality of Großschönau this payback takes place in the course of the described housing subsidy. The municipality of Großschönau has decided to link the housing subsidy to the energy consumption of the newly built building. Basically, builders, who are registered with their main residence in the municipality of Großschönau and who undertake to maintain their main residence here for at least 10 years after completion of the subsidized building, can apply for the municipal housing subsidy. Subsidized are 30% of the development fee and the supplementary fee for a maximum of 900 m <sup>2</sup> of floor space. In addition, a further subsidy of 10% can be applied for in the case of a heating requirement (reference climate) according to the energy certificate for residential buildings up to 30 kWh/m <sup>2</sup> a and a further subsidy of another 10% in the case of a heating requirement (reference climate) according to the energy certificate for residential buildings up to 10 kWh/m <sup>2</sup> a (=passive house construction).
Funding	By the municipality of Großschönau
Success factors	Through the housing subsidy, sustainable construction with low heating requirements is promoted and the energy consumption for heating private buildings can be reduced.
references / link:	http://www.grossschoenau.gv.at/page.asp/-/formulare

### 2.2.2.3 Free Energy Coaches

Initiative name	Free Energy Coaches
Location	Amsterdam



Population impacted	>1 Mio.
Duration of initiative	Permanent
Quantitative outcomes (KPIs)	Average reduction of about 8% on the energy bill
Objective of initiative	Provide for residents free, tailor-made energy saving advice
Positive practice description	The coach talks to the residents and asks questions about the home and the appliances present. The living habits of the residents are also discussed. This way the coach can determine how much energy they can save and what adjustments are needed for this. Lower energy consumption naturally also means lower costs. In addition to advice and a savings report, the resident can choose from practical instantly applicable savings products: radiator foil, draft strips, LED lamps and radiator vents. That is also free, and the first step towards saving. The energy coach does not provide advice on major investments in the home. The municipality pays for the savings products and the visit is completely free for the residents. The visit is one-off and without obligation. The energy coaches are volunteers, trained and supervised by !WOON. They can be requested via an online form on the !WOON website.
Funding	City of Amsterdam
Success factors	Free for the resident
	Immediate provision of first tools to start off
	No obligations, no hidden selling, no sponsorships
	No discussion of major investments
	From people for people
references / link:	https://www.wooninfo.nl/vraagbaak/energie/energiecoach/

### 2.2.2.4 Moderate energy renovation of multi-family residential buildings

Initiative name

Moderate energy renovation of multi-family residential buildings



	Energy renovation of multi-family residential buildings in Resita Municipality - Lot 1
Location	Bd. Republicii nr. 1, Municipality of Resita, Caras-Severin County, Romania
Population impacted	Residents of the residential building - a no. of 120 apartments - approx. 250 persons.
Duration of initiative	2022 - ongoing
Quantitative outcomes (KPIs)	<ul> <li>Potential KPI's to be considered for similar projects:</li> <li>Reduction of annual specific final energy consumption for heating (kWh/m2 year)</li> <li>Reduction in total primary energy consumption (kWh/m2 year</li> <li>Primary energy consumption using renewable sources at end of implementation project (kWh/m2 year)</li> </ul>
Objective of initiative	The implementation of the project will contribute to reducing the energy consumption within the buildings and reducing the maintenance cost with heating. Additionally, it will lead to energy independence, reducing the consumption of conventional fuel and implicitly decreasing the greenhouse gases in the community.
Positive practice description	The project consisted of actions of renovating multi-family residential buildings, targeting energy usage reduction (similar to the ones mentioned above)
Funding	NATIONAL RECOVERY AND RESILIENCE PLAN COMPONENT C5 - WAVE OF RENEWAL OPERATION A3.1 - Moderate energy renovation of multi-family residential buildings
Success factors	The project doesn't only contribute to the community goals related to decreasing the general energy consumption, but it can also inspire other people to follow the example. Such a project where people can experiment with the lower costs can have the power of convincing others to get informed and check the means for implementing the same for their buildings.
references / link:	https://mfe.gov.ro/pnrr/

# 2.2.3 Energy efficiency in municipal infrastructure

### 2.2.3.1 District Heating

Initiative name	District Heating
Location	City of Settimo Torinese
Population impacted	20.000 inhabitants
Duration of initiative	2000 – ongoing
Quantitative outcomes (KPIs)	<ul> <li>(*2023)</li> <li>GHG emissions reduction (tons CO2e) ► over 29,000 tons/year*</li> <li>Thermal energy supplied ► 99 GWh/year</li> <li>Users connected ► 371 connected users: 312 condominiums, 35 public buildings, 21 commercial buildings, 3 industrial buildings</li> <li>Clients served over ► 37k inhabitants</li> <li>Length of the Network ► 47 km</li> </ul>



Objective of initiative	To establish an urban network from an efficient perspective that could follow the principles of lower energy consumption and CO2 emission savings, in particular in relation to domestic production plants
Positive practice description	District heating was born in Settimo in the year 2000. The solution is characterized by an extensive network of pipes that provide cooling and heating services to the private residences and businesses located in the area.
	Ideated in the area. Under the unified mandate of the City Council, Azienda Sviluppo Multiservizi (ASM) invested in the creation of the network starting from a connection agreement with the FIAT Village. The agreement provided for the conversion of the plant owned by the FIAT Super Condominium from BTZ fuel (low sulfur content oil) to methane and the refurbishment, paid for by ASM (which became the owner), of the distribution network. This step made it possible to immediately connect 1,500 families to the district heating network and to eliminate the highly polluting smog generated by the combustion of 1,600 tons of oil refining processing waste from the city atmosphere. Other districts followed in Settimo. In a few years the polluting emissions deriving from the combustion of over 3,000 tons of fuel oil per year were eliminated and over 3,300 homes were connected to the nascent city district heating network. <b>Uter districts followed in Settimo</b> . In a few years the polluting emissions deriving from the combustion of over 3,000 tons of fuel oil per year were eliminated and over 3,300 homes were connected to the nascent city district heating network. <b>Uter districts followed in Settimo</b> . Until 2004, the city's district heating network was fed by high temperature hot water mainly produced by a backup boiler. The leap in quality came with the creation of a central power supply, now owned by ENGIE, which was under construction in 2004. In the authorization, the Municipality of Settimo and the Province of Turin managed to insert the city's district heating network. The production mix of the network is diversified and is now given by a combination of heat recovery from the thermoelectric power plant, biomass, backup boilers, trigeneration system.
Funding	Private
Success factors	Strong impetus from the public administration through its investee companies, that make it possible to respond to the needs of the city, in terms of lower energy consumption, CO2 emission and monetary savings.
references / link:	https://www.engie.it/cosa-facciamo/produzione-infrastrutture-energy- management/teleriscaldamento/settimo-torinese/

# 2.2.3.2 Public lighting efficiency in Settimo Torinese

Initiative name	Public lighting efficiency
Location	City of Settimo Torinese



Population	46.000 inhabitants
impacted	
Duration of initiative	2017-2019 (but ongoing)
Quantitative	In 2022 (compared to 2017)
outcomes (KPIs)	<ul> <li>decrease in energy consumption and tCO2 (%): 70% reduction</li> </ul>
	<ul> <li>quantity of energy saved: 3.843.304,00 MWh</li> </ul>
	<ul> <li>total current expenditure: approximately 600 M€</li> </ul>
Objective of initiative	Lower energy consumption, monetary savings.
Positive practice	In 2017, the City of Settimo decided to put out a tender for a series of energy requalification
description	interventions, extraordinary maintenance, compliance with standards and technological
	adaptation, connected to the public lighting service.
	In detail, the following interventions were planned:
	• Installation of new light points or replacement of lighting fixtures that do not comply with light
	pollution regulations, using new LED technology
	Replacement of traffic lights with LED technology
	Renovation of old electrical lines
	Replacement of old electrical panels
	Replacement of headlights with LED technology
	• Replacement of headinghts with LED technology
	The intervention therefore did not only involve replacement of lighting equipment, but also a reduction in numbers, thanks to correct recalculation of the lumens to be installed.         Thanks to all these interventions, the estimation of saving was more than 62%.         Image: Market intervention in the intervention in the estimation of the lumens to be installed.         Thanks to all these interventions, the estimation of saving was more than 62%.
	Consumo stato di fatto 5,468.188 1.022,55 2.086,00
	Consumo stato di progetto 2.065.050 386,16 787,78
	Kispamilo annuo conseguibile (anni 1 launi) 22 22 21 00 5 6 34 0 12 38 8
	Risparmio percentuale 62,24%
	In 2022, thanks to the energy requalification interventions carried out (effectively the replacement of lighting fixtures by approximately 95% of the initially planned quantity), the electricity consumed for public lighting was approximately 1.7 GWh As can be seen in the table below, that compares the energy savings (UNI EN11352 standard) achieved in 2022 with what was estimated in the phase of the Intervention Plan (PDI), the savings is in line (even higher!) than forecast.            Consumo stato di fatto da PDI         5.468.188         kWh         A           Consumo stato di of progetto da PDI         2.065.050         kWh         B           Risparmio minimo garantito         62%         (A-B)/A           Consumo registrato nel 2022         1.624.884,00         kWh         C
	10/0 (A*C//A
Funding	PATRIMONIO CITTA' DI SETTIMO TORINESE s.r.l. Local Energy Service Company ESCo



Success factors	Strong impetus from the public administration through its investee companies, that make possible to respond to the needs of the city, in terms of lower energy consumption and monetary savings
references / link:	http://www.patrimoniosettimo.it/index.php

### 2.2.3.3 1st Solar Power Plant for Wastewater Treatment in Lower Austria in Großschönau

Initiative name	1st Solar Power Plant for Wastewater Treatment in Lower Austria in Großschönau
Location	Großschönau
Population impacted	The wastewater treatment plant (incl. sludge turning plant) in Rothfarn is designed for 415 population equivalents and currently consumes approximately 16,000 kWh of electrical energy per year. When fully utilized, the plant will consume approximately 25,000 kWh per year.
Duration of initiative	An energy concept for this measure was already prepared in the fall of 2008. The photovoltaic system was commissioned on June 3, 2009.
Quantitative outcomes (KPIs)	With the help of the newly installed photovoltaic system, the municipality can save about 3500 € per year in energy costs. In addition, 90% less CO <sub>2</sub> emissions are caused thanks to 80% less heating energy and ecologically optimized building materials. Verifiable CO <sub>2</sub> savings in tons: 8.5 tons
Objective of initiative	The aim of the municipality Großschönau was to cover the energy demand of the wastewater and drinking water supply plants in the community area by renewable energy.
Positive practice description	As a pilot project, a photovoltaic system was designed for the wastewater treatment plant in Rothfarn.
	<ul> <li>Erection of photovoltaic plant</li> <li>Total output of 25 kWp</li> <li>Occupied area 150m<sup>2</sup>, roof pitch 40°</li> <li>PV module Sanyo HIP-230HDEI, HIP-210NWE5</li> <li>Fronius IG150 inverter.</li> </ul>
Funding	About 67% of the total costs were funded by the federal and state governments. The rest was financed by the municipality.
Success factors	<ul> <li>In 2009, this measure was among the pioneer projects and the municipality even received awards for it, namely:</li> <li>the Eurosolar award 2009</li> <li>and the 2nd place as "Klimaschutzgemeinde 2010".</li> <li>In addition, the municipality was able to enjoy many imitators.</li> </ul>



references / link:



### 2.2.3.4 Bi-directional district heating and cooling network Oosterpark-Plantagebuurt

Initiative name	Bi-directional district heating and cooling network Oosterpark-Plantagebuurt
Location	Amsterdam
Population impacted	n/a
Duration of initiative	To be realized by 2030
Quantitative outcomes (KPIs)	Sustainable heat source for 60 mainly historical buildings currently consuming >30.000 MWh of heat
	Usage of geothermal and or aquathermal heat 5th generation heat network
Objective of initiative	The municipality of Amsterdam, ARTIS, Royal Tropical Institute, OLVG, UvA, HvA and De Groene Grachten have high sustainable ambitions and are joining forces. Around 2030, they want to jointly generate and exchange heat and cold in a sustainable manner. This seems to be best done with a so-called 5th generation heat network.



Positive practice	The system works on energy from canal water and water from the Amstel, among other things,
description	and is linked to heat/cold storage systems and other energy sources in the area. This so-called
	"aquathermal energy", in combination with a very low temperature heat network, will exchange
	energy between all buildings. It can exchange heat and cold with each other and in the future
	connect other interested residents, for example from the Weesperzijdebuurt, companies and other
	energy users.
Funding	Study supported by the Space for Sustainable Initiative Amsterdam
Success factors	Sustainable heat for historic buildings
	Usage of surface water heat and ground water heat
	Bi-directional cooling and heating network
references / link:	https://www.nieuwamsterdamsklimaat.nl/initiatieven/duurzame-warmtebron-voor-artis-kit-
-	<u>olvg-en-gemeente-amsterdam</u>

### 2.2.3.5 Modernization of the public lighting system for parks and main streets of Resita Municipality

Initiative name	Modernization of the public lighting system for parks and main streets of Resita Municipality
Location	Municipality of Resita, Caras-Severin County, Romania
Population impacted	Population of Resita Municipality
Duration of initiative	2021-ongoing
Quantitative outcomes (KPIs)	<ul> <li>Potential KPI's to be considered for similar projects:</li> <li>Reduction of energy consumption</li> <li>Reduction of pollutants</li> <li>decrease in energy consumption (%)</li> <li>quantity of energy saved (MW / GJ / TJ)</li> </ul>



