NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

City of Padova

COMUNE di PADOVA

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1 Summary

Summary

Following its selection as one of the Net Zero Cities Mission's 100 cities, the Municipality of Padova has embarked on a **journey to revise its own decarbonization plan**, the SECAP, **with the goal of switching from its 2030 target of halving greenhouse gas emissions to climate neutrality**. This new goal is a real step change, allowing the local authority to draw up a new vision for the city with an increasing focus on environmental and social sustainability. Although Padova started on its path to reducing the city's carbon footprint a long time ago (the first plan dates back to the late '90s), reaching climate neutrality entails a **profound change**, in terms of both **new projects and synergies between various local stakeholders**, and in letting go of entrenched habits and behaviours that, while firmly rooted in our everyday lives, are now clearly incompatible with a climate-neutral city.

Another key theme of Padova's CCC concerns **residential, commercial and institutional buildings and industry**, which account for 76% of final energy usage in the city. Again, various measures are planned to drastically reduce GHG emissions: from replacing boilers and generators with electric heat pumps — where possible powered by renewable energy — to the installation of rooftop PV solar panels and the implementation of Renewable (and socially responsible) Energy Communities, from the energy upgrading of buildings through to the creation of one or more district heating networks. To achieve the climate neutrality goal, Padova Municipality, based on experience gained through its Energy Help Desk (Sportello Energia), aims to build a new One-Stop Shop: a public-private entity designed to bring together energy upgrade initiatives for residential, commercial, institutional and industrial buildings and to present private business operators (ESCOs) with investment package proposals, creating advantageous economies of scale and promoting Energy Efficiency Contracts.

A case in point is the city **transport sector**, which accounts for 24% of Padova's final energy usage, making it a key part of the decarbonization strategy. It is no coincidence, then, that 6 out of Padova's 14 Climate City Contract strategic actions concern transport. Several mutually integrated measures will be implemented to bring down mobility-related emissions, designed to change the way people move around the city: the SMART project (city-wide tram network system); the phasing out of local public transport buses running on diesel, replacing them with new electric vehicles powered by renewable energy; the promotion of cycling with the full implementation of Padova's "Bicipolitana" cycling network and city-wide installation of bike racks and bike boxes; the implementation of mobility management policies through local businesses and schools with their own mobility managers and the promotion of Mobility as a Service (MaaS); the creation of a Low Emission Zone (LEZ) and introduction of an Ultra LEZ; and the electrification of the private vehicle fleet.

There will be additional strategic Climate City Contract actions around the **promotion of green power purchasing** by various actors (industries, parishes, large building owners). This action has the potential to increase the renewable energy penetration level across the municipality in a way that is complementary to local energy production. On the **waste front**, the CCC provides for a progressive improvement in source-separated waste collection in the city, significantly reducing the percentage of non-separated waste and the pro-capita production of dry waste. The Municipality is also extending the city's green spaces and, in recent years, has adopted a **policy of boosting the tree population** with initiatives such as the 10,000 trees for Padova project. Fully achieving the Plan's goals will depend on the successful recovery of some of the city's land with the

implementation of depaving initiatives and others to increasing the permeability of urban surfaces.

Achieving climate neutrality also entails **executing targeted communication campaigns** that need to be developed to suit the socioeconomic, demographic and cultural makeup of the various segments of the population living in the city, in order to pull the right levers and use the language and communication tools best suited to each geographical and residential context. Communication campaigns will also be fine-tuned to support and boost the results achieved through strategic actions and to inform citizens and businesses about existing opportunities and the best behaviours for reducing their carbon footprint.

Overall, the Climate City Contract's strategic actions — which include the contribution of all public and private entities and individuals who have signed the Climate Agreements for whatever reason and have expressed their will and commitment to put into effect climate neutrality actions — will result in a 855,501 tonne reduction in CO_2 that, together with the goals of existing strategies (those provided for and included in the SECAP, approved by the City Council in 2021) — amounting to 168,017 tonnes of CO_2 — will result in the municipal area reducing the emissions measured in 2021 (the base year) by approximately 80%. A clog of residual emissions will be difficult to abate by 2030 ("hard to abate" emissions) due to technological, infrastructural, economic and behavioral constraints. Some of these emissions can be offset by expanding the city's green areas and planting new trees. In recent years, the City of Padova has adopted a policy of expanding tree cover, for example through the 10,000 Trees for Padova project, the full implementation of which will be conditional on the implementation of de-paving of some of the city's soils.

Producing a plan like the CCC requires a huge collective effort across the city, in which everyone is engaged and plays an active role. Hence, Padova Municipality started by coordinating a **participatory process** in which over 30 local stakeholders discussed and identified the main barriers and opportunities to achieving climate neutrality, eventuating in the signing of actual Climate Agreements in which each signatory has taken responsibility for implementing specific actions that will contribute to the city's decarbonization.
A range of actions have been put in place: mitigation and adaptation, education and training, communication, research and development and financial support actions.
To date, **36 Climate Agreements** have been signed, with a wide range of different entities: universities, research centres and competence centres, multi-utilities and Council subsidiaries, through to private companies and startups, trade associations, third sector organizations, foundations and banks. Signing up to the CCC will remain voluntary and open to all, based on a permanent Living Lab approach.

The path to climate neutrality that Padova has embarked on demands a strong innovative drive. In this sense, Padova boasts a booming innovation ecosystem, which is growing around the Municipality — the heart of a global community — the University — the epitome of culture and international vivacity — and the Chamber of Commerce — the engine driving the city's economic development. This ecosystem is fuelled by the **Innovation Council**. In 2023, Padova came second in the "Rising Innovative City" category of the European Capital of Innovation Awards.

Padova's change is already under way, having started several years ago now, though all actions are expected to be ramped up between now and 2030. This is a significant effort by the urban ecosystem that — through a combination of construction sites, events, new projects and new habits — will see the City of Padova reshaped both socially and ecologically and, above all, move full steam ahead towards climate neutrality.