	<ul> <li>monetary savings on energy use (€)</li> </ul>
	GHG emissions reduction (tons CO2e)
Objective of	The project aims at increasing the energy efficiency of the public lighting system of the Municipality
initiative	of Reşița, by modernizing the existing infrastructure and extending the existing lighting system for
	This will incorporate alternative energy systems and environmentally friendly technical solutions.
	Specific objectives of the project:
	Reduction/optimization of energy consumption in the public lighting system
	Reduction of pollutants and improvement of environmental factors by using
	environmentally friendly equipment and technical solutions
	• The realization of a public lighting system incorporating renewable energy systems (photovoltaic panels) in order to prevent the depletion of conventional energy
	resources
	Raising awareness among the population of Reşiţa regarding the need of prudent
	behavior regarding the consumption and depletion of conventional resources
Positive practice	The project consisted of various actions dedicated to improving the infrastructure, such as:
description	Evenuation works, loving pines for pulling the cohies, plugging transpose with lovers of
	• Excavation works, laying pipes for pulling the EVC protective film over which layers of sand over the pipes and mounting the EVC protective film over which layers of
	compacted soil were mounted up to the final level.
	• Creation of passages on the alleys where the existing concrete was broken to make the
	passage trenches
	Pole mounting
The second second	Replacement of lighting fixtures
Funding	POR
	3 - Supporting the transition to a low carbon economy
	3.1 - Supporting energy efficiency, intelligent energy management and the use of energy from
	renewable sources in public infrastructures, including public buildings and the housing sector
	Operation C – Public lighting
Success factors	The improvement of the public lighting system that incorporates renewable energy systems
	(photovoltaic panels) can contribute to preventing the depletion of conventional energy resources
	and to raising awareness among the people in Resita regarding the various purposes the sustainable energy can be used for.
voferences / links	
references / link:	

# 2.3 Renewable energy production

# 2.3.1 Conversion of all street lighting to LEDs

Initiative name	Conversion of all street lighting to LEDs
Location	Municipality Großschönau



Population impacted	approximately 1,500 inhabitants of the municipality of Großschönau
Duration of initiative	2016 - today
Quantitative outcomes (KPIs)	Of 423 luminaires on the municipal territory, almost 95% (about 400 pieces) have been converted to LEDs to date. As a result, electricity consumption has been reduced by approximately 30% since 2019. For example, the conversion to LEDs in 2020 in the village "Friedreichs" reduced electricity consumption from 8,297 kWh to 5,222 kWh (seen in the following graphic).
	6.000 4.000 2.000 0 2016 2017 2018 2019 2020
Objective of initiative	The goal is to convert 100% of street lighting to LEDs by 2030.
Positive practice description	The municipality has a listing of all local lighting. Where technically possible (except e.g., crosswalk), all light sources are to be converted to LEDs. A large part has already been converted to LEDs and the savings can be seen in the annual energy report.
Funding	The initiative is funded by the municipality of Großschönau.
Success factors	The conversion is being carried out as part of the e5-program. The e5-program for energy-efficient municipalities supports municipalities in sustainable climate protection work. The aim is to set long-term measures and evaluate their effectiveness. Under the e5 program, savings measures are identified and implemented in the municipality and monitored by an energy officer. In addition, the success of the measures is evaluated annually by means of a survey of energy data.
references / link:	http://www.grossschoenau.gv.at/page.asp/-/e5

# 2.3.2 Regional Energy Strategy Amsterdam

Initiative name	Regional Energy Strategy Amsterdam
Location	Amsterdam and entire Noord-Holland Zuid region
Population impacted	>2 Mio.



Duration of initiative	Ongoing
Quantitative	Additional 50 MW of installed wind energy on Amsterdam's territory
outcomes (KPIs)	Sum of 400 MW of installed solar energy
	Being gas-free by 2040
Objective of initiative	The city authorities aspire to make Amsterdam climate neutral. In the Roadmap for a Climate- neutral Amsterdam, they show how this will take shape. The large-scale generation of renewable energy plays a key part in this. The offer (Amsterdam's contribution to the Regional Energy Strategy for the Noord-Holland Zuid energy region) gives details of the potential for large-scale generation of renewable energy by 2030.
Positive practice description	Wind: By the summer of 2019, 38 wind turbines with a combined capacity of 66 MW (128 GWh) had been installed in Amsterdam. All these wind turbines are situated in the port area (one is in the port area in the Noord neighborhood). The Roadmap for a Climate-neutral Amsterdam makes provision for an additional 50 MW of energy generated by wind turbines. Amsterdam plans to issue the necessary permits as soon as possible (and no later than 1 January 2025). 7 search areas are defined, and related plans published. Solar: Recent years have seen an exponential growth in the number of solar panels installed in Amsterdam. Amsterdam's goal is to leave no roof unused. It is no easy matter to generate large amounts of renewable energy in a compact and built-up city like Amsterdam. Nevertheless, the City of Amsterdam sees many opportunities for generating solar energy on the roofs of homes, offices, companies, and other buildings. Accordingly, this is Amsterdam's focus when it comes to generating solar energy: maximizing the potential of solar energy generation on large roofs. If only 60% of the available large roofs are utilized, the planned 400 MW installed solar energy is possible. Further contribution of up to 150 MW can come from small roofs.







### 2.3.3 Energy Efficiency - The Premise of a Better Environment in Romania – Serbia Cross-Border Area

Initiative name	Energy Efficiency - The Premise of a Better Environment in Romania – Serbia Cross-Border Area
Location	Municipality of Resita, Caras-Severin County, Romania
Population impacted	Population of Resita Municipality
Duration of initiative	01.06.2016 – 31.05.2018
Quantitative outcomes (KPIs)	<ul> <li>KPI's considered for the present project:</li> <li>Reduce the consumption of gas with 26.600 m3/year</li> <li>Reduction of CO2 emission with 54.200 kg/year</li> <li>Finalizing a bicycle rental system</li> <li>Finalizing one study regarding a renewable energy innovative solution</li> </ul>
Objective of initiative	Addressing the "division" between Romania and Serbia. Promote collaboration on topics that concerns us all, such as climate change, pollution, resources preservation Addressing the energy consumption issue by installing solar panel for domestic hot water on the roof of the Health and Sport Complex Contribute to decreasing the level of pollution and develop an accessible system for the population regarding a bicycle rental system
Positive practice description	The project is dealing with common challenges concerning the environmental protection and the sustainable use of natural resources, addressing at the same time the border and the perceived "division" between Romania and Serbia. The purpose of the initiative is to firstly reach a series of investments dedicated to developing a renewable energy system (more specifically to install solar panel for domestic hot water on the roof of the Health and Sport Complex) and to build a bicycle rental system. Additionally, cooperation between the two communities on topics related to environmental protection and the decrease of CO2 is also encouraged.
Funding	Priority Axis 2– Environmental protection and risk management
Success factors	The project brought a new business interest, giving motivation to companies related to energy efficiency, to work and invest in the area.
references / link:	www.romania-serbia.net

# 2.4 Sustainable mobility

### 2.4.1 Smart streetlights in Verona (Italy)

Initiative name	Smart streetlights in Verona (Italy)
Location	Municipality of Verona



Population	EV owners
impacted	
Duration of initiative	(2018-)2019-2021
Quantitative outcomes (KPIs)	The installation is part of the 'Electrify Verona' project, which includes other measures implemented in 2018. From 2017 to 2018, there was an increase of around 90% in registrations of electric cars. With this project: total of 100 charging points (by 2021).
Objective of initiative	Equip the city with fast charging infrastructure, even in less central areas
Positive practice description	In 2019, as part of the 'Electrify Verona' project, the first two smart streetlights with fast charging in Europe were installed in Verona. They are called 'smart' because they are able to recharge connected electric cars with a maximum power of 22 kW, but also because they are connected to internet, have video surveillance connected with the municipal police, have sensors for monitoring air quality, and can be booked via App (Verona SmartApp). They therefore represent a real piece of the Internet of Things of the 'smart cities'. The plan is to arrive at a total of 100 charging points (by 2021), which will make Verona, compared to the largest Italian cities, the municipality with the highest number of fast charging points per inhabitant.
Funding	Private and public sources
Success factors	The installation is part of the 'Electrify Verona' project, which includes other measures implemented in 2018. From 2017 to 2018, there was an increase of around 90 per cent in registrations of electric cars. The direct effect of the presence of smart lampposts cannot be measured.
references / link:	https://www.comune.verona.it/nqcontent.cfm?a_id=60963&tt=verona_agid https://www.volkswagengroup.it/Apps/WebObjects/VGI.woa/wa/viewSection?id=3959

# 2.4.2 A short- and long-term rental and maintenance service for electric vehicles in Reggio Emilia



Location	Municipality of Reggio Emilia
Population impacted	Citizens, couriers
Duration of initiative	2018- 2021
Quantitative outcomes (KPIs)	Great reduction of the impact of private cars and vans in terms of pollution, fuel consumption, noise and significant environmental and economic savings
	<ul> <li>expansion of the public charging network to 23 chargers</li> <li>450 vehicles in the city for commercial and private use</li> </ul>
	IN ITALY To date, electric vehicles circulating are 658, with the following results: - Annual CO2 savings: 442 tons - Annual fuel savings: 368,000 litres - Economic savings: 596 thousand Euros
Objective of initiative	To promote electric mobility in a concrete way
Positive practice description	The start of the electrical experience of the city of Reggio Emilia dates to 2001, when the Municipality decided to set up different pilot projects to promote and spread the use of electric vehicles as a realistic transport alternative. The Municipality set up a different business model characterized by a public-private partnership and the creation of a company (TIL s.r.l., a limited liability company with public capital whose main corporate mission is the organization and management of public and private mobility services in the territory of the province of Reggio Emilia) offering a complete service of short- and long-term rent and maintenance. Along with the replacement of the conventionally fueled car fleets of local public institutions, a commercial electric vehicle fleet has been made available for small commercial operators. Commercial segment is indeed of particular interest: vehicles are used more regularly than private cars and deliveries are frequent and with short/mid distance.
Funding	Public contribution for the 5 years, then the scheme runs with no public funding
Success factors	<ul> <li>creation of a high EVs acceptance level in the city</li> <li>creation of a leading company at national level managing the long-term rent</li> <li>the combination of national eco-incentives and local public authority initiatives which created a coordinated and strongly coherent approach across the national and local level</li> <li>the replacement of the city conventionally fueled car fleet with EVs</li> <li>the offer of a long- and short-term e-car sharing, for the promotion of electric mobility as a service and part of the daily mobility habits</li> <li>the development of a business plan with different stages in order to consolidate the results before moving to the next step and increasing the number of vehicles/targeting a new segment</li> </ul>
references / link:	https://www.interregeurope.eu/good-practices/reggio-emilias-experience-with-electric-vehicles https://www.til.it/

# 2.4.3 Walkway and Cycle Path in Großschönau

Initiative name	Walkway and Cycle Path in Großschönau
Location	Großschönau



Population impacted	approximately 1,500 inhabitants of the municipality of Großschönau and the guests of the region (about 11,000 overnight stays per year, about 20,000 visitors per year to the adventure exhibition SONNENWELT and about 20,000-day visitors to the annual bioenergy fair called "BIOEM")
Duration of initiative	Planning phase: beginning of 2016.
	design of the secondary area (and thus also the sidewalk and bike path) began in the community. Experts, such as road planners or a consultation by the "NÖ Regional GmbH" on the topic of cycling and possible subsidies, were consulted.
	Implementation phase: April to September 2016
	From April to September, the sidewalk and bike path were built, the e-bike rental was initiated, the signage boards or the guidance system were made, etc.
	In September and October, the signage and the 100 bike racks were installed by the rural youth as part of the so called "project marathon". Likewise, the population inquiry was accomplished for the forcing of the bicycle traffic. Furthermore, a big event was organized for the opening of the cycle path.
Quantitative outcomes (KPIs)	By implementing the measures, a total of about 7.35 tons of CO2, 8.24 kg of NOx, 0.26 kg of particulate matter and 28,339 kWh can be saved annually.
Objective of initiative	The new construction of the main street through Großschönau (B119) in 2016 offered a unique opportunity to take a <u>holistic view on the</u> topic of mobility and to <u>connect all 13 villages in the</u> <u>municipality for everyday bicycle traffic</u> , thus <u>motivating the citizens</u> to switch to bicycles to complete everyday journeys. The side areas and connections were to be renewed by the municipality of Großschönau. Thus, one focus of the redesign was also on the improvement of pedestrian and especially bicycle mobility.
Positive practice description	To push bicycle traffic in the municipality of Großschönau, the following measures were implemented:
	<ul> <li>Creation of cycling infrastructure in the form of <u>a combined walking and cycling path</u> through the Großschönau local area along the B 119 state road.</li> <li>Installation of <u>a guidance system/signposting</u> in and from all villages to leisure facilities, shops, inns, as well as public facilities.</li> <li>Installation of <u>bicycle parking spaces</u> at frequented points, such as schools, kindergartens, bus stops, shops, etc.</li> <li>Low-cost <u>rental of e-bikes</u> with transport basket in the municipality.</li> <li><u>Awareness-raising measures</u> in community newspapers, regional media and at events.</li> </ul>
	cycling infrastructure and community actions motivate people to cycle. Interesting: 68% of respondents use bicycles for sports, 16% for recreational activities and only 8% for everyday use. One reason for the low everyday bicycle use is certainly due to the hilly terrain, which ensures everyday use only with electric bicycles. To promote e-bikes, the municipality therefore provides two electric bicycles with transport baskets at low costs.
Funding	Around 50% of the costs were funded by "klimaaktiv:mobil". The rest was financed by the municipality.



#### **Success factors**

The project was nominated for the "Radland NÖ award". It was presented in regional media and on many homepages as well as in the newsletter of the "Climate and Energy Model Region Lainsitztal". It was presented to the population at the opening event on September 4th, 2016. Since the visitors were motivated to travel to the opening event by bike, this event was also a great awareness-raising measure at the same time.

The project was widely discussed among the population: there were and are many supporters who see a bike path as a basic requirement for safe cycling in Großschönau. Of course, there are also critics - especially those who never travel by bike and thus do not consider a bike path necessary in a small rural community. Nevertheless, it is great that the project has been and is being discussed so strongly among the population and thus the topic of cycling is on everyone's lips. And that is a basic prerequisite for motivating people to switch to cycling.

The cooperation with the rural youth can also be mentioned positively. Within the framework of the "project marathon" (an Austria-wide action of the rural youth, where a project has to be implemented in 42 hours), the rural youth has dedicated itself to the topic of cycling. Through this cooperation, especially the young population could be brought on board and motivated to ride a bike. At the same time, this also brings about follow-up activities: for example, the rural youth have planned cycling days in the coming years.

Motivating was certainly the great cooperation between all involved stakeholders in this project: For example: the planning of the sidewalk and bike path was done by the municipality in cooperation with the road construction department and road planners, with mobility consulting by the "NÖ Regional GmbH" and in ongoing coordination with the "Climate and Energy Model Region Lainsitztal". The e5 supervisor from the "Energy and Environment Agency of Lower Austria (eNu)" was also involved in the development. Many groups were also involved in the implementation. In addition to the municipality or the municipal employees, local construction companies were particularly involved. But also the "Climate and Energy Model Region" was actively involved in the processes (e.g.: recommendations for high-quality bike stands, development of the signage concept), as well as the e5 team, the municipal council and very strongly the rural youth of Großschönau, which carried out a large part of the implementation work (signage bike path, installation of bike stands, preparation of bike concept including survey, organization of the opening event).



# references / link: <u>https://www.klimaundenergiemodellregionen.at/ausgewaehlte-projekte/best-practice-projekte/showbpp/255</u>



### 2.4.4 Bike City Amsterdam – Long-term Bicycle Plan 2017-2022

Initiative name	Bike City Amsterdam – Long-term Bicycle Plan 2017-2022
Location	Municipal Area Amsterdam
Population impacted	~900.000
Duration of initiative	6 years
Quantitative outcomes (KPIs)	Smooth cycling: new bicycle connections, more space for cyclists →increase of at least 2,5m wide bicycle routes from 34% in 2016 to 50% in 2025
	Easy parking: more available parking spaces, easier location of parking, park&walk → reduce the occupancy of hotspots from 90% in 2016 to 85% in 2025, reduce the parking pressure on hotspots from 195% in 2016 to 125% in 2025, increase the cyclist rating for bicycle parking from 5,8 in 2015 to 7,0 in 2025
	<b>Better biking:</b> more pleasant cycling, appropriate behavior, promote citizen initiatives $\rightarrow$ increase the cyclist satisfaction rating from 7,1 in 2015 to 7,5 in 2025, increase the modal split of bicycle trips for selected hotspot districts from 27% in 2015 to 35% in 2025
Objective of initiative	The objective of the long-term bicycle plan 2017-2022 is to help keep Amsterdam an international cycling city for all cyclists.
	The residents of Amsterdam own almost one million bicycles, excluding rental bikes. This enormous number also poses many problems and challenges. The long-term bicycle plan shall help overcome them with concrete actions, developed from diverse surveys as well as input from stakeholder groups. Its ambition is to keep the city healthy, attractive and accessible for the future.


# Positive practice description

The long-term bicycle plan is embedded into the city targets and visions and follows several preceding actions. The three objectives (smooth cycling, easy parking, and better biking) all contain concrete measures derived from detailed analysis and have monitoring targets to check their performance efficiency.

Smooth cycling covers 20 actions, enlarging the car-free green network of Amsterdam, see below the picture with planned new links (red) and new car-free areas (violet).



Easy parking covers 22 actions, covering public and private parking areas, accessibility, and testing new ways of bicycle parking. Hotspots are described (pink color in the picture below) and these bottlenecks shall be reduced by specific measures.





	New and revitalized parking spaces will increase the bike capacity of the city:
	Station Scherdig (1,060 + 200)
	Central (Texton (1.300/22,600 + 2,301)
	Beunstraat / Oude Brugstreeg (7) Beunsteent 300; P
	Faithboilward Roles / Marti 2007 / Katterburgentmat (100) Appellyermarte (ISO) / Peter alk/user (140)
	Leidsepfein (2.000 + 562/1,500) Viselgrach (2000) Weetgrach (3.00) Viselgrach (3.00)
	Mater Hernekerpelen (2000 6. Boltherake e. (2000) 1. e. Jan vol. Heijdennimet 105/107 (4/0) 1. e. Jan vol. Heijdennimet 105/107 (4/0) 0. De Ptip (221) Wibeutmate (300) Station Scienspenk (2/6)
	Centrusteen (ABN ARX) (201)
	Station Amsterdam 72ed (3 500/11,000 + 1,23o/273e)
	Bicycle parking
	Specifications for number of ensisted bicycle parking spaces to realised
	by 2020 party mailed indicer functional facilities in preparation/under construction
	(with bigste particing spaces at ground level (number of indoor + number at ground level)
	Better biking covers 12 actions to promote appropriate behavior, and to support the choice to cycle
	of citizens.
Funding	Total costs of estimated 54 Mio. Euros, funded by the City of Amsterdam, and partially expected
	to be covered by external partners.
Success factors	Preceding history of biking
	Embedded into the city administration and city targets
	Availability of data for analysis of needed actions
	Concrete defined measures
	Ensured financing of the measures
	Defined performance measurement targets
	Evaluation of the plan
	Transparency of the plan, its actions, and its evaluation and success
references / link:	https://bikecity.amsterdam.nl/en/inspiration/long-term-bicycle-plan/

### 2.4.5 Complex revitalization project of the central area of Reşita Municipality

Initiative name	Complex revitalization project of the central area of Resita Municipality
Location	Municipality of Resita, Caras-Severin County, Romania



Population	Expected result according to the funding request:
impacted	
	The number of people expected to be impacted and thus to be using the area is 41,975, from
	34.675. Target group of the investment: 73.282 inhabitants
Duration of	2017 - 2021
initiative	
Quantitative	KPI's considered for the present project:
outcomes (KPIs)	
outcomes (RF15)	• Longth of huilt/modernized/extended hisycle tracks/naths/km); 2,072 km = 100%
	Length of built/model mized/extended bicycle tracks/paths (km). 2,972 km - 100%     achieved recult
	The length (surface of modernized nodertying (coming destrict nodertying (surface (lung)))
	Ine length/surface of modernized pedestrian/semi-pedestrian routes/areas (km/ kmp):
	3.827 km + 0.02779 kmp - achieved result 100%
	Installation of systems for reducing/banning car traffic in certain areas: 1 pedestrian
	street - achieved result 100%
	<ul> <li>Alignments of trees and shrubs: 295 trees - achieved result 100%</li> </ul>
	According to the data and forecasts included in the Traffic Study developed for the project and the
	Tools for calculating GHG emissions, it is expected that the implementation of the project will lead
	to:
	• An increase of bicycle journeys by 15.8% in the first year after the completion of the
	project implementation, respectively by 21.1% in the last year of the sustainability
	period of the financing contract
	• An increase of total number of pedestrians by 11.8% at the level of the first year after
	the completion of the project implementation, respectively by 14.1% at the level of the
	last year of the sustainability period of the financing contract
	• A reduction of individual car traffic by 6.7% at the level of the first year after the
	completion of the project implementation, respectively by 8.4% at the level of the last
	year of the sustainability period of the financing contract
	• A reduction of GHG emissions by 3.4% in the first year after the completion of the
	project implementation, respectively by 4 1% in the last year of the sustainability
	period of the financing contract
Objective of	Besides the objectives mentioned above (promoting the use of bicycles, walking, reduction of car
initiative	traffic), the project targets the GHG emission reduction, as follow:
	• Decreasing the amount of GHG emissions by 4.9% in the first year after the completion
	of the project implementation (2021), respectively by 5.5% in the last year of the
	sustainability period of the financing contract (2025);
	<ul> <li>Decreasing the amount of GHG emissions by 2.4% in the first year after the completion</li> </ul>
	of the project implementation (2021), respectively by 3.1% in the last year of the
	sustainability period of the financing contract (2025):
	• Decreasing the amount of GHG emissions by 4.6% in the first year after the completion
	of the project implementation (2021), respectively by 5.1% in the last year of the
	sustainability period of the financing contract (2025).



Positive practice description	<ul> <li>The location is in the center of the city of Resita. The interventions target the Civic Center, the pedestrian area along Revolutia din Decembrie Blvd., as well as the connecting streets between A.I. Blvd. Cuza: Str. Gratz, Str. G. Enescu, Str. N. Titulescu, Str. N. Balcescu, Str. Bielefeld and Str. Parang. The actions considered for the project have been:</li> <li>Pedestrian modernization in the central urban area of Resita - Pedestrian connection between the stations of the future tram route</li> <li>Building a pavement area suitable for traffic with bicycle, rollerblades, skateboard, or other non-motorized means.</li> <li>Setting up three bicycle parking areas; replacement of limestone surfaces - use of natural stone slabs; making public space accessible for people with disabilities and their protection (pavements with integrated tactile markings).</li> <li>Creating bicycle lanes and pedestrian walkways on the connecting streets between the major traffic arteries Revolutia Boulevard in Decembrie and A.I. Boulevard, adequate arrangement of sidewalks and alleys intended for pedestrian movements.</li> <li>Transforming the Bielefeld Street into a pedestrian area</li> <li>Restoring the public lighting installation on the six streets; construction works for the collection of rainwater from the roadway.</li> <li>Building a sidewalk with a track for cyclists, delimited from the roadway by a green zone.</li> <li>Within this project, the structure of the internal project team of UAT Resita Municipality was eestablished, consisting of a project manager, technical manager, accounting operations manager, procurement manager and assistant manager. For the implementation of the project, it was necessary to purchase specialized designers, consultants in the project were related to the unpredictable situations that occurred when the existing structures were uncovered, which could not be anticipated at the time of writing the technical solution for the realization of the road infrastructure ( financial supplement and</li></ul>
Funding	The project was financed with the help of the EU, Priority Axis 4 - Supporting sustainable urban development, Investment Priority 4.1 - Reducing carbon emissions in county seat municipalities through investments based on sustainable urban mobility plans, call for projects POR/2018/4/ 4.1/2/unfinished projects.
Success factors	The project promoted the use of alternative means of non-motorized transport through the arrangement of pedestrian areas, bicycle paths, and the provision of modern and attractive urban furniture. The 6 rehabilitated streets were completely reconfigured to reduce the area dedicated to cars and maximize pedestrian and bicycle space. All accessibility requirements for people with disabilities and special requirements have been implemented, by eliminating level differences, installing a tactile guidance system, raising pedestrian crossings to the level of the sidewalk.
references / link:	Public information can be found on the website of the Municipality of Resita, by accessing the following link: https://www.primariaresita.ro/portal/cs/resita/portal.nsf/AllByUNID/proiect-complex-de-revitalizare-a-zonei-centrale-a-municipiului-resita-00028666?OpenDocument



The rehabilitation project of 6 streets in the Municipality of Resita was given as an example of good urban mobility practices in the national press: <u>https://www.igloo.ro/un-exemplu-de-bune-practici-de-mobilitate-urbana-din -romania-6-strazi-resita/</u>

# 2.5 Stakeholder engagement

#### 2.5.1 LEAVE A MARK: An anti-smog mural for your city

Initiative name	LEAVE A MARK: An anti-smog mural for your city
Location	Municipality of Settimo Torinese
Population impacted	The middle School "Istituto Comprensivo Settimo IV" has joined the initiative with a total of 9 classes and 180 students. Inhabitants of the district
Duration of initiative	2021
Quantitative outcomes (KPIs)	100 square meters painted with Airlite paint. (Have the same capacity to reduce atmospheric pollution as a 100 square meter forest)
Objective of initiative	A symbolic and real environmental objective: the mural will be made with a special paint capable of absorbing pollution and the artistic work will clean up the city for the years to come.
Positive practice description	A competition for middle schools, promoted by ENGIE- district heating network manager- in collaboration with the Municipality of Settimo Torinese. A project designed for and with students to learn about and promote sustainable models of energy production and consumption and to offer food for thought to adults of today and tomorrow, with the aim of uniting to weigh less on the planet and make inclusive, safe and sustainable cities. The original mural will be created by the students, guided by street artists, with a special paint capable of absorbing carbon dioxide, Airlite. The work makes possible to neutralize the pollution produced by the circulation of 3,960 cars in a year.



	<image/>
Funding	Public-private, ENGIE in collaboration with the Municipality of Settimo Torinese
Success factors	<ul> <li>involvement of the new generations</li> <li>replicability</li> <li>low investment costs</li> </ul>
references / link:	Smart Murale Settimo Torinese - ENGIE

# 2.5.2 New charging stations in Turin (Italy)

Initiative name	New charging stations in Turin (Italy)
Location	Municipality of Turin
Population impacted	EV owners
Duration of initiative	2018-2019
Quantitative outcomes (KPIs)	<ul> <li>Number of participant: 5 companies</li> <li>Number of project presented: over 600</li> <li>Number of realized electric columns</li> </ul>



Objective of initiative	Promote electric mobility through the creation of a widespread electric vehicle charging network throughout the entire city area
Positive practice description	<ul> <li>Between 2018 and 2019, the city of Turin launched an expression of interest to install new electric vehicle charging stations on the municipal territory.</li> <li>Specifications: <ul> <li>open to public and private companies</li> <li>application to install at least 5 columns. Location to be indicated for 4 out of 5 columns. The fifth column to be installed in one of the points indicated by the Municipality of Turin as strategic for the development of electric mobility</li> <li>maximum 200 columns per operator</li> <li>the ground occupation fee for infrastructure and parking spaces is paid entirely by the companies. The concession lasts for 10 years.</li> <li>If charging points with 20kW-40kW power, free of charge for max. 3 years.</li> <li>If charging points with &gt;40kW power, free of charge for max. 5 years.</li> <li>The duration of the free-of-charge depends on the percentage of energy from renewable sources used.</li> </ul> </li> <li>To identify the areas where the recharging facilities will be located, the City Council considered the suggestions of residents (private citizens, commercial operators and professionals) who, already in possession of an electric car or about to buy one, could apply to the city to install an electric recharging point close to their homes/shops/offices.</li> </ul>
Funding	Private resources. Design, construction, maintenance and operation of the charging infrastructure is the responsibility of the companies
Success factors	<ul> <li>5 companies took part in the expression of interest: Recharge, Iren Mercato, Enel, Enermia, Duferco.</li> <li>47 technical tables have already been held to examine over 600 projects.</li> </ul>
references / link:	http://www.comune.torino.it/bandi/pdf/files/veicoli_elettrici_disciplinare_tecnico.pdf http://www.comune.torino.it/bandi/pdf/files/veicoli_elettrici_avviso_manifestazione_interesse. pdf