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4 Abbreviations and acronyms

Abbreviations and acronyms	Definition
ACI	Automobile Club Italia
AFOLU	Agricultural, Forestry and Land Use
APPE	Associazione Provinciale Pubblici Esercizi (association of commercial businesses for Padova district)
CCC	Climate City Contract
REC	Renewable (and socially responsible) Energy Communities
CITE	Comitato Interministeriale per la Transizione Ecologica (interministerial committee for green transition)
Co.Me.Pa.	Conferenza Metropolitana di Padova (joint local government committee for the metropolitan area of Padova)
CoMO	Covenant of Mayors Office
CSRD	Corporate Sustainability Reporting Directive
DGR	Deliberazione di Giunta Regionale (Regional Council resolution)
DNSH	Do No Significant Harm
ESG	Environmental, Social and Governance
EU ETS	European Union Emissions Trading System
GHG	Greenhouse Gases
LNG	Liquefied Natural Gas
GSE	Gestore Servizi Energetici (state-owned company promoting renewable energy)
H2020	Horizon 2020 funding programme
ICT	Information and Communication Technologies
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Process and Product Use
LEZ	Low Emission Zone
MaaS	Mobility as a Service
MASE	Ministero dell'Ambiente e della Sicurezza Energetica (Italian ministry for the environment and energy security)
NBS	Nature-Based Solutions
NGGI	National Greenhouse Gas Inventory
NZC	Net Zero Cities
NGO(s)	Non-Governmental Organization(s)
SEAP	Sustainable Energy Action Plan
SECAP	Sustainable Energy and Climate Action Plan
PI	Piano degli Interventi (city planning intervention plan)
NCCAP	National Climate Change Adaptation Plan
INECP	Integrated National Energy and Climate Plan
NRRP	National Recovery and Resilience Plan
PRMC	Piano Regionale per la Mobilità Ciclabile (Padova regional cycling plan)

Abbreviations and acronyms	Definition
RTP	Regional Transport Plan
GTP	Green Transition Plan
PTRC	Piano Territoriale Regionale di Coordinamento (coordinating spatial plan for the Veneto region)
PUA	Piani Urbanistici Attuativi (city planning schemes for implementation)
SUMP	Sustainable Urban Mobility Plan
PUN	Piattaforma Unica Nazionale (Italy's national database of charging infrastructure)
SSW	Source-Separated Waste
NES	National Energy Strategy
SDGs	Sustainable Development Goals
SMART	Sistema Metropolitano a Rete Tranviaria (Padova's city-wide tram network system)
SIR	Sistema Intermedio a Rete (Padova tram line)
NCCAS	National Climate Change Adaptation Strategy
RCCAS	Regional Climate Change Adaptation Strategy
LPT	Local Public Transport
EU	European Union
U-LEZ	Ultra Low Emission Zone
SEA	Strategic Environmental Assessment
ZIP	Zona Industriale di Padova (Padova's industrial area)

5 Introduction

Table I.1: Introduction

Padova Municipality has been well aware of the key role of Climate Action since 1999, when the City Energy Plan (P.EN.CO) was approved. The **energy and climate planning timeline** has advanced over the years since:

- in 2004, with the Energy Efficiency Plan
- in 2009, with the Operational Energy Plan
- in 2011, with the SEAP (Sustainable Energy Action Plan), which set 2020 targets
- in 2016, with guidelines for drawing up the Adaptation Plan
- in 2021, with the SECAP (Sustainable Energy and Climate Action Plan) with new 2030 targets.

Figure I.1: Padova City energy and climate planning timeline

Padova Municipality's vision is currently incorporated into the **Sustainable Energy and Climate Action Plan**[1], which includes the main purposes and long-term goals in terms of sustainability and environmental protection. The SECAP was approved by Council on 14 June 2021 with the following goals: to accelerate the decarbonization process, increase the ability to mitigate and adapt to climate change, increase green power and optimize energy efficiency across all sectors.
In early 2022, the Mayor decided to sign up to the EU Climate Neutral and Smart City Mission, committing the City to achieve climate neutrality by 2030 and bringing the SECAP's planned objectives forward by 20 years. Key to the success of this undertaking is strong cooperation between stakeholders both within and outside government, according to a horizontal and vertical governance model, and with extensive engagement across the municipality.

Padova Municipality has taken on the mantle of steering and monitoring the development of the Climate City Contract, working **in synergy with a number of different entities, institutional and otherwise, at every level**. The model adopted by Padova has two levels:

- a vertical level, which features different relations with higher-level bodies (Province of Padova, energy distributors, Ministries, national agencies, network with the other eight Italian Mission Cities);

1 https://www.padovanet.it/informazione/il-piano-dazione-lenergia-sostenibile-ed-il-clima-di-padova-paesc

- a horizontal level defining governance at a local level.

The political direction of the Mission is determined by the Mayor and the Councillor for the Environment, who identify the general policies for achieving the 2030 climate neutrality target. The Environment and Land Department — supported by Senior Management and Financial Resources, and working in synergy with other relevant Departments — has the task of coordinating the planning, execution and monitoring of the Climate City Contract.
An interdepartmental Task Force was established in 2022 and will be assisted by a Steering Group with tasks of a more operational nature: from exploring and conceiving actions, projects and programmes to the organization of citizen communication and information activities and setting up meetings and sessions for the exchange of information and collaboration with local actors.
Embracing the horizontal cooperation concept, the Municipality has sought the University of Padova's contribution for research and help with certain topics, with the signing of a memorandum of understanding during the course of 2023: the University is an important entity for the municipal area for the promotion of innovation and research and for underpinning decisions made towards achieving climatic neutrality.
On the multistakeholder collaboration front, the Municipality has established a strong and highly active and cooperation-oriented network of local public and private sector actors. This synergistic relationship — which has come together in a Living Lab, created as part of the European 2ISECAP project[2], funded by the H2020 programme — is spawning numerous opportunities, not least the Manifesto for the formation of RECs.

When it comes to emissions, Padova Municipality has identified 2021 as the base year for calculating the GHG emissions reduction and 2030 climate neutrality targets. 2021 was the last year monitored as part of the SECAP's implementation. 2021's emissions have already been reduced by 31.8% when compared to the SECAP base year (2005), indicating a positive trend in line with the identified targets. A summary of the city's emissions picture is given in module A-1. Following its selection as one of the EU's 100 Net Zero Cities, the city has embarked on a path to further scale up and extend the action portfolio, given that the actions provided for by the SECAP are no longer sufficient, with their "less ambitious" goal of halving GHG emissions by 2030. A full report on measures included in the CCC is presented in module B-2.