### 2.5.3 School Projects in Großschönau

hool Projects in Großschönau
egion Lainsitztal
udents of different grades from the following schools participated in the school projects:
<ul> <li>VS Weitra</li> <li>VS Großschönau</li> <li>VS Bad Großpertholz</li> <li>NMS Weitra</li> <li>NMS Bad Großpertholz.</li> <li>ot only students but also teachers benefited from the projects and received input for teaching</li> </ul>
:r =ı



	projects also have a multiplier effect by passing on information to other contacts of the participating students, such as parents, grandparents and friends.
Duration of initiative	The implementation of a school project usually lasted one school year. Planning and submission to the funding body took place in spring of the preceding school year.
Quantitative outcomes (KPIs)	School projects lead to future consumers being made aware of climate and environmental protection as early as possible and their energy competence being increased. They learn about energy saving possibilities, sustainable heat and power supply, the resources of the region, possibilities for action and much more, which can shape their consumer behavior in the long term. In addition, the school projects also led to energy-saving measures in the schools themselves, e.g., changing light bulbs to LED lighting, efficient ventilation in winter, etc.
Objective of initiative	The top priority of the school projects was to create enthusiasm among students for climate and environmental protection by communicating the need to save energy and conserve resources in an age-appropriate way. The overriding goal of the school projects was also to raise energy and climate awareness among students, teachers and parents. For example, the students got to know the energy producers of renewable energies in the Lainsitztal region, got an idea of the electricity consumption of different devices by measuring them independently, determined the type of heat and electricity supply of their parents, are aware of the resource wealth of the region and have thought about further options for action.
description	<ul> <li>Four projects were carried out by the "Climate and Energy Model Region Lainsitztal" in cooperation with schools in the region. In addition to the basics of climate change and energy, the students researched energy consumption in the school and developed measures to save energy. Furthermore, a main topic was chosen in each project, which was dealt with by means of workshops, lectures, excursions, experiments, etc.</li> <li>In the project "Self-sufficient into the future: Energy investigators Lainsitztal" the pupils explored the present and future energy potential concerning renewable energy sources of the region Lainsitztal with school-spreading questionnaires.</li> <li>In the project "Self-sufficient into the future: Sustainable living for everyone!", students focused on consumption, lifestyle and nutrition and learned about the impact of nutrition and consumption on our environment and our climate. The motivation for sustainable nutrition, thoughtful consumption and a climate-friendly lifestyle were the top priorities.</li> <li>In the project "Self-sufficient into the future: through renewable energies - students are learning how!" the schools dealt with the topic "Renewable energies, excursions were carried out, e.g., to the Sonnenwelt Großschönau or to Welios. Field trips to "energy producers" (e.g., the hydroelectric power plant in Ottenstein or a pellet plant) impressively conveyed the term "renewable" to the students. Workshops on the topic (e.g., concerning wind power) as well as the construction of workshops on the topic (e.g., water wheel) allowed students to become active themselves.</li> <li>In the project "Self-sufficient into the future: Children are starting today!" The schools dealt intensively with the topic of electricity, energy saving, energy saving as well as saving potential.</li> </ul>
	<ul> <li>In the project <u>"Climate Protection sets a Precedent"</u> holistic teaching materials and methods on the topic of "climate protection" were developed for the 1st to 9th grades in cooperation with educators. Furthermore, a concept for an Austria-wide "Climate</li> </ul>



	<ul> <li>Protection Olympics" was developed, so that children and young people are motivated to live a climate-friendly life in the school environment.</li> <li>In the follow-up project "<u>Sustainable construction and living set a precedent</u>" the teaching materials developed were disseminated in schools and the Climate Protection Olympics - a knowledge competition on sustainable building - was held.</li> </ul>
Funding	The school projects were financed by the Federal Ministry for "Climate Action, Environment, Energy, Mobility, Innovation and Technology" in Austria, the funding program "Haus der Zukunft" or by the funding initiative "Klima- und Energiefonds".
Success factors	A prerequisite for school projects is good cooperation with the participating teachers and their commitment. Through cooperation between the schools, the projects even had a cross-school effect.
	Thanks to the pedagogical experience of the project leaders, the content could be conveyed in an age-appropriate, understandable, and exciting way. In this way, the students were not only informed about climate and environmental protection but were also able to become enthusiastic about it.
references / link:	Self-sufficient into the future: Energy investigators Lainsitztal: <u>https://www.kem-lainsitztal.at/klimaschulen-projekt-2020-21/</u>
	Self-sufficient into the future: Sustainable living for everyone: <u>https://www.kem-lainsitztal.at/kem-lainsitztal.at/kem-lainsitztal/klimaschulen/klimaschulen-projekt-2017-18/</u>
	Sustainable construction and living set a precedent: <u>http://www.sonnenplatz.at/page.asp/-/216.htm</u>
	Self-sufficient into the future: through renewable energies - students are learning how: <a href="https://www.kem-lainsitztal.at/klimaschulen-projekt-2015-16/">https://www.kem-lainsitztal.at/klimaschulen-projekt-2015-16/</a>
	Self-sufficient into the future: Children are starting today: <u>https://www.kem-</u> lainsitztal.at/klimaschulen-pilot-projekt-2013-14/
	Climate Protection sets a Precedent: http://www.sonnenplatz.at/page.asp/-/218.htm
	<image/>





#### 2.5.4 New Amsterdam Climate

Initiative name	New Amsterdam Climate
Location	City of Amsterdam
Population impacted	~900.000
Duration of initiative	Ongoing
Quantitative outcomes (KPIs)	386 sustainable projects described by August 2023 Easy and immediate applicable actions for interested citizens Showcases of positive examples within Amsterdam
Objective of initiative	New Amsterdam Climate is a platform for and by Amsterdammers. The municipality of Amsterdam has taken the initiative for this platform. Its aim is to make the city of Amsterdam climate neutral, together with other parties, citizens, neighbors, and colleagues. The platform shows what each citizen can do, and what other citizens of Amsterdam are already achieving.



Positive practice description

New Amsterdam Climate is a platform showcasing best practices around the city and informing interested residents about their own contribution to a climate neutral city. It is therefore a combination of (i) emission- and energy saving activities, (ii) subsidy and funding database for initiators, (iii) showcase database of best practices, and (iv) news and information feed for active citizens within the field of sustainability.

Best practices are shown on a large map and can be filtered by topic and initiator. They can be uploaded by the redaction team, or by the residents themselves.



Each best practice is shown first as a summary screen, with the possibility of further reading and a detailed project description with contact details.









Funding	Funded by the municipality of Amsterdam
Success factors	Regular maintenance and updates
	Easy to use
	Tailored advice based on own interest for residents
	Showcases of best practice around the city
	Search function by topic, stakeholder, and with map assistance
references / link:	https://www.nieuwamsterdamsklimaat.nl/

# 2.5.5 Integrated Urban Development Strategy of the Municipality of Resita for the period 2022-2030

Initiative name	Integrated Urban Development Strategy of the Municipality of Resita for the period 2022-2030
Location	Municipality of Resita, Caras-Severin County, Romania
Population impacted	Population of Resita Municipality
Duration of initiative	03.03.2021-04.03.2021
Quantitative outcomes (KPIs)	<ul> <li>Participants: 57 people, organisations representatives, such as:</li> <li>Representatives of the territorial administrative units (communes, towns, municipalities) in the county</li> <li>Representatives of the decentralised and decentralised structures of the central administration (e.g., ISJ, AJOFM, APM, etc.)</li> <li>Representatives of the largest companies/employers and the SME sector in the city/county</li> <li>Representatives of professional associations, clusters</li> <li>Representatives of NGOs and other community and civil society organisations</li> <li>Representatives of the academic, religious, cultural organizations</li> </ul>
Objective of initiative	Realization of the Integrated Urban Development Strategy (SIDU) of the Municipality of Resita for the period 2022 - 2030.



# Positive practice description

The process of implementing the Integrated Urban Development Strategy (SIDU) of the Reşiţa municipality, for the period 2022 – 2030, was carried out in six stages.

The first step in the planning process was to set up thematic working groups and establish a timetable for the work. The experts involved in the strategic planning process proposed four working groups:

- Local economic development and tourism
- Administrative Capacity (Governance, E-governance, Metropolitan Development, Community Resilience);
- Social Health
- Urban and community development (urban planning, mobility, environment);
- Education, youth, culture

The second stage of the strategic planning process was carried out simultaneously with the first stage, namely the preliminary analysis of the city of Resita. In this process, based on the processing and analysis of existing statistical data in official databases (INS, Eurostat, ONRC, DPFBL, etc.), as well as data provided (on request) by the City Hall of Resita, a diagnosis of the recent situation of the municipality of Resita was made, as well as an analysis of the evolution in areas such as: spatial planning, urban and community development, environmental factors and climate change, urban and community development, environmental factors and climate change, culture, education, health, social and many others.

The statistical data analysis was completed by a sociological survey in the municipality of Resita. This consisted in carrying out an opinion survey on the quality of life in the municipality of Resita. The survey was conducted between November and December 2020 on a sample of 800 respondents (telephone interviews - CATI), a sample (simple random), statistically representative of the municipality of Resita. The tolerated error is 3.7% at a 95% probability level.

The preliminary analysis carried out was then presented and discussed in the five thematic working groups. Here, the participants also answered a questionnaire on the main problems of the municipality, proposed solutions, development directions, competitive advantage and priority projects of the municipality.

In the next (third) stage, based on the preliminary analysis completed and updated following the debates in the thematic groups, the strategic profile of the municipality was drawn up. Two working meetings were organised with the participation of UBB-FSPAC experts and local stakeholders.

The outcome of the working meetings led to the shaping of the strategic profile of the municipality of Resita, more precisely to the identification of strategic issues, sources of competitive advantage, but also to the definition of the vision. The key strategic factors and strategic development directions were also established. The strategic profile supported the process of establishing the municipality's strategic priorities, measures, and objectives for sustainable development for the period 2022-2030 and linking them to the five objectives of the Cohesion Policy of the European Union.

Based on the strategic directions set out in the strategic profile and the preliminary analysis, the strategic objectives were then set, and specific objectives were defined. At the same time, the action/measurable directions necessary to achieve the specific and strategic objectives were proposed.

The development of the action plan/project portfolio was the fourth stage of the strategic planning process. In this stage the project portfolio envisaged for the period 2021 - 2030 was established. It was divided into two categories: strategic projects and support projects. Strategic projects were represented by those which directly address the strategic challenges of the municipality and which, considering the sources of competitive advantage and key strategic factors, make a decisive contribution to achieving the strategic objectives and pursuing the development vision of the municipality. Strategic projects were also those projects that fall within the remit of the City of Resita and for which they have the resources, tools and levers necessary to initiate and implement them. Support projects are those projects that contribute to solving



	specific problems identified in the preliminary analysis and that fall partially or totally within the scope of the Municipality of Resita. The portfolio of support projects can be updated whenever necessary, depending on the context.
	The fifth stage consisted of establishing the framework for implementation, monitoring and evaluation of the strategy, the period 2021-2027, with a horizon of 2030. This was carried out by UBB-FSPAC experts in collaboration with representatives of the City of Reşiţa and local stakeholders who participated in the working meetings. The framework for implementation, monitoring and evaluation of the strategy sets out the implementation mechanism (institutional framework / responsible bodies, principles, risks), respectively, the timetable and monitoring indicators, how to assess the state of implementation and the measures to be taken according to the results of the evaluation.
	Public consultation on the development strategy is the sixth stage of the planning process. The strategy document has been posted on the website of the Municipality of Resita, so that the people interested would have the opportunity to make recommendations and register to take part in the public debate.
Funding	POCA 2014-2020
Success factors	The involvement of the stakeholders affected by the decisions and actions of the City of Resita played an essential role, both for understanding the specificities of the community and for defining the vision, the objectives and development directions.
references / link:	Public information can be found on the website of the Municipality of Reşiţa by clicking on the following link: https://www.primariaresita.ro/portal/cs/resita/portal.nsf/AllByUNID/C6BEEE37454ACFDAC2258 8E7002D23DB/\$FILE/Integrated%20strategy%20for%20urban%20development%20of%20the%20 Municipality%20Resita%20for%20the%20period%202022-2030.pdf

# 2.6 Urban Planning, Land Use Planning and Urban Design

### 2.6.1 LOS\_DAMA (Interreg Alpine Space)

Initiative name	LOS_DAMA (Interreg Alpine Space)
Location	Piedmont Region - Turin (three scale levels: the metropolitan scale of Corona Verde, which includes 90 municipalities; the scale of the hydrographic basin Stura di Lanzo; and the local scale with a focus on a specific area in the municipalities of SettimoT.se, San Mauro, and Mappano)



	LOS DAM! project partners located in the Alpine Space.
Population impacted	1.8 million people in about 90 municipalities
Duration of initiative	11/2016 - 12/2019
Quantitative outcomes (KPIs)	<ul> <li>Potential KPI's to be considered for similar project:</li> <li>Percentage of NBS and ES strategies successfully implemented in the masterplan.</li> <li>Percentage of the pilot area covered by the proposed GI network.</li> <li>Measure the reduction in identified vulnerabilities in the metropolitan area because of NBS and GI implementation.</li> <li>Quantify the improvement in the delivery of ecosystem services, such as improved air quality, reduced urban heat island effect, or enhanced biodiversity.</li> <li>Measure the level of engagement and participation of stakeholders in the planning process.</li> <li>Assess the effectiveness of participatory mapping of ecosystem services in influencing the project's direction and outcomes.</li> <li>Evaluate the economic benefits derived from NBS and ES, such as cost savings in infrastructure or health-related savings.</li> <li>Evaluate the cost-effectiveness of implementing NBS and ES in comparison to traditional approaches.</li> </ul>
Objective of initiative	Land use pressure is dramatically increasing as Alpine cities grow and transform. Therefore, green spaces in and around cities are in high demand for a variety of uses. LOS_DAMA! unleashed the potential of peri-urban green infrastructure for sustainable development, by improving governance and planning in this domain. The project partners cooperated to protect livable open spaces while also connecting people and green spaces throughout the Alpine region. The Piedmont Region has developed the strategic project Corona Verde, aimed at green infrastructure (GI): a system of open spaces is to be implemented to improve biodiversity and other ecological, economic, social and cultural functions. Corona Verde builds relationships within the city and between the city and the surrounding area. It serves as a testbed for a new management system for Green Infrastructure.



Positive practice description	Piedmont Region aimed to include the concepts of Nature-Based Solutions (NBS) and Ecosystem Services (ES) in the ongoing planning process of the "Corona Verde". The Corona Verde is a strategic masterplan to develop GI in the metropolitan area of Turin (which comprehends the municipality of Settimo Torinese). The output is a manual on how to apply GI and NBS in planning projects for a more resilient development of peri-urban landscapes. First, it was evaluated the vulnerabilities of the metropolitan area of Turin and the potential benefits of green infrastructure (GI) to conteract these vulnerabilities. Based on this assessment, it was developed NBS that can be applied to certain spatial situations, such as public or private green or private water designs. The result of the work is a planning document, which proposes a redevelopment scenario. The document gives suggestions for how to govern the current spatial structure and how to tackle challenges such as climate change, or human health. The document consists of a conceptual map and a textual part. The map shows an outline of the GI network for the pilot area. The textual part contains planning missions to protect, enhance or reconstruct ecosystem services in the pilot area. The new approach to include ecosystem services within pending projects should lead to enhancing multiple benefits of GI (see figure 1). For example, during the planning of settlements authorities and planners consider how to integrate NBS that contribute added value to the project. The next step will be the dissemiation of the document among project partners have implemented different tools to preserve and enhance the natural and cultural assets of landscapes in their city-regions. Tools developed by Piedmont Region: • Participatory mapping of ecosystem services • Green and blue infrastructure mangement system • Participatory mapping of ecosystem services • Green and blue infrastructure mangement system
	Aerial view of Piedmont 1:500,000
Funding	2.208.742 EUR





#### 2.6.2 Information event on sealing prevention/rainwater infiltration for municipalities

Initiative name	Information event on sealing prevention/rainwater infiltration for municipalities
Location	Sonnenplatz Großschönau
Population impacted	Inhabitants of 60 municipalities in Lower Austria (Lower Austria is one of nine federal states in Austria.)
Duration of initiative	2-hour evening event
Quantitative outcomes (KPIs)	50 municipal decision-makers were informed about sealing avoidance.
Objective of initiative	Aims of the event were:
	<ul> <li>to build knowledge for the economical use of soil sealing in the municipalities and for the deconstruction of sealed areas</li> </ul>
	<ul> <li>and to promote the mindful development of the settlement and economic area.</li> </ul>
Positive practice description	The association "Interkomm Waldviertel" invited on 03.05.2023 together with the "Climate Change Adaption Model Region (KLAR!) Lainsitztal" to an information event at Sonnenplatz in Großschönau to discuss the mindful use of land. Various experts explained how the resource-conserving handling of the different usage requirements can be implemented and how the desired use can be ensured without sealing large areas as has been done in the past:



	<ul> <li>Georg Aufhauser from "Kommunaldialog Raumplanung GmbH" presented data on soil consumption in the Waldviertel (a part of Lower Austria). These showed that the proportion of soil sealed by roads and paths is considerably higher than that sealed by buildings.</li> <li>Bernhard Scharf from the "Institute of Soil Bioengineering and Landscape Construction" of the "University of Natural Resources and Life Sciences (BOKU)" in Vienna underlined the urgency of measures to avoid soil sealing with his remarks on the changes in our habitat due to climate change. To ensure the desired use without sealing large areas, as has been the case up to now, it is necessary to have a well-founded knowledge of the existing soil.</li> <li>Franz Aschauer, civil engineer for cultural engineering and water management, gave a lecture on how much precipitation the existing subsoil can absorb and release.</li> <li>Anton Rath from the company "Gartengestaltung Rath" (commissioned with garden design) showed practical implementation solutions with the tested system "Draingarden".</li> <li>Andreas Datzinger of the department WA4 of the office of the Lower Austrian federal state government presented promotion possibilities for municipalities with deconstruction measures of sealed surfaces.</li> <li>The mayors Helga Rosenmayer (Gmünd), Anette Töpfl (Vitis), Josef Schaden (Schweiggers) and Martin Bruckner (Großschönau) reported on measures already implemented in their municipalities.</li> </ul>
Funding	The event was initiated by the KLAR! Lainsitztal - an association of the 5 municipalities Bad Großpertholz, Großschönau, Moorbad Harbach, St. Martin and Unserfrau-Altweitra. This is one of 74 Climate Change Adaptation Model Regions in Austria, which are supported by the funding association "Klima- und Energiefonds". The aim of KLAR! is to jointly prepare for climate change, to minimize the negative consequences of climate change by means of adaptation measures and to take advantage of the opportunities that arise. The costs of the event were covered by the KLAR! Lainsitztal and the association Interkomm.
Success factors	Thanks to the cooperation with the association "Interkomm", many mayors could be reached. The association "Interkomm Waldviertel" - Association for the Promotion of Municipal Cooperation - is the supporting organization of the project "Living in the Waldviertel" and one of the largest intermunicipal cooperations in Europe. The aim of the association is the exchange of experience between the municipalities, the joint use of knowledge and resources as well as the development and implementation of projects. Members of the association are about 60 municipalities from Lower Austria.
references / link:	https://www.kem-lainsitztal.at/fachveranstaltung-bodenversiegelung-vermeiden/         image: state in the state in th





#### 2.6.3 3D Amsterdam

Initiative name	3D Amsterdam
Location	Digital
Population impacted	~900.000
Duration of initiative	Available from October 31 <sup>st</sup> , 2019.
Quantitative outcomes (KPIs)	<ul> <li>3D Amsterdam is a platform where the city of Amsterdam can be experienced interactively in 3D. The main goals are:</li> <li>-) providing information about the city;</li> <li>-) making communication and participation more accessible through visuals;</li> <li>-) viewing and sharing 3D models.</li> </ul>
Objective of initiative	The Municipality of Amsterdam is building a digital copy of the city: 3D Amsterdam. It consists of a 3D model of the city, various functionalities, and an interactive web viewer. A platform with which the city can be experienced interactively, and which makes communication and participation increasingly easier. Ultimately, it should become possible to provide insight into the impact of certain interventions in advance by means of simulations in the digital world before they are carried out outside.



Positive<br/>descriptionpractice3D Amsterdam is building a 3D 'basic model' of the whole of Amsterdam for the municipality of<br/>Amsterdam. This model has several basic functionalities and can be used in all projects where 3D<br/>has added value.

New functionalities that are developed can be easily added to the basic model. All functionalities are developed with open code and open data.

This platform can be used by anyone for visualization, presentation, simulation and later also for communication and participation between municipality and citizen.

The ambition is to let the 3D basic model grow into a Digital Twin. Below is a screenshot of the 3D visualization, showing live-traffic information.



3D Amsterdam is being built with Unity and made accessible via the web. The platform uses a tilebased system consisting of 100m-by-100m tiles.

3D Amsterdam is being developed in a multidisciplinary manner by the different departments of the municipality of Amsterdam.

All data is open and can be downloaded directly via the 3D-viewer. Currently, two file formats are offered: Autodesk DXF and Collada DAE. DXF files can be opened in common CAD applications such as MicroStation or AutoCAD, but also in SketchUp and GIS applications. The Collada files are better suited for graphical applications such as SketchUp or Blender. With DXF files, the correct RD coordinates are supplied as standard, and the downloaded tiles are automatically placed in the right place. In the Collada file, the RD coordinates of the lower left corner are included in the file name and the header contains the GPS location.



57

Funding	Funded by the city of Amsterdam
Success factors	Free access and open data

	Always up to data information
	Ongoing support and feature-development
references / link:	3d.amsterdam.nl

# 2.6.4 Updating the General Urban Plan of the Municipality of Resita

Initiative name	Updating the General Urban Plan of the Municipality of Reşita
Location	Municipality of Resita, Caras-Severin County, Romania
Population impacted	Population of Resita Municipality
Duration of initiative	2021 - ongoing
Quantitative outcomes (KPIs)	<ul> <li>Potential KPI's to be considered for similar project:</li> <li>Increasing the number of tourists with x%</li> <li>Modernizing x number of streets, x number of road connections with national and county roads</li> <li>Improving the land use and urban planning</li> <li>Optimizing the protection of built heritage and the natural landscape with specific x number of initiatives</li> </ul>
Objective of initiative	<ul> <li>The benefits of updating the General Urban Plan and the related Local Urban Planning regulation refer to aspects such as:</li> <li>Improving the quality of life in the community, for example social services and infrastructure</li> <li>Improving accessibility in the municipality</li> <li>Tourism development</li> <li>Stimulation of the business environment</li> </ul>



Positive practice	<ul> <li>Modernization of streets and road connections with national and county roads</li> <li>Improving the conditions for carrying out the activity by the Local Council, regarding: the endorsement/approval of land use and urban planning documentation; Issuance of the Opportunity Notice and the Chief Architect's Notice; issuance of town planning certificates and building permits, requested by residents.</li> <li>Sustainable development and environmental protection</li> <li>Protection of the built heritage and the natural landscape</li> <li>The general urban plan and related local regulation (PUG) of the Municipality of Reşita is a directive</li> </ul>
description	document, which aims at the spatial transposition of the economic and social, cultural and institutional development program of the Municipality of Resita.
	The development in GIS format of the PUG and the related RLU will consider the following:
	<ul> <li>Correlation of the PUG proposals with the provisions of the sections of the P.A.T.N. National Territorial Development Plan, of other territorial development plans: e.g., P.A.T.Z. respectively of PATJ</li> <li>Correlation of PUG proposals with sectoral governance programs, with the Development Strategy of Reşita Municipality for the period 2015-2025</li> <li>Taking over in the PUG documentation from the General Transport Master Plan of Romania the investment objectives with a major impact on the territory of the Municipality of Reşita;</li> <li>Updating the Reşita PUG documentation in the perspective of the provisions of the normative acts adopted after its approval, of the new European documents in the field;</li> <li>Highlighting new problems and malfunctions that have occurred from the UAT territory and the provision of a set of measures to reduce or remove their negative effects;</li> <li>Improving the quality of the environment by creating green curtains and protection belts for human settlements;</li> <li>Functional profile, current state and performance of drinking, industrial and mineral water supply systems, sewage, natural gas, electricity, hydrocarbon and/or industrial fluid supply systems, as well as those of heating, telecommunications and computer networks and renewable energy sources.</li> <li>In the case of underground and overhead power networks, the authors of the study will highlight the characteristics for low, medium and high voltage, also specifying the underground and ground transformation points, including their capacity and power.</li> <li>In the case of the gas network, the pressure regulation points will be identified, including the pressure and diameters of the pipes, as well as the routing of the pipes for industrial and technological fluids, according to their type.</li> <li>In the case of the lecommunications networks, the authors of the study will map the underground</li> </ul>
Funding	EU funding + State Budget through PNRR C10
Success factors	The project "Updating the General Urban Plan of the Municipality of Reşita" will have a positive impact on the socio-economic development of the local community, as it represents the reference document that will form the basis for future investments in the infrastructure and public and private services, necessary to raise the level of attractiveness of the municipality, increasing the quality of life in urban areas, developing economic and human capital, accessibility and connectivity to transport and energy networks, protecting the values of the natural environment and cultural heritage and future sustainable development based on local tourism that capitalizes on the specific cultural identity of former industrial areas from the steel industry.
	adoption of substantiated decisions regarding the limits of the administrative-territorial unit, public



interest infrastructure, emergency situations, urban planning and territorial planning, environmental protection, natural disaster prevention.

references / link: N/A

# 2.7 Innovative integration of technologies

# 2.7.1 e-SMART e-mobility SMART grid for passengers and last mile freight transports in the Alpine Space

Initiative name	e-SMART e-mobility SMART grid for passengers and last mile freight transports in the Alpine Space
Location	Piedmont Region
Population impacted	4.234.634 people (Piedmont's inhabitants)
Duration of initiative	10/2019 – 05/2022
Quantitative outcomes (KPIs)	Potential KPI's to be considered for similar project:
	<ul> <li>The percentage of the target area covered by EV charging infrastructure, including fast- charging and regular charging stations.</li> <li>The increase in the number of EVs in use for local public transport and freight logistics because of the project.</li> </ul>
	<ul> <li>Measure the efficiency of energy consumption for charging EVs, comparing it to traditional energy sources.</li> </ul>
	<ul> <li>Quantify the reduction in greenhouse gas emissions achieved by replacing conventional vehicles with EVs.</li> <li>Gather feedback from users, public authorities, and e-mobility operators to assess satisfaction with the convices provided.</li> </ul>
	<ul> <li>Evaluate the resilience of the energy grid with the increased demand from EV charging stations and the ability to balance this demand.</li> <li>Measure the cost savings achieved by transitioning to EVs and integrating smart grid</li> </ul>
	<ul> <li>services.</li> <li>Assess the level of interoperability among different EV charging stations, making it more convenient for EV users.</li> <li>Evaluate the project's impact on local ecosystems and natural resources, ensuring sustainable development.</li> </ul>
Objective of initiative	Electric vehicles are increasingly used for local public transport and last-mile freight logistics. However, the local network infrastructure is one of the main obstacles to their large-scale introduction. To meet the higher energy demand, a harmonized approach is needed for the planning of charging infrastructure and the development of e-mobility services. e-SMART designed, tested and validated transnational instruments for an integrated planning of e-mobility smart grid services and charging stations. Living labs enabled public authorities, e-mobility and energy operators to find common solutions. Three Specific Objectives: SO1 - Foster the transnational cooperation between public and private actors for an integrated planning of E-CS and e-mobility services development in LPT and LML sectors & energy and mobility integration. SO2 - Promote a harmonized AS level approach for energy and e-mobility planning in E-CS of LPT and LML.
	SO3 - Increase methods and tools to plan e-mobility E-CS and services in the field of smart energy and mobility.



	e-SMART fundamentals based on regional / national and EU directions Policy Activation
	Training / Workshops / Webinars
	e-SMART Roadmaps finalization and MOU Policy Validation
	e-SMART toolkit prototyping Enhancing Data Data Choices of Solution and Policy Options
Positive practice	e-SMART activates cooperation among public authorities and e-Mobility and energy operators
description	for Alpine Space decision makers on intermunicipal level, to a common approach in development of
	e-Mobility services in LPT & LML and in planning of an adequate electric-vehicle charging-system network for the entire Alpine region. The project designs and tests a set of transnational operational
	instruments for public and private technicians to plan e-Mobility infrastructure and services in
	passengers and freight transports in the framework of smart grid and smart territories: Smart Energy Toolkit. The Smart Living Labs create an environment for capacity building, experiential learning
	based on the active involvement of stakeholders, experts and end-users. For this purpose, a
	country, drawing on the experience of other EU initiatives (EnoLL, INTENSSS PA) and activating a four-
	helix approach by involving partners (PP), observers (OBS) and territorial stakeholders in the fields of energy, mobility, public urban and freight transport and logistics.
Funding	2.528.350 EUR
Success factors	The e-SMART project has chosen to implement a toolkit, an instrument integrated with other territorial platforms already existing in the territories. This Toolkit is defined as a "Smart Territory"
	Data Platform & Decision Support System". A Smart Territory must promote the optimization of the
	decision-making skills of the Public Administration and Stakeholders through an integrated approach. Within the Toolkit it is possible to verify what the object of the project's feasibility study was: the
	data platform is able to connect to multiple external systems, directly and regardless of their
	process them, merge them and bring them to synthesis in operational analysis dashboards; even very
	complex data that do not refer to shared standards but are specific to the individual partner are integrated into the platform and made visibly and used in dedicated dashboards
	The e-SMART data platform and its Decision Support System or DSS, facilitates the choices of decision
	makers: it allows to increase the effectiveness of the analysis as it provides support to all those who
	research.
references / link:	https://www.alpine-space.eu/project/e-smart-2/