Taking the current emissions picture as its starting point, strategic pillars were defined for the "**Padova 2030", *Carbon-Neutral & Smart City*** plan:

- sustainability, with a view to achieving climate neutrality goals,
- digitalization, turning Padova into a European Smart City,
- the "Grande Padova" scheme, designed to attract talent to provide innovative solutions that improve top-quality public services and aim to promote citizens' general health and wellbeing.

Achieving these goals necessarily entails an integrated action across multiple sectors in which all areas responsible for GHG emissions in the local context are included and managed in a coordinated manner. In this sense, Padova Municipality can lay claim to the integration of numerous **City plans**, approved in recent years, as listed below:

- Sustainable Urban Mobility Plan- SUMP, 2020[3]
- Green Spaces Plan, 2022[4]
- Piano degli Interventi (city planning intervention plan), 2023[5]
- Building Regulations, last updated in 2024[6]

2 https://2isecap.eu/
3 https://www.padovanet.it/informazione/piano-urbano-della-mobilit%C3%A0-sostenibile-pums-di-padova
4 https://www.padovanet.it/informazione/piano-del-verde-comunale
5 https://padovanet.it/informazione/piano-degli-interventi-pi-mappa-interattiva-ed-elaborati
6 https://www.padovanet.it/informazione/regolamento-edilizio

- Green Purchasing Plan, currently being updated.

The integration of the above Plans, done through the SECAP and Climate City Contract, is essential for a transition that takes a holistic approach, that is familiar with and takes into consideration the dynamics and needs in the various sectors involved in the municipality's decarbonization process, and that works so that each sector makes a synergistic contribution to achieving climate neutrality.

Figure I.2: Plans approved by Padova Municipality that integrate decarbonization measures for the municipality

Table I.1: Climate neutrality target by 2030

Sectors	Scope 1	Scope 2	Scope 3
Stationary energy	Included	Included	Not applicable
	No exclusions	No exclusions	
Transport	Included	Included	Excluded as per NZC guidelines
	No exclusions	No exclusions	
Waste and wastewater	Included	Not applicable	Not applicable
	No exclusions	Not applicable	
IPPU	Not applicable	Not applicable	Not applicable
		Not applicable	
AFOLU	Included	Not applicable	Not applicable
	No exclusions	Not applicable	

Geographical boundary	Same as city administrative boundary	Smaller than administrative boundary	Larger than administrative boundary
Tick correct option	X		
Specify excluded areas	No excluded areas		

Map

Figure I.3: Location of Padova City in Italy's North quadrant

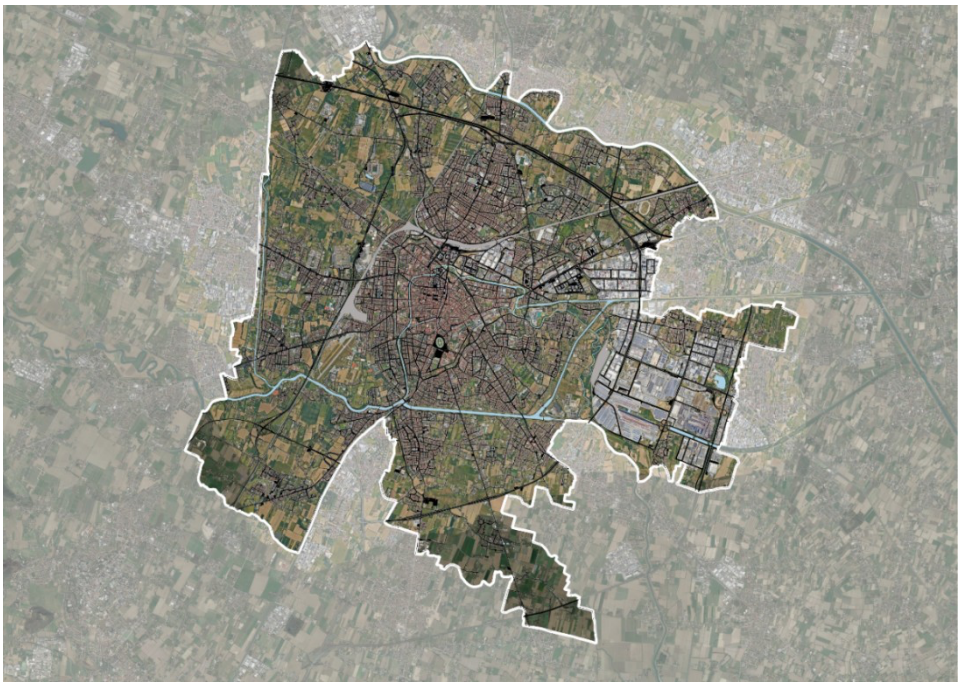

Figure I.4: Padova Municipality's administrative territory

6 Part A – Current state of climate action

6.1. Module A-1 Greenhouse gas emissions baseline inventory

Driven by its firm belief in the need to play an active role in tackling climate change, Padova Municipality joined the European Covenant of Mayors initiative back in 2010 (following City Council resolution no. 41 dated 10/05/2010).

The Sustainable Energy Action Plan (SEAP) was approved in 2011, taking 2005 emissions as its baseline and identifying a 2020 target of reducing them by 20%. This goal, in line with the EU policies of the Energy & Climate 20/20/20 package, was already achieved in 2017, an annuality monitored when the SECAP, successor to the SEAP, was drafted. With the Sustainable Energy and Climate Action Plan (SECAP), approved by the City Council in June 2021 (resolution no. 64 dated 14/06/2021), the municipality's GHG emissions reduction target was doubled, moving the target year to 2030, in line with the targets set by the new Covenant of Mayors and by EU and national strategies.

The results obtained with the SEAP have shown how the decarbonization trend is associated with policies and actions that originate from different institutional levels, but whose effects materialize at the municipal level. The policies to incentivize energy upgrades stimulated by the Ecobonus are an example of how national policies have had an important effect on reducing energy consumption in the Padova area. This awareness has pushed the Administration toward more ambitious goals and toward actions to be promoted locally that can complement and enhance the effect of regional and national policies.

The emissions inventory has been updated at regular intervals, through subsequent monitoring, up to the latest version referring to the year 2021, approved by the City Council with act. no. 326/2023 dated 27/06/2023.