#### 2.7.2 Blackout protection in the elementary school Großschönau

Initiative name	Blackout protection in the elementary school Großschönau
Location	Großschönau



Population impacted	Approximately 1,500 inhabitants of the municipality Großschönau, 1400 inhabitants of the municipality Bad Großpertholz and 1,200 inhabitants of the municipality St. Martin
Duration of initiative	Since the beginning of 2023
Quantitative outcomes (KPIs)	Around 4,100 residents from the municipalities of Großschönau, Bad Großpertholz and St. Martin can use the fiber optic network even in crisis situations, like a blackout, thanks to the blackout protection installed. In addition, all buildings in the municipality of Großschönau that are connected to the district heating network can be supplied with heat even in crisis situations. In case of a blackout, the elementary school can serve as a crisis center.
Objective of initiative	The goal of the municipality of Großschönau is to ensure the maintenance of public information technology / telecommunications in the municipalities of Großschönau, Bad Großpertholz and St. Martin, as well as the local heating supply in Großschönau, even in crisis situations like a blackout, and to have a building which can serve as a crisis center. The PV system including electricity storage in the elementary school Großschönau should ensure an uninterrupted operation of this regionally important system-relevant infrastructure.
Positive practice description	The existing PV system of the elementary school Großschönau (25 kWp) was extended by 55.5 kWp and a battery storage system type BYD Premium 122.8 kWh at the beginning of 2023. The building of the elementary school in Großschönau is home to the FTTH data line center for the communities of Großschönau, Bad Großpertholz and St. Martin. In addition, the headquarters of the heating plant of the FWG district heating supply of the municipality of Großschönau is in this building. Data of the plant: Type of system: photovoltaic system with storage Type of module: rooftop system Installation site: Elementary school Module manufacturer: LONGi Solar Inverter manufacturer: Fronius Net storage capacity: 122.80 kWh Gross storage capacity: 122.80 kWh Make: BYD Box Storage technology: Lithium Ion Module area: 269.30 m <sup>2</sup> Installed peak power: 55.50 kW Annual predicted electricity yield: 51,500 kWh/a Annual predicted own consumption: 40,000 kWh/a Annual predicted feed-in: 11,500 kWh/a
Funding	Total costs: 122,935 € 49,174 € funded by the investment funding in the climate and energy model regions (funding association: Klima- und Energiefonds).
	The remaining costs were covered by the municipality of Großschönau.



Success factorsThe funding association "Klima- und Energiefonds" supports the use of climate-friendly and<br/>environmentally friendly technologies in the climate and energy model regions (KEM) through<br/>targeted funding. The aim of the investment funding is to support the KEM in the implementation<br/>of investment projects and thus to accompany them in achieving the defined measures and goals.<br/>In this way, about 40% of the total costs could be subsidized.

Another decisive factor was that the building, which houses the FTTH data line center for the municipalities of Großschönau, Bad Großpertholz and St. Martin, as well as the center of the heating plant of the FWG district heating supply for the municipality of Großschönau, has a large roof area. This could be optimally used for a PV system including blackout protection.

references / link:



#### 2.7.3 Hydrogen Hub Amsterdam

Initiative name3	Hydrogen Hub Amsterdam
Location	Amsterdam North Sea Canal Area
Population impacted	n/a
Duration of initiative	2022 to 2050
Quantitative outcomes (KPIs)	The greater area of Amsterdam has launched a Hydrogen Hub to unite all stakeholders and work towards the same goal: kickstart a revolution.
	3,5 gigawatts of windmills will be built as the first stage. The capacity shall be scaled to 20 gigawatts by 2030 and to 60 gigawatts afterwards. Once that energy is available, there need to be companies producing hydrogen. A lot of innovation is happening in small parts of the whole chain. Innovators create better parts for the electrolysers that produce hydrogen. Or creating ways to transport hydrogen.
	The port of Amsterdam wants to import one million tons of green hydrogen under the name H2Gate



Obtanting of	
initiative	shall be the European hydrogen hub. The Port of Amsterdam has a geographic advantage as a key
	logistics hub with excellent connectivity to major European markets.
Positive practice	The hub involves a collaboration between The Port of Amsterdam, Amsterdam Airport Schiphol,
description	Holland and the municipalities of Amsterdam and Zaanstad. The collaboration in the hub aims for
	the Amsterdam Area and North Sea Canal Area to achieve large-scale transition and import and
	export of hydrogen by 2050.
	The map below shows the planned network.
	HYDROGEN HUR
	AMSTERDAM
	NORTH SEA CANAL AREA
	2_0 >>> to hydrogen
	engen tij je et keeren en engen tij et keeren vij Beverwijk Eester in terster aan de bijong Zeo caalon steel
	🖌 E 🔢 📩 🖌 🔓 Naural gas free industry
	From electricity >>> Cobust wird frem general
	Umuiden/Velsen 🕑 🕞 Zaanstad 🙆 Geen hydrogen production with a hydrogen and water
	(t) contraction to Amsterdam
	Amsterdam Airport Schiphol
	Case forta Gase forta
	In June 2022, the Dutch government approvinged an increase in subsidies funding the development
	of green hydrogen production. The plan aims to make €1B more in funding available next year,
	increasing to €3.9B in 2025. Over the next decade, a planned €9B will be put towards developing
	the rollout of a green hydrogen infrastructure.
	Given its complexity and scale, collaboration across various regions and sectors is a key part of
	facilitating the transition. Partnerships between industry leaders, startups, and government bodies
	efforts in shaping a green hydrogen network have been recognized by the EU, helping North
	Holland achieve Hydrogen Valley status. With this recognition the region joins the European
	knowledge and funding.
	The prime location and extensive shipping network position the port of Amsterdam as an ideal gateway for hydrogen import and distribution to various industries across the continent. It plans
	the import of 1 Mio. tons of green hydrogen with a H2gate, see the picture illustration below.



	The port is also investing in sustainable infrastructure, with large-scale projects like Europe's largest hydrogen plant laying the foundation for an economy powered by renewable fuel. These practical applications go hand in hand with the innovation and knowledge clusters centered around energy solutions, including Amsterdam Science Park and Europe's largest hydrogen research facility (TNO's Faraday Lab).
Funding	Dutch government funds up 1 billion EUR in 2024, increasing to 3,9 billion in 2025.
Success factors	Strategic location with wind farms, port, and industry
	Fit to climate goals of the city, the region, the country and the EU
	Support from State
	Multi-stakeholder approach, including innovation hubs, established industry, infrastructure, governmental bodies as well as research and education
references / link:	https://hydrogen-central.com/hydrogen-hub-amsterdam-north-sea-canal-port/

COLUMN TWO IS NOT

### 2.8 Impacts of districts and cities to overall Sustainable Energy Vision

# 2.8.1 PROSPECT2030 - PROmoting regional Sustainable Policies on Energy and Climate change mitigation Towards 2030

Initiative name	PROSPECT2030 - PROmoting regional Sustainable Policies on Energy and Climate change mitigation Towards 2030
Location	Piedmont Region (Formazza, Frassinetto, Rivara, Novara, San Nazzaro Sesia, Torino, Chivasso, <u>Vercelli*</u> , Montà, Asti, Pianfei, Cuneo, Niella Belbo, Mondovì, Igliano)** *Similar population and characteristics of Settimo Torinese **As one of the partners involved in the project
Population impacted	1.172.684 people (as the sum of the inhabitants of the municipalities involved in the project)
Duration of initiative	01/04/2019 – 31/09/2021
Quantitative outcomes (KPIs)	<ul> <li>For Piedmont Region: <ul> <li>60 M EUR loans disbursed on 161 public buildings (58 schools, 44 town halls, 20 sport facilities, 10 social housing residential buildings, 5 hospitals, 24 multifunctional buildings);</li> <li>70% average energy savings achieved;</li> <li>12.300 ton/yeas CO2 emissions avoided.</li> </ul> </li> </ul>



Objective of	With more effective use of available public funds and more careful energy planning, the goal is to
initiative	reduce climate-changing emissions by 55% and achieve energy production from renewable sources
	of at least 32%. PROSPECT2030 focused on good energy governance practices as fundamental
	actions to reduce CO2 emissions and address the energy transition towards a low-carbon economy.
	Dialogue between the Region and local public administrations is essential: we need to raise
	awareness that urgent measures must be taken to combat climate change.
	The partnership involved seven European regions: Eco Energyland (Austria), Friuli Venezia Giulia
	(Italy), Mazovia (Poland), Piemonte (Italy), Split-Dalmatia (Croatia), Saxony-Anhalt (Germany), and
	Southern Great Plain (Hungary).
	Thanks to the use of funds from the POR FESR, the project allowed the analysis of the regional
	context and the energy efficiency measures carried out in the 2014-2020 programming period. A
	necessary starting point for reshaping the funding policies for the next period and increasing their
	effectiveness. The goal is to achieve a high level of energy sustainability in Piedmont, through the
	increase of investments in energy efficiency and using renewable energy.
	The project made it possible to enrich the analyses and assessments necessary to improve the
	regional energy planning process in progress, focusing on the priorities to be pursued for the
	energy transition, the technical and economic actions to be implemented to achieve the objectives
	and reference period. From these aspects, it follows the development of energy scenarios in the
	short, medium and long term, in line with the recent indications which foresee the goal of a zero-
	carbon Europe between now and 2050.
Positive practice	The impact of man-made climate change is evident in Piedmont, with a significant increase in
description	average temperatures of about 1.5°C. This has resulted in more frequent and severe extreme
	weather events. To address this issue and comply with EU directives, the Piedmont Region has
	initiated a process to reduce its climate-changing gas emissions by 30% and increase renewable
	energy consumption to 27.6% by 2030.
	Currently, Piedmont relies heavily on energy supplies from outside the region, particularly from
	fossil fuels. Renewable sources contribute to about 19% of the final energy consumption, while
	natural gas use accounts for 33%. The construction sector (residential and tertiary) consumes the
	most energy at over 48%. followed by transportation (27%) and industry (22%).
	Compared to 1990, there has been an estimated reduction of over 20% in carbon dioxide
	emissions. While the transition process is ongoing, there is a need for acceleration to meet the
	challenging objectives set at the European level to combat climate change. One potential action to
	drive this transition is focusing on improving the energy efficiency of public buildings, starting with
	the most energy-intensive and degraded ones, which can benefit the environment and the citizens
	who use them.
	Goals:
	<ul> <li>Strengthen the green trajectory pursued by the Region</li> </ul>
	<ul> <li>Promote the reduction of emissions climate-altering</li> </ul>
	- Increase energy efficiency and the use of renewable sources in public, residential and
	non-residential buildings
	<ul> <li>Disseminating good practices for favour replicability in similar contexts</li> </ul>
	Actions: To implement measures aimed at achieving these objectives, the Piedmont Region has
	chosen to activate funding lines dedicated to local authorities, social housing managed by the
	Territorial Housing Agencies and hospitals.
	Priority:
	<ul> <li>Nearly Zero Energy Buildings (nZEB)</li> </ul>
	<ul> <li>Percentage of reduction in energy consumption</li> </ul>
	<ul> <li>Accession to the Covenant of Mayors</li> </ul>
	<ul> <li>Exemplarity and replicability of the project</li> </ul>
Funding	1.919.596 EUR
Success factors	The success of the initiative is due to the properties of the Diadressters administrations to success
Success factors	aut "quality" aparty requalification interventions on their huildings with near performance
	Through the DOR EECR 2014/2020, the Degion financed two other recovery for the reduction of
	nirough the POK FESK 2014/2020, the Region financed two other measures for the reduction of
	energy consumption that affected public lighting systems and businesses.
reterences / link:	https://programme2014-20.interreg-central.eu/Content.Node/PROSPECT2030.html



# 2.8.2 PEACE Alps - Pooling Energy ACtion plans and Enhancing their implementation in the Alps

Initiative name	PEACE_Alps - Pooling Energy ACtion plans and Enhancing their implementation in the Alps
Location	Piedmont Region (Alpignano, Coazze, Poirino, Orbassano, Unione Comuni Nord Est Torino NET*)**
	*The municipality of Settimo Torinese is part of the Unione NET
	*As one of the regions involved in the project
Population	191 338 neonle (as the sum of the inhabitants of the municipalities involved in the project)
impacted	
Duration of	12/2015 – 12/2018
initiative	
Quantitative	In general for the project:
outcomes (KPIs)	240 Alnine Space Local Authorities supported by the project
	820 buildings and 15.400 streetlights analyzed with a centralized approach, paying the way to their
	energy refurbishment.
	26 GWh will be saved.
	35 million Euros of investments to reduce 5.6 kton of CO2 emissions.
	10 policy recommendations for policy makers at EU. National. Regional and Local (inter-municipal)
	level;
Objective of	Small municipalities often find it impossible to optimize the energy use in public buildings and
initiative	infrastructures, due to the high costs and technical expertise required for the creation of
	sustainable energy plans. Thanks to PEACE Alps, 240 local authorities pooled resources to access
	external expertise and achieve the necessary economies of scale. As a result, 15.400 streetlights
	now use highly efficient LED lamps, while many municipalities have started monitoring their energy
	consumption and work to reduce waste, with the help of centralized systems. Overall, the project
	activities have already saved a considerable amount of CO2, even more if these activities are
	continued in the future.
Positive practice	Centralized solutions in the field of:
description	- Energy management: provide tools and technical assistance to collect and analyze the
	energy data within an energy management process.
	- Energy refurbishment of buildings and public light: provide technical and legal
	assistance to set-up and manage a tender procedure for a public initiative and drive a
	project financing procedure for private initiatives.
	- Local adaptation to climate change: support several public authorities in developing an
	adaptation strategy and help them to identify the most relevant actions.
	N° of List of actions
	applications 35 Intervention in the public lighting sector
	3 Replacing public lighting with LED
	1 Flow regulators for public lighting
	32 To appoint an energy manager
	19 Carrying out a municipal energy balance or implement the SEAP
	11 To be involved in the EEA program or similar
	2 Using "ISO SOUT/14001" as an energy management system 34 Informative campaigns for climate and environmental issues (CO, reduction etc.)
	25 Environment, climate and energy education in schools
	22 Informative campaigns about climate change (webpages, articles, flyers)
	20 Promotion of green purchases
	35 Energy refurbishment plan for public buildings
	28 Energy audits for municipal buildings/energy certification
	27 To adopt measure in urban development planning and in land-use planning 16 Replacement of the lighting in public buildings
	12 Energy efficiency incentives
	Table 4: List of the most planned actions into the four action fields
Funding	2 148 881 FUR



Success factors	The project PEACE_Alps tackles the problems related to the implementation of Sustainable Energy Action Plans (SEAPs) or any other energy concepts already endorsed by Local Authorities (LAs) in the Alpine Space Area (ASA) by supporting LAs, about 100, in developing concrete actions with an inter-municipal approach. This is the core aim of the project and the way for reaching the main objective: establishing low carbon and adaptation to climate change (CC) policy instruments. The project proceeds by identifying local needs using a bottom-up approach, pooling them to create scale economies and then providing centralized solutions at regional level.

references / link: <u>https://www.alpine-space.eu/project/peace\_alps/</u>

# 2.8.3 Großschönau is community member in climate and energy organizations

Initiative name	Großschönau is community member in climate and energy organizations
Location	Municipality of Großschönau
Population impacted	Approximately 8,000 inhabitants of the region "Lainsitztal", which includes the municipalities Großschönau, Weitra, Unserfrau-Altweitra, St. Martin, Moorbad Harbach and Bad Großpertholz; especially approximately 1,500 inhabitants of the municipality Großschönau
Duration of initiative	Member of the "Climate and Energy Model Region Lainsitztal (KEM)" since 2010
	e5-municipality since 2011
	Member of the "Climate Change Adaptation Model Region Lainsitztal" (KLAR!) since 2021
Quantitative outcomes (KPIs)	. e5-municipalities undergo an evaluation by an independent commission every 4 years and are then awarded for their achievements in the climate and energy sector. Successful e5-municipalities are awarded with one to five "e " - depending on the degree of implementation of the possible energy efficiency measures.
	The municipality of Großschönau was able to achieve the following results in the assessments:
	1st certification 2012: eee (55.0%. 2012).
	2nd certification 2014: eeee (63.7%, 2014)
	3rd certification 2018: eeeee (84.1 %, 2018)
	4th certification 2022: eeeee (85.8%, 2022).
Objective of initiative	The Climate and Energy Model Region Lainsitztal has set itself the following goals:
	- Reduction of energy consumption,
	- Increase of energy efficiency,
	- Independence from fossil energy sources,
	- Use of regional renewable resources to meet energy needs.
	The long-term vision of the program "Climate and Energy Model Regions" is the 100% phase-out of fossil energy.
	With the program KLAR! - Climate Change Adaptation Model Regions - the Klima- und Energiefonds and the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology support municipalities and regions to develop and implement regionally tailored



adaptation measures. The aim is to minimize the negative consequences of climate change and to
take advantage of the opportunities that arise.
The e5-program encourages and supports Austrian municipalities to modernize their energy and climate protection policies, to save energy and thus costs and to use renewable energy sources. The municipality Großschönau is committed to the following supra-regional climate goals and tries to integrate and implement them as best as possible in its sphere of action:
- Global goals within the framework of the Paris Agreement:
o Limiting the global temperature increase to below 1.5 degrees if possible.
o Setting climate change adaptation measures
o Compatibility of financial flows with climate targets.
- 17 UN Sustainable Development Goals (17 SDGs):
o Affordable and unrestricted access to public water supplies
o Anticipatory water management
o Species-rich, climate change-adapted ecological green spaces
o Promote good coexistence and equal opportunities and solidarity to counteract the risk of poverty (e.g., enable all citizens to purchase regional and sustainable products, purchase efficient appliances, etc.)
o Creation of an attractive and lively local center (possibilities of use for all social classes)
- Fit for 55
o Reduction of greenhouse gas emissions by at least 55% compared to the level of 1990
o Increase the share of renewable energy sources to at least 40%.
o Increase energy efficiency by at least 36
- Austrian government program 2020/2024
o Mandatory and independent climate check for laws
o Increase of the renovation rate towards the target value of 3%.
o Abandonment of heating oil, coal and fossil gas for heating and cooling
o Electricity supply to 100% from renewable energy sources by 2030
- Goals of the province of Lower Austria until 2030:
o Reduction of greenhouse gas emissions by 36%.
o Generation of 2,000 GWh photovoltaic and 7,000 GWh wind power
o supply 30,000 additional households with heat from biomass and renewable gas



	o every fifth passenger car on Lower Austrian roads should be electric
	o doubling of active mobility (walking, cycling) from 22% to 44% by 2030
	- Climate targets 2030 for Lower Austrian municipalities
	o Goal: Photovoltaics
	o 2 kWp per capita for municipalities with less than 10,000 inhabitants
	o 1 kWp per capita for municipalities with more than 10,000 inhabitants
	o e-mobility: 50% climate-friendly vehicles in new registrations
	o Oil out: 70% less fossil fuels in the entire municipal area
	Targets for the municipality administration by 2030:
	o photovoltaics: 10% of photovoltaic capacity is implemented by the municipality itself
	o e-mobility: 100% of the vehicles in the fleet are climate-friendly
	o Oil out: all municipality-owned buildings and facilities are heated without oil
	o Energy efficiency
	o 100% of street lighting has been converted to LED
	o Heat consumption of all municipal buildings max. 50 kWh per m <sup>2</sup> and year
	o Climate adaptation: 10% of public areas in the settlement area are biodiversity areas
Positive practice description	The Climate and Energy Model Region Lainsitztal has existed since 2010 and has already implemented many measures in the field of climate and energy. One of the most significant measures in the period 2010/2011 was the energy data collection in the region with the creation of an energy account for all participants. The energy account provided households for the first time with detailed information on all energy consumption, a comparison to the average in the community, and the degree of self-sufficiency.
	Other major projects included the initiation of a citizen participation project for the construction of large photovoltaic plants and the improvement of the bicycle infrastructure in the municipality of Großschönau.
	Currently, the extremely successful pilot project "Raus-aus-dem-Öl/Exit fossil fuel " is underway, which aims to significantly reduce the remaining oil boilers in the region. The KEM is trying to persuade as many citizens as possible to get out of oil heating with an "all-round carefree package". Last year, an annual conversion rate of 20% was achieved.
	In addition, the five municipalities of Bad Großpertholz, Großschönau, Moorbad Harbach, St. Martin and Unserfrau-Altweitra officially joined forces in May 2021 to form the Climate Change Adaptation Model Region (KLAR!) "KLAR! Lainsitztal". Together, the five communities want to prepare for climate change, minimize the negative consequences of climate change by means of adaptation measures and take advantage of the opportunities that arise. In addition to climate protection, climate change adaptation is therefore to play a central role in the region in the future.
	The municipality of Großschönau has been certified as an "e5-municipality" since 2011. Based on quality management systems, the e5-program is a process that supports energy-efficient communities in sustainable climate protection work.



	Based on an initial analysis of the current situation, measures are planned and implemented periodically, and their effectiveness is evaluated.
Funding	The programs "Climate and Energy Model Regions" as well as "Climate Change Adaptation Model Regions" are funded by the Klima- und Energiefonds. The e5-program is represented by the non-profit association "e5 Austria - Program for Energy Efficient Communities".
Success factors	The management of the "Climate and Energy Model Region Lainsitztal" as well as the "Climate Change Adaptation Model Region Lainsitztal" is carried out by Sonnenplatz Großschönau GmbH. The comprehensive know-how as well as the many years of experience in project management and awareness raising of Sonnenplatz Großschönau GmbH contribute significantly to the success of the model regions. In addition, Großschönau has been a place for visionary sustainable developments since the early 1980s and laid an optimal foundation for certification as an e5-community with the first automatic biomass furnace in a public building in Lower Austria in 1982, numerous projects that were also honored with various awards, and the 1st Austrian Environmental Fair (BIOEM).
references / link:	https://www.kem-lainsitztal.at/ https://www.e5-gemeinden.at/e5-gemeinden/e5-gemeinden-in-oesterreich
	www.klar-lainsitztal.at

# 2.8.4 Positive Energy District in Buiksloterham

Initiative name	Positive Energy District in Buiksloterham
Location	Buiksloterham, Amsterdam
Population impacted	8.575 homes maximally over the next 13 years
Duration of initiative	2010 until 2030
Quantitative outcomes (KPIs)	Buiksloterham is changing from an industrial business park into a circular city district focused on living and working.
	Up to 8.575 homes will be developed, including social housing, making up for 62% of the area
	About 14% of the area will sustain current non-residential buildings
	10% will come to new business, 6% new retail, 3% new social facilities, and 5% other non-residential buildings.
	The green areas will be enlarged from 46.000m <sup>2</sup> in 2006 to 227.100m <sup>2</sup> in the urban plan



Objective of	Buiksloterham on the Northern IJ bank, once the area with one of the most polluting industries in
initiative	Amsterdam, is changing into a circular city district for living and working. Residents, companies,
	(knowledge) institutions and the municipality of Amsterdam work together on sustainable ways to
	live, live and work. The shared goals are set out in the Circular Buiksloterham Manifest, for example:
	<ul> <li>reuse of water, for toilets and gardens</li> </ul>
	- ensure that the neighborhood can withstand heavy rain showers
	<ul> <li>provide greenery that contributes to biodiversity and coolness</li> </ul>
	- residents and businesses separate their waste
	- new construction is easy to adapt and dismantle
	<ul> <li>reuse of raw materials and materials as much as possible</li> </ul>
	<ul> <li>generate sustainable energy in the district itself</li> </ul>
	<ul> <li>energy systems that ensure economical and efficient use</li> </ul>
	- no use of natural gas
	<ul> <li>circular construction is a condition for land allocation</li> </ul>
	<ul> <li>use of shared electric cars and bicycles as much as possible</li> </ul>
	<ul> <li>sustainable distribution of goods</li> </ul>
Positive practice	Buiksloterham is a vibrant, enterprising neighbourhood within Amsterdam-Noord where lots of
description	innovative projects are being realised, related to housing, workspaces, sustainable energy,
	architecture, culture, and recreation. With the City of Amsterdam's endorsement and the hard work
	of many invested coalitions, the brownfield has become a long-term experiment prototyping the
	potential of organic, bottom-up planning. This new model involves long-term, public-private
	partnerships putting design into the hands of residents and small collaboratives.
	At an extended the entire district of D. Science in the stand for an entire stand 0.0 billion France in funds for
	At present, the entire district of Buiksloternam is slated for an estimated 2.3 billion Euros in funds for
	future development, including 50 million Euros in construction costs for a 180-unit apartment complex
	designed by Beleer Bulksloternam in partnership with future residents.
	Ameterdam bas also received a European grant for the development of a 'nesitive' operated district in
	the city's Buikeleterbar neighbourbood. Consumers will generate sustainable energy district in
	more than they consume. The excess energy will be traded on a local energy market
	nore than they consume. The excess energy will be traded on a local energy market.
	The PED connects new and existing energy cooperatives with one another within the new
	Buiksloterham district. Current and future residents will soon not only be energy consumers – they
	will also be energy producers. Residents can store and trade the excess energy created by their
	household on a digital platform. The new area – which spans some 20.000 m2 with homes and
	businesses – will also include a hub for sharing electric vehicles.
	Below a map with all current projects happening in Buiksloterham:




Delva Landscape Architects imagine the future look of the quarter as shown below in the visualization:



Funding	Partially private developers, partially public buildings
Success factors	Brownfield-development with multi-stakeholder integration and circular city overarching goal from the beginning
	Ideal location close to the city center
	Zoning plan fixed with focus on circular aspects and given sustainability objectives
references / link:	https://www.amsterdam.nl/projecten/buiksloterham/

# 2.9 Climate change adaptation

## 2.9.1 SHREC – SHifting towards Renewable Energy for Transition to Low Carbon Energy

Initiative name	SHREC – SHifting towards Renewable Energy for Transition to Low Carbon Energy
Location	Turin (as one of the project's partners)
Population impacted	836.805 people
Duration of initiative	1/08/2019 – 31/07/2023
Quantitative outcomes (KPIs)	In general: 57 interregional learning events 8 Action Plans addressing 7 ERDF and 1 local policy instrument 15 good practices analyzed and shared 130 will increase their professional capacities Only for Piedmont Region: 92 ton of CO2 emissions reduction



	<ul> <li>5 Best Practices about energy buildings renovations funded by the European Regional Development Fund 2014/2020 and disseminated among stakeholders</li> <li>4 local authorities and associations involved in the promotion and implementation of Energy Community in the Region</li> </ul>
Objective of initiative	The SHREC project addresses the challenge of transition to a low carbon economy, in relation with renewable energy use of business and households facilitating them to invest in low-carbon, renewable energy measures reducing CO2 producing activities and shifting to activities with low CO2 footprint. Urgent need for a transition to a cleaner, more sustainable and less carbon intensive energy future is evident. The project overall objective is to improve regional and national policies increasing the share of energy from renewable sources in the overall energy mix and encouraging and facilitating the production and use of renewables by businesses, communities and households aiming at less carbon intensive energy future.
Positive practice description	The SHREC project will tackle issues of how to influence renewable energy production and consumption by business, communities and households. Partners seek to increase the awareness among households, business and public actors of the need and opportunities to use renewable energy as the low-carbon alternative energy.
	Share of energy from renewable sources in the EU Member States (2018, in % of gross final energy consumption) 50 40
	- 2020 target
	Figure 2 Share of energy from renewable sources in the EU member states, Eurostat the Action Plan developed by the Piemonte Region is based on the implementation of two actions. The first one is aiming at promoting the energy renovation of public buildings and the second deals with the promotion of renewable energy communities. On both actions the Region was very active, since the Action Plan was signed in May 2022. The Piedmont Region has taken significant actions to promote energy efficiency and the use of
	The Flediholt Region has taken significant actions to promote energy entitlency and the use of renewable energy sources in public buildings. They have secured funding and designed new programming to support energy efficiency measures. The Gasless project will facilitate joint public procurement for investment projects involving multiple municipalities. Communication events and stakeholder discussions have been conducted to disseminate best practices and discuss financial opportunities for the energy transition. They are also finalizing a regional guide for Sustainable Energy and Climate Action Plans to aid municipalities in their efforts. Additionally, the region has collaborated with academic institutions and foundations to develop a guide on setting up Energy Communities and has been actively involved in consultations and events related to renewable energy. In a nutshell, the Action Plan drafted under the SHREC project has been able to trigger new ideas, new actions and tangible steps toward an innovative a sustainable transition to a low carbon society in Piemonte.
Funding	1.844.165 EUR