The Climate City Contract (CCC) baseline inventory is therefore an additional step forwards in the process of quantifying local emissions and is built on the findings of the latest update of the SECAP emissions inventory (base year 2021). Nonetheless, the latter inventory has been calculated using the methodology defined at a European level by the Covenant of Mayors initiative, which differs slightly from the one used as part of the Mission 100 Carbon Neutral and Smart Cities, meaning some amendments and additions are needed. Consequently, the Climate City Contract baseline inventory has been brought into line with the calculation method indicated in the documents made available by the Net Zero Cities consortium.

Below is a list of the main differences between the EoI emissions inventory and the Climate City Contract baseline for the same year:

- **Emission factors**: different emission factors from those used in the SECAP have been applied to calculate emissions. Consequently, while in the SECAP the National Greenhouse Gas Inventory NIR emission factors have been used to calculate the CCC baseline, emission factors from the IPPC GHG approach in terms of tCO_2eq have been applied here. These calculations of a technical nature refer to the methodological system developed in 2006 by the IPCC in order to create common methodologies for estimating GHG emissions. This means that, while both are based on the same final energy use values, the resulting total emissions differ.

- **Additional emission source sectors**: this addition is necessary as it is explicitly required as part of the 100 Carbon Neutral Cities Mission. The additional source sectors are as follows:

    - **Agriculture Forestry and Other Land Use** (AFOLU), which takes into account emissions that are directly released into the atmosphere and not connected to final energy usage, relating to the agricultural sector (e.g. manure management, use of fertilizers, muck spreading, etc.) and changes to intended land use. In this specific case, the EoI emissions inventory did not take into account emissions associated with livestock rearing and soil fertilizing (nitrogenous waste management, crops grown with or without fertilizers, enteric fermentation and organic waste management) and neither CO_2 absorption by trees in the city's public and private spaces. Assessments conducted as part of Padova Municipality's Green Spaces Plan (approved in 2022) have quantified the benefits to the ecosystem offered by the tree population, which includes the ability to capture and store carbon. The total amount of carbon sequestered annually is approximately 5,070 tonnes for the whole municipal area, equivalent to 18,625 tonnes of CO_2 removed from the atmosphere. Overall, the positive contribution linked to this absorption can completely cancel out the emissions associated with crop and livestock agriculture, producing an additional benefit to offset emissions from other sectors.

    - **Industrial Production and Product Use (IPPU) sector**, which computes emissions from industrial production processes, i.e., emissions associated with the production of a given product[7].

    - **Emissions associated with methane leaks** from the gas distribution network in the City of Padova (CH4).

    - **Emissions associated with wastewater treatment** (CH4, N2O).

Below are the emissions divided up according to the model provided by the Net Zero Cities consortium, with the lines featuring the different sectors and the columns the relevant energy carrier, sorted into the three Scopes: where Scope 1 refers to GHG emissions generated by combustion processes within the geographical boundary of the system being investigated (in this case, inside the city boundary); Scope 2 refers to emissions resulting from the use of grid-supplied energy (e.g. electricity and district heating), where the energy generation process takes place outside the system's geographical boundary (e.g. thermal power station generating electricity); Scope 3 refers to emissions generated outside the city boundary but related to processes that occur within the municipality (e.g. production of waste/wastewater produced inside the municipality that are then sent to waste-to-energy/treatment facilities located in other municipal areas).

7 This sector is not counted because all production activities located in Padova that have emissions related to IPPUs are included in the Emission Trading Scheme and are therefore unbundled from the municipal emissions budget, as required by the Covenant of Mayors guidelines

Table A-1.1: Final energy use by source sectors													
BASE YEAR	**2021**												
Unit	MWh/year												
	Scope 1										**Scope 2**	**Scope 3**	**Total**
BUILDINGS	**2,323,746**	**4,426**	**6,440**	**69,473**	**-**	**-**	**228**	**6,475**	**-**	**-**	**1,489,877**	**-**	**3,900,665**
Fuel type/ energy carrier used	Methane	LPG	Fuel oil	Heating oil	Diesel fuel for road use	Petrol	Solar hot water	Biomass	Biogas	Biofuels	Electricity		
TRANSPORT	**67,266**	**66,461**	**-**	**-**	**749,948**	**254,818**	**-**	**-**	**9,140**	**54,487**	**7,719**	**-**	**1,209,839**
Fuel type/ energy carrier used	Methane	LPG	Fuel oil	Heating oil	Diesel fuel for road use	Petrol	Solar hot water	Biomass	Biogas	Biofuels	Electricity		
WASTE	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Fuel type/ energy carrier used	Methane	LPG	Fuel oil	Heating oil	Diesel fuel for road use	Petrol	Solar hot water	Biomass	Biogas	Biofuels	Electricity		
Industrial Process and Product Use (IPPU)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Fuel type/ energy carrier used	Methane	LPG	Fuel oil	Heating oil	Diesel fuel for road use	Petrol	Solar hot water	Biomass	Biogas	Biofuels	Electricity		
Agricultural, Forestry and Land Use (AFOLU)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Fuel type/ energy carrier used	Methane	LPG	Fuel oil	Heating oil	Diesel fuel for road use	Petrol	Solar hot water	Biomass	Biogas	Biofuels	Electricity		

Table A-1.2: GHG emissions by source sectors				
BASE YEAR	**2021**			
Unit	tCO_2eq/year			
	Scope 1	**Scope 2**	**Scope 3**	**Total**
BUILDINGS	514,342	424,615	-	938,957
TRANSPORT	301,330	2,200	-	303,530
WASTE	52,221	-	-	52,221
Industrial Process and Product Use (IPPU)	-	-	-	-
Agricultural, Forestry and Land Use (AFOLU)	-11,534	-	-	-11,534
TOTAL	**856,359**	**426,815**	**-**	**1,283,174**

Table A-1.3: Emission factors applied						
For calculation in tonnes of gas or MWh of primary energy						
Methodology used: IPCC						
Primary energy/energy source	Carbon dioxide (tCO_2eq)	Methane (CH_4)	Nitrous oxide (N_2O)	F-gases (HFC and PFC)	Sulphur hexafluoride (SF_6)	Nitrogen trifluoride (NF_3)
Electricity [MWh]	0.285	-	-	-	-	-
Methane gas [MWh]	0.202	-	-	-	-	-
Heating oil [MWh]	0.268	-	-	-	-	-
Diesel fuel for road use [MWh]	0.276	-	-	-	-	-
Petrol for road use [MWh]	0.2575	-	-	-	-	-
LPG [MWh]	0.227	-	-	-	-	-
Fuel oil [MWh]	0.268	-	-	-	-	-
Biomass [MWh]	0.007	-	-	-	-	-
Solar hot water [MWh]	0	-	-	-	-	-
Geothermal [MWh]	0	-	-	-	-	-
Biofuels [MWh]	0.001	-	-	-	-	-
CH_4 [tonnes]	28	-	-	-	-	-
N_2O [tonnes]	265	-	-	-	-	-

Table A-1.4: Activity by source sectors								
BASE YEAR	**2021**							
Unit	$tCO_2eq/year$							
	Scope 1				**Scope 2**			**Scope 3**
BUILDINGS	**193,200**	**164,561**	**133,031**	**23,551**	**71,607**	**134,987**	**218,020**	**-**
Activity	Residential	Tertiary including municipal	Industry and agriculture	Fugitive CH_4 emissions from distribution systems	Residential	Tertiary including municipal	Industry and agriculture	
TRANSPORT	**293,601**	**7,441**	**288**	**-**	**932**	**1,268**	**-**	**-**
Activity	Private transport	Local public transport	Municipal fleet		Private transport	Local public transport	Municipal fleet	
WASTE	**1,764**	**1,113**	**49,344**	**-**	**-**	**-**	**-**	**-**
Activity	Wastewater management CH_4	Wastewater management N_2O	Waste incineration					
Industrial Process and Product Use (IPPU)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Activity								
Agricultural, Forestry and Land Use (AFOLU)	**4,563**	**2,528**	**- 18,625**	**-**	**-**	**-**	**-**	**-**
Activity	Agricultural emissions CH_4	Agricultural emissions N_2O	Urban green space absorption					

A-1.5: Graphs and charts

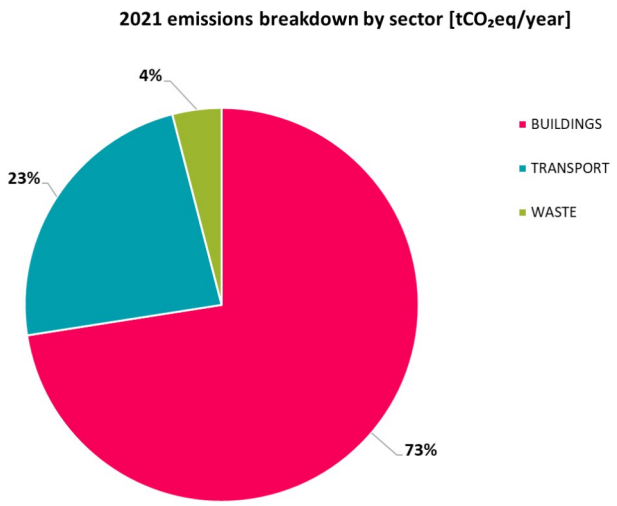

Figure A.1: 2021 emissions breakdown by source sector [tCO_2eq]

The chart shows how most of Padova City's emissions are related to the "Buildings" sector, which accounts for 73%. They mainly include emissions due to final energy use related to the use of public and private building stock (including industrial buildings) and relevant equipment found throughout Padova's municipal area (e.g. public street lighting). These emissions include losses associated with the methane gas distribution network serving civil and industrial buildings. The city's building stock (which totals approximately 31,000 buildings and 100,000 residential dwellings, plus 1,000 buildings for industrial use and another 2,100 buildings used by the tertiary sector) is particularly old and, even though energy upgrading has been carried out as a result of tax break policies in recent years (e.g. the "Superbonus 110" scheme), much of the housing stock still needs work to improve energy performance and thermal comfort.

23% of emissions are instead attributable to vehicular traffic. In 2021, 90% of the total annual kilometres were still being driven in cars or other motor vehicles.

Lastly, 4% of the city's GHG emissions is linked to the "Waste" sector, which includes emissions that are not attributable to energy usage, instead referring to CH_4 and N_2O produced as a result of wastewater treatment and CO_2 from incineration.

It should be noted that the chart in Figure A.1 has been compiled on the basis that the contribution of the AFOLU sector is zero.

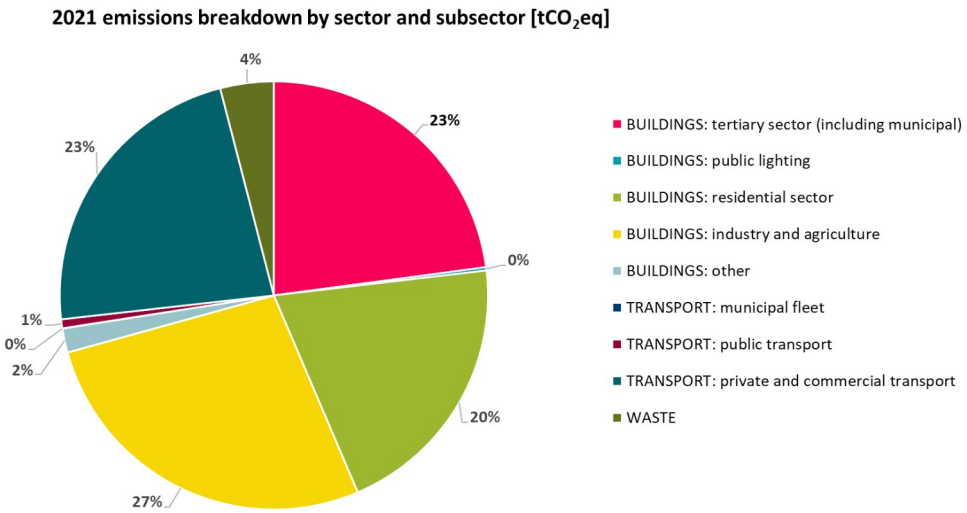

Figure A.2: 2021 emissions breakdown by subsector [tCO_2eq]

The chart in Figure A.2 gives a more detailed breakdown of the data illustrated in Figure A.1. More specifically, the "Buildings" sector is split into the SECAP emission subsectors: residential, tertiary, industry and agriculture, public lighting, waste, while the “Transport” sector is divided into the sub-sectors public transportation and private transportation. In this analysis, the tertiary sector also includes municipal buildings, and the industry sector also includes agriculture. In addition, a further subsector has been added: "Buildings: other", which refers to emissions related to methane distribution (rather than to energy usage). A picture emerges in which the "Industry and agriculture" subsector comes top for emissions contribution, as the final energy use related to this sector accounts for 27% of total emissions. Having a nationally and internationally significant (for Europe) industrial hub (Padova's so-called "ZIP" industrial area) — which is very logistics heavy — makes introducing energy efficiency improvement measures and the production of renewable energy in this area of the city a key priority.
Coming in just below is the "private and commercial transport" subsector, accounting for 23% of total emissions, followed by the "tertiary (including municipal)" subsector with 22% of total emissions. The residential subsector comes in fourth place, with 20% of emissions.
It should be noted that the chart in Figure A.2 has been compiled on the basis that the contribution of the AFOLU sector is zero.