Success factors	In the Integrated National Plan for Climate and Energy, it is envisaged to share the national target
	(expressed as a share of consumption, in order to also stimulate energy efficiency) through a
	burden sharing system among the Regions, as experienced with reference to the 2020 targets for
	renewables. The breakdown of the target implies also the identification, by the Regions, of the
	areas to be made available for the construction of the plants powered by RES. It is foreseen to carry
	out an online and interactive census of the surfaces of the roofs of the built areas, which allows
	them to evaluate their potential energy generation. Given the fact that this would not be sufficient
	to reach the National RES target, it is envisaged to identify areas with an energy vocation, as not
	intended for other uses. This will be done in cooperation with regions and local Authorities and
	taking into consideration the need to avoid the use of greenfield. The identification of these areas
	will also be coupled with the coordinated development of plants, electricity network and storage
	systems, with authorization procedures made easier and faster. This is a completely different
	approach to the one used in the past where the input was to identify the areas where it was not
	possible to install RES. By consequence, this new approach should promote participative processes
	that can push the territories to find solutions with an increased social acceptance.
references / link:	https://projects2014-2020.interregeurope.eu/shrec/

## 2.9.2 Rainwater utilization in the passive house community in Großschönau

Initiative name	Rainwater utilization in the passive house community in Großschönau
Location	Passive house community in Großschönau
Population impacted	5 households occupied since 2017 and used by approximately 4,800 overnight guests between 2007 and 2017
Duration of initiative	Since 2007
Quantitative	The underground tanks can save about 500 m <sup>3</sup> of water per year.
outcomes (ki is)	(Assumptions: 20 l per m <sup>2</sup> garden area and week, 5 months irrigation period, 250 m <sup>2</sup> per property; source: <u>https://www.gartendialog.de/wasserverbrauch-fuer-garten-ermitteln-liter-je-m%C2%B2-jahr/)</u>
Objective of	The aim was and is to irrigate the gardens of the passive house village mainly with rainwater in order to save valuable drinking water. Other uses in the houses, such as flucking the toilet washing
initiative	machine, etc., were not possible due to the hotel operation in the passive houses.
Positive practice description	For using rainwater for garden irrigation in the passive house community, underground tanks made of polyethylene plastic with a capacity of 3,300 l were installed. This material is resistant to almost all chemicals, biologically harmless and food safe.
Funding	The rainwater ground tanks were provided by the REHAU company.
Success factors	In the 1st European passive house community, guests had the unique opportunity to experience the functionality and cosines of a passive house while sampling it, not just for a few minutes or hours, but equal for a few days. Different designs of the buildings (wood, solid and mixed construction), architecture and technology provided the interested parties with detailed information and covered the wishes of a broad customer base. Uncertainties were reduced on the spot by competent and non-proprietary information services to the relevant specialist areas. In During this, the visitors were also made aware of the sustainable use of drinking water using rainwater.
references / link:	http://www.sonnenplatz.at/page.asp/-/152.htm





#### 2.9.3 Amsterdam Rainproof

Initiative name	Amsterdam Rainproof
Location	Amsterdam
Population impacted	~900.000
Duration of initiative	Started in 2016
Quantitative outcomes (KPIs)	Compared to 1950, the number of days with extreme precipitation has doubled in the Netherlands. According to the KNMI, the temperature in the Netherlands will rise by 1.0 to 2.3 degrees in 2050, depending on the success of a global reduction in greenhouse gases. As the temperature rises, the amount of water vapor in the air increases. More water vapor means more rain. The research indicates that with a one-degree rise in temperature, the amount of precipitation per hour in the most extreme showers increases by about fourteen percent. In other words, the heavy showers will increase in intensity and precipitation amount, and possibly also fall over a larger area.
Objective of initiative	It is raining more and more often. As a result, streets, basements, homes and buildings can be flooded. To prevent damage, the city and Waternet are working hard with their network on a rainproof Amsterdam. They ensure that the rainwater in the public space can drain away quickly. New constructions in the public space are immediately made rainproof. But that is not enough. A large part of the city consists of private land. Rainwater can also be temporarily collected there. Therefore, Amsterdam Rainproof has one overarching goal: to make Amsterdam resistant to the increasingly frequent downpours. In fact, Amsterdam Rainproof wants to make better use of the free rainwater that is now drained away. The downpours cause damage, especially as the city hardens with buildings, asphalt, and paved gardens. The objective therefore is to increase the sponge effect and transform Amsterdam into a city that cleverly bends downpours to its will. Water-permeable paving, green roofs, and facade gardens: there are many solutions that prevent damage and at the same time make the city more beautiful.



Positive practice description	The platform Am Rainproof is a mo agenda of politic extreme rainfall. It is raining harde water. As the city This results in floo must process mo One must look fu urban spaces whe The network of <i>J</i> builders, officials, strategy is to build organizations. To that can make a d a quick and embe instead of implem Rainproof. Every of The actions and s interactive design	Insterdam Rain wement of cit ians and resid ians and resid ing and exter re and more w in the than un re rainwater of Amsterdam R entrepreneur d and create a achieve functi ifference; it co idded result; f ienting it by th drop counts. uggestions ar	approof collec- izens, public dents. Toget atensely, and ed with build nsive damag water. But to aderground of can be retain can be retain can be retain can influential ionality and connects to cl focus on from memselves. A e prepared i	cts and conn servants, and ther we creat d Amsterdam ings and pave ge to houses, s o just keep or drainage syste and stored ants to activa ing corporatio broad, susta effectiveness, losely related ntrunners and ill of this unde	ects solutions d entrepreneu te a more re is simply not ements, the ra hops and office increasing it ems and start d where it falls the, connect, ons to make t inable Rainpr Amsterdam F initiatives and ambassadors r the slogan: T	s, products, an urs. We put the silient city for equipped to h inwater has no ces. The public s capacity isn't designing sma s. and stimulate he city more r oof platform fr Rainproof work d current proje s; and facilitate Fogether we ar way, using info	nd initiatives. e issue on the dealing with andle all that owhere to go. sewer system the solution. arter outdoor citizens, city ainproof. The or people and is with groups cts to achieve the program re Amsterdam
	Below an example	e for a compai	rison of best	practices:			
	Verminderen / voorkomen van schade	+++	+++	+	+++	0	
	Vergroenen	+++	0	++	0	0	
	Verduurzamen	++	0	+	0	+++	
	Verhogen waterbewustzijn	+++	++	0	0	+	
		ater vasthouden en bergen	water afvoeren	water infiltreren	waterrobuust bouwen	water gebruiken	
	And here an infog	raphic how a	neighborhod	od can be mad	le rainproof:		



	<complex-block></complex-block>
	regenvator shorer shtermen met de grinseite Anstordiane Wisternet     de Groen optiminus de Groen optim
Funding	The platform rainproof Amsterdam Rainproof was initiated by the company Waternet, the citywide water company of Amsterdam.
Success factors	Initiative started by experts dealing with the topic
	Information and illustrations done in an easy understandable way
	All types of surfaces and different solutions covered and explained
	Open platform for all services, solutions and products
	Best practices and success stories given
references / link:	www.rainproof.nl



### 3 Analysis of best practices

We need to specify that the four focus districts are very different from each other, having different geographical characteristics, different climatic types, varying sizes and populations, different urban and architectural typologies. It is not easy to find common criteria for interpreting the good practices that can be applied to all four focus districts, given their heterogeneity. However, it is possible to find common traits, a common thread to provide valuable insights for potential readers seeking to benefit from the document.

Here are some important criteria to include in your analysis and comparison:

- 1. Investment Required: In most cases, the investment is public. Except for Settimo Torinese, where some initiatives were financed by private companies, most cases were financed by the municipality or the local government, or within European funded projects/dedicated programs.
- 2. Effectiveness of Measures: The actual impact and results achieved by the implemented measures, which can involve energy savings, greenhouse gas emissions reductions, improvements in energy efficiency, and other relevant metrics, is significant when it comes to "Energy efficiency," "Renewable energy production," "Sustainable mobility," and "Climate change adaptation" measures. It has not always been possible to define numerical KPIs regarding the impacts of the adopted measure because sometimes the implemented initiatives are broad in scope, and it is not possible to measure their effects in numerical terms. Alternatively, when it comes to "Stakeholder engagement," the KPIs are of a different nature, such as those related to the number of people reached.
- 3. Degree of Replicability: It is also important to evaluate how easily the best practices can be replicated or adapted in different contexts. This criterion is pivotal because it is strictly connected to the others. Considering factors like scalability, transferability to other districts, and potential challenges in replicating the measures, most of them are highly replicable. The level of potential replication of a measure is also linked to the first criteria presented, the Investment Required, and the Effectiveness of Measure. Furthermore, it is linked to Community Engagement because the more a measure involves the community and is well accepted by it, the more easily it is replicable. Stakeholder Collaboration also plays a role in the replicability of good practice.
- 4. Community Engagement: Analyzing the level of community involvement and support in each district's initiatives is important to assess how well the practices align with the needs and preferences of residents and businesses. When possible, the number of people reached by a measure (population impacted), has been included especially in "Stakeholder engagement" good practices.
- 5. Stakeholder Collaboration: Collaboration among stakeholders, including government bodies, utilities, private sector partners, and community organizations, is a relevant



factor in achieving success. In Italy, for example, many cases involved municipalities and public stakeholders as well as private companies and ESCOs.

These criteria provide a comprehensive framework for evaluating and comparing the best practices across the diverse focus districts, offering valuable insights for those seeking to benefit from the document.

#### Next Steps

To replicate the success achieved in the Focus Districts and scale up positive energy district initiatives, the following recommendations are proposed:

- Promote Cross-Sector Collaboration: Encourage collaboration between urban planners, energy experts, local governments, and community organizations to ensure integrated planning and holistic development.
- Invest in Renewable Energy Infrastructure: Allocate resources to invest in renewable energy infrastructure, with a focus on district-scale solutions that maximize energy generation and distribution efficiency.
- Engage and Educate Communities: Develop outreach and educational programs to involve residents in energy-saving practices, fostering a culture of sustainability within the community.
- Support Research and Innovation: Continuously support research and development efforts to identify and implement cutting-edge technologies that can enhance energy efficiency and sustainability within positive energy districts.
- Advocate for Supportive Policies: Advocate for policies and regulations that incentivize sustainable urban development, streamline permitting processes, and provide financial support for PED projects.

In conclusion, the findings from the Focus Districts within Simply Positive project highlight the potential for sustainable urban transformation. By embracing the identified best practices and adopting a collaborative, innovative, and community-centric approach, we can pave the way for a greener, more resilient, and socially inclusive urban future.



81

#### Conclusions

This report examined several key aspects related to the enhancement of a successful practice in terms of energy efficiency improvement and sustainability inside a focus district.

It identified some elements for improvement that could have a significant impact on the success of these practices.

It explored the best practices in the four Focus Districts and how these practices contribute to the overall objective of a more sustainable environment towards climate neutrality.

It developed an overall conceptual vision that could guide public and private stakeholders and policymakers in improving the local strategies.

The report analyzed various characteristics that can contribute to a successful practice, including cost-effectiveness, effectiveness of measures, reliability, replicability, functionality, and user-friendliness. Among these factors, cost-effectiveness, effectiveness of measures, and replicability emerged as the most critical for success.

In this final chapter of the deliverable, we bring together the key insights and findings from our comprehensive study of available good practices and successful stories within the four Focus Districts. We have embarked on this journey to understand and promote practices that foster energy efficiency improvement and sustainability, and we have made significant strides in achieving this goal.

As we conclude our report, it is crucial to reiterate the central themes that have emerged throughout our research:

- Identification of Improvement Elements: We have identified several elements for improvement that hold the potential to significantly enhance the success of these practices. These elements encompass various aspects, such as technological advancements, policy enhancements, and community engagement strategies. These should be considered as opportunities for further development and refinement.
- Best Practices across Focus Districts: Our exploration of best practices within the four Focus Districts has illuminated inspiring examples of innovative solutions and approaches. These practices collectively contribute to our overarching objective of creating more sustainable environments as we progress toward climate neutrality. The diversity of these practices reflects the flexibility and adaptability required to address unique local challenges and opportunities.
- Conceptual Vision for Stakeholders: Our report has laid the foundation for an overarching conceptual vision that can serve as a guiding light for both public and private stakeholders, as well as policymakers. This vision encapsulates the principles of sustainability, energy efficiency, and environmental responsibility, offering a roadmap for developing and implementing local strategies that align with our shared goals.
- Critical Success Factors: Throughout our analysis, we have emphasized the importance of several key characteristics that contribute to the success of these practices. These include cost-effectiveness, reliability, comparability, functionality, and user-friendliness. Among these factors, reliability and functionality/usability have emerged



as the most critical for ensuring the long-term success and viability of the practices we have examined.

In Task 6.1, the good practices and successful stories from our Focus Districts were presented by DENK in tabular form, emphasizing their significance in relation to the identified success factors. This presentation format has allowed for a clear and concise overview of the practical insights gained from our study.

Chapter 3 served as a comprehensive study of existing good practices and innovative solutions, providing valuable support for the development of our overall conceptual vision. It underscored the importance of learning from successful initiatives already in place.

Finally, in Next Steps, we presented recommendations aimed at enhancing the success of these good practices. These recommendations are intended to guide stakeholders in refining and scaling these initiatives for broader impact.

In closing, the work presented in this deliverable represents a significant step forward in our collective journey toward creating Positive Energy Districts that are both environmentally sustainable and economically viable. As we move forward, we must continue to collaborate, innovate, and adapt, drawing inspiration from the successes we have examined and the improvements we have recommended. Together, we can pave the way for a more sustainable and energy-efficient future for our communities and the planet.