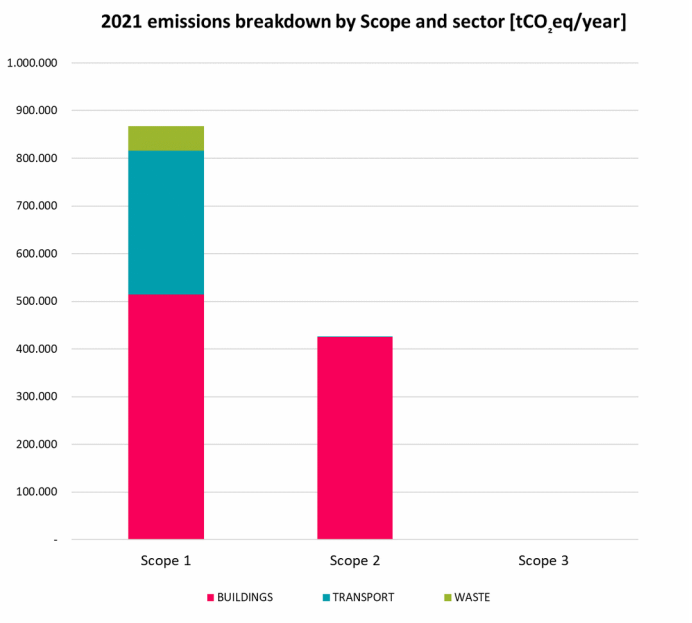

Figure A.3: 2021 emissions breakdown by Scope and sector [tCO_2eq]

The histogram in Figure A.3 shows how most emissions can be attributed to Scope 1, made up of over half of the emissions of the Buildings sector and all emissions generated by the Transport and Waste sectors. At the time of the analysis, there were no emissions to be attributed to Scope 3. Further in-depth investigations will be carried out over the coming years to give a more detailed picture of the emissions contribution of certain supply chains, such as food and clothing. It should be noted that the chart in Figure A.3 has been compiled on the basis that the contribution of the AFOLU sector is zero.

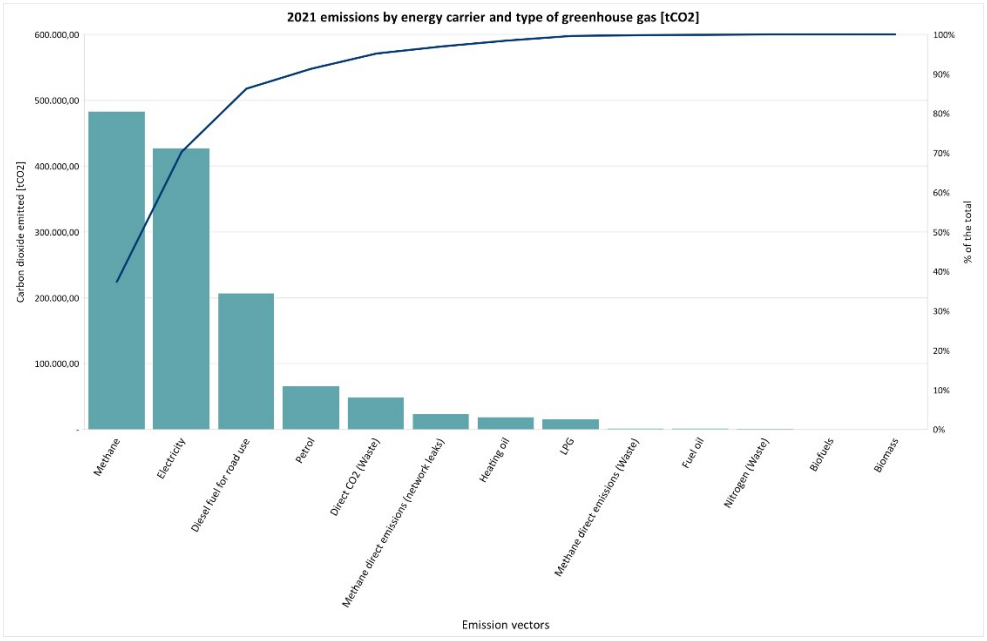

Figure A.4: 2021 emissions breakdown by energy carrier/GHG

The histogram in Figure A.4 shows emissions for the Padova municipality broken down by energy

carrier/GHG: it reveals that the two main sources are methane gas and electricity consumption. The Pareto line on the chart clearly shows that the two above-mentioned energy carriers are responsible for 75% of total emissions. The progressive electrification of heating systems (currently running on methane gas) will lead to the two energy carriers swapping places in the coming years, with electricity destined to become the most widely used carrier, without counting the efficiency improvement and energy self-generation policies, which should reduce the total percentage of all carriers overall.

Please note that the negative contribution of the AFOLU sector (as a result of the benefit brought by the annual carbon sequestration capacity of the city's trees, which far outweighs the other agriculture-related emissions) — which would bring the emissions total down slightly — has not been factored into the percentages relating to each sector in any of the above charts

A-1.6: Description and assessment of greenhouse gas baseline emissions

The Padova CCC 2021 baseline has been quantified as amounting to **1,283,174 tCO_2eq**.

The general picture shows how most emissions relate to Scope 1 as they are generated by combustion processes (heating systems, vehicles, etc.) that take place directly within the city boundary. Scope 2, on the other hand, covers the rest of the emissions and consists solely in final electricity use.

When it comes to the breakdown by sector, most emissions (approximately 938,957 tCO_2eq) fall into the "BUILDINGS" category. In the "BUILDINGS" sector, most emissions can be attributed to the industry and tertiary subsectors. They are followed, in the "TRANSPORT" sector, by private and commercial transport, which account for approximately 303,530 tCO_2eq, which amounts to roughly 24% of total emissions. The WASTE sector accounts for the remaining emissions, with an overall percentage of slightly higher than 4% of the total. Lastly, the AFOLU sector, based on the quantification of sequestration due to the city's tree population, generates a negative contribution, namely -0.9%, which reduces the total amount of emissions slightly.

Table A-1.5: 2021 baseline emissions by subsector

	tCO_2eq	%
BUILDINGS: tertiary sector (including municipal)	296,337	23.1 %
BUILDINGS: public lighting	3,210	0.2 %
BUILDINGS: residential sector	264,807	20.6 %
BUILDINGS: industry and agriculture	351,052	27.4 %
BUILDINGS: other	23,551	1.8 %
BUILDINGS TOTAL	**938,957**	**73.1 %**
TRANSPORT: municipal fleet	288	0.0 %
TRANSPORT: public transport	8,709	0.7 %
TRANSPORT: private and commercial transport	294,533	23.0 %
TRANSPORT TOTAL	**303,530**	**23.7 %**
WASTE	**52,221**	**4.1 %**
IPPU	**-**	**0.0 %**
AFOLU	**- 11,534**	**- 0.9 %**
TOTAL	**1,283,174**	**100 %**

Please note that, in the above table, the percentages relating to each sector have been calculated also taking into account the negative contribution of the AFOLU sector: consequently, these percentages differ from those illustrated in the previous pie charts.

Final energy use has been calculated using usage data in MWh from the 2021 emissions inventory compiled as part of the SECAP. However, certain changes have had to be made in putting together the CCC baseline in order to comply with the methodological instructions contained in the "Infokit for Cities" guidelines.

The differences between the EoI baseline and the CCC baseline, as mentioned in the introductory

remarks, are as follows:

- the usage in MWh described in section A1.1 has been calculated by applying the IPCC emission factors in tCO_2eq/MWh suggested by the Covenant of Mayors Office (COMo), in ANNEX 1 - Fuel Emission Factors Database[8]. On this note, it is worth mentioning that the SECAP/EoI methodology instead refers to emission factors relating to the National Greenhouse Gas Inventory NIR;
- electricity usage was calculated using the national emission factor as at 2021, namely 0.285 tCO_2eq/MWh (source: CoM GHG Emission Factors for Electricity Consumption, 2024[9]).

Note that the SECAP/EoI methodology referred instead to emission factors related to the National Greenhouse Gas Inventory NIR.

In addition, as mentioned in the introduction, emissions associated with methane leaks from the gas distribution network in the City of Padova (CH4), those associated with wastewater treatment (CH4, N2O), and the contribution of the AFOLU sector (see calculation directions below) were added.

AFOLU SECTOR – CO_2 absorption contribution by the city's tree population

As part of the Green Spaces Plan[10], approved by the City Council with resolution no. 29/2022 dated 28/03/2022, an assessment was conducted to determine carbon dioxide emissions absorbed by the city's trees in public and private spaces. The characteristics of the tree population were estimated using iTree software based on the green space land register data. The services provided by the tree population (approximately 430,000 trees in the city's public and private spaces), in terms of offsetting greenhouse gases, reveal an annual sequestration of approximately 5,072 tonnes of carbon, which is the equivalent of approximately 18,625 tonnes of CO_2 removed from the atmosphere.

If we take the emissions contribution of agriculture (effluent, fertilizers, enteric fermentation) — which, in 2021, accounted for 7,091 tonnes of CO_2— and subtract the emissions absorbed annually by the city's trees (18,625 tonnes of CO_2), the resulting contribution for AFOLU is a "negative" 11,534 tonnes of CO_2.

8 https://data.jrc.ec.europa.eu/dataset/72fac2b2-aa63-4dc1-ade3-4e56b37e4b7c
9 https://data.jrc.ec.europa.eu/dataset/919df040-0252-4e4e-ad82-c054896e1641
10 https://www.padovanet.it/piano-del-verde-comunale/A3-BR/PDV-05_161-176_ServiziEcosistemici_A3-BR.pdf

6.2. Module A-2 Description of current policies and strategies

The aim of this section is to help identify the policies and strategies being implemented that are helping achieve climate neutrality by 2030. The assessment of current policies and strategies thus offers a starting point for exploring what might be the issues and areas on which efforts and investments need to be focused at an EU, national and local level.

The assessment will be of a purely descriptive nature, highlighting, for each initiative, the goals and progress of measures being implemented in various areas, such as spatial planning, energy, waste, transport, housing, urban green spaces and nature-based solutions.

Table A-2.1: Description of policies

This section covers the policies, plans, programmes and regulations that either directly or indirectly impact the climate neutrality goals. Below is an outline of the policies around which the green transition debate has hinged over the last few years. Many of these policies are currently being updated and revised.

Policies at a European level

European policies on the energy and environmental front are going through a period of profound change: in 2021, the European Commission reviewed Europe's net greenhouse gas emissions reduction targets to hit at least 55% by 2030 compared to 1990 levels. This, and other goals of a similar nature, are contained in the plans and initiatives presented below.

Green Deal
The European Green Deal is a package encompassing strategic initiatives that aims to set the European Union on the path to the green transition, the ultimate goal being to achieve climate neutrality by 2050. The Commission set out compiling the Deal in December 2019 and the European Council acknowledged it in its December meeting of the same year. The Plan puts the emphasis on cross-cutting measures, to encourage an EU-wide approach in which all strategic areas — namely climate, environment, energy, transport, industry, agriculture and sustainable finance — are tackled synergistically. Defining a strategy at a European level to achieve climate neutrality puts emissions reduction targets and the definition of a single CO2 emissions market in the centre of the debate. As part of the Green Deal package, the Commission has set out Next Generation EU — a funding tool to tackle the new challenges felt across Europe that have emerged following the COVID-19 pandemic — and REPowerEU as the key initiatives intended to support the Plan's goals.

Next Generation EU
NextGenerationEU is a temporary tool established in 2020 to deal with the socioeconomic fallout of the COVID-19 pandemic. It provides funding totalling 806.9 billion euros, with the aim of funding the economic recovery of EU Member States. Funding comes in the shape of grants and loans awarded to countries who have applied for funding for recovery and resilience plans covering the 2021-2027 period. The Plan is divided into six Missions, which make up the structural "thematic" areas of intervention.

- Digitalization, innovation, competitiveness, culture and tourism
- Green revolution and ecological transition
- Infrastructure for sustainable mobility

- Education and Research
- Inclusion and Cohesion
- Health

Many infrastructure interventions envisaged in the CCC and pivotal elements of Padova's climate neutrality strategy (including the tramways) have been financed with NextGeneration EU resources.

REPowerEU

In response to the difficulties and disruptions in the global energy market as a result of the Russian invasion of Ukraine, the European Commission, in May 2022, presented the REPowerEU plan, with the goal of reducing the EU's reliance on Russian fossil fuels, fast-forwarding the transition and building a more resilient energy system. The Plan is based on four key pillars:

- saving energy,
- producing clean energy,
- diversifying its energy supply,
- smart pooling of investments and reforms.

In terms of producing clean energy, the Union agreed to stricter legislation in March 2023 to boost its renewable energy capabilities, raising the EU's binding target for 2030 to 42.5%, with the ambition of reaching 45%, which would be almost double the percentage of current renewable energy in the EU.

In addition, the need to diversify the energy supply has led the EU to enter into agreements with third-party countries to pipe in gas, to invest in the joint procurement of liquefied natural gas (LNG), to enter into strategic partnerships with Namibia, Egypt and Kazakhstan to ensure a reliable and sustainable supply of renewable hydrogen, and to sign agreements with Egypt and Israel for the export of natural gas to the continent. The Plan has entailed substantial investments and reforms: the total amount comes in at almost 300 billion euros, around 75 billion of which are funded while around 225 billion euros are in the form of loans; this figure also includes around 10 billion euros to fill the missing links for gas and LNG and up to 2 billion euros for new LNG transport and storage infrastructure to end the current reliance on a single source of supply. The rest of the funding (95%) is earmarked for accelerating and boosting the transition to clean energy.

Fitfor55

The package — in addition to including the above-mentioned goal of reducing greenhouse gas emissions by 55% by 2030 — aims to reform the EU ETS, making it more ambitious. The European Union Emissions Trading System is a cap and trade scheme, capping emissions for high-energy industries and for the energy production sector, who can trade their emission allowances. It is the EU's main tool for addressing emissions reductions. The new provisions include extending the system to include shipping emissions; a faster reduction of emission allowances in the trading system and the phasing out of free allowances for certain sectors; implementation of the global Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA); and more money to go into the Modernization Fund and Innovation Fund. In addition, a new independent emission allowances trading scheme is created for buildings, road transport and fuels for other sectors, which are not currently included in the system The formal revision of the EU ETS was completed in April 2023.

Policies at the European level have reframed the issue of ecological transition and climate policies at the national and local levels: this is not only due to the funding provided but also through advocacy activities and citizen involvement.

Policies at a national level

In line with European directives, Italy has fallen into line with the Commission's goals, issuing numerous Plans around energy and the environment that tie in with the EU's. Below is a description of the main plans, based on their level of relevance and alignment with the goals already covered.

Integrated National Energy and Climate Plan- INECP

In January 2020, the text of the Plan was published, following the concerted efforts of the Italian Ministry For Economic Development, the Environment and Transport. This Plan implements the new rules contained in Italy's Climate decree, as well as the guidelines set out in the Green New Deal and already included in Italy's 2020 Budget Bill. The INECP sets national 2030 targets for energy efficiency, renewables and the reduction of CO2 emissions, as well as goals in terms of energy security, interconnections, a single energy market and competitiveness, sustainable mobility and development, outlining the measures for each that will be implemented to ensure the respective goals are reached. Italy is expected to issue legislative decrees over the course of 2020 and subsequent years for the implementation of the Plan in line with European directives. The proposal to update the Plan was submitted to the European Commission in July 2023 and is currently being examined.

Regions and local governments (including the City of Padova) also provided input in the drafting of the draft to make it consistent with the goals that, at the local level, cities and governments are pursuing.

National plan to keep gas use down

The promotion of environmentally aware and responsible behaviours to enable reliance on fossil fuels to be scaled back in the medium/long term is one of the cornerstone goals at a national level. To save gas and avoid depleting national reserves, partly in light of the approaching 2023-2024 season, the Plan — which was approved in October 2022 — is in line with the European Commission guidelines, recently set out in Regulation (EU) 2022/1369 dated 5 August 2022. The guiding document, drawn up by the Italian ministry for the environment and energy security (MASE), confirms the commitments in the Plan as an integral part of the pathway to decarbonization by 2030 to increase Italy's energy self-sufficiency.

Since the publication of the Ministerial Decree in October 2022, the City of Padova has launched an energy-saving awareness campaign aimed at both its employees and the entire citizenry.

National vehicle charging infrastructure plan

Italy's national plan implements European Directive 2014/94 and covers the production of EV charging infrastructure networks, as well as measures to salvage building stock with a view to developing said networks. It also sets the goal of ensuring the organic development of EV charging facilities across Italy, based on objective criteria that take into account the actual need in the different areas of the country. For the various actors involved in the sector's electrification, this plan is an ambitious vehicle charging infrastructure development programme, thus promoting and adopting sustainable mobility solutions. The plan was put into effect by Italian law 134/2012; it was last published on 30 June 2016 and is currently being updated by the relevant departments.

The Italian decree of 16 March 2023, which was gazetted on 22 May 2023, is an important step for Italy towards the completion of its national electric vehicle charging plan (PNiRE), namely Italy's national database of charging infrastructure (PUN). The national database of charging infrastructure (PUN)[11] is a public information system designed to allow the EV charging service's end users, as well as other stakeholders, to gain access to specific information. Essentially, it is a centralized register of charging points, which can be accessed by the public and other stakeholders, with the

11 https://www.piattaformaunicanazionale.it/

aim of making the market more transparent and encouraging both public and private initiatives in the electric mobility field.
Consistent with the guidelines of the plan, the City of Padova and stakeholders operating in the municipal area are investing significant resources in fleet electrification and respective infrastructure.

National Recovery and Resilience Plan– NRRP
In line with the goals outlined by the European Commission, the Italian NRRP is structured into six Missions + a seventh specifically referring to the REPowerEU plan. Two of the Missions are particularly significant for climate transition (Green revolution and ecological transition and Infrastructure for sustainable mobility), while the others, despite having different focuses, still cross-cut the climate theme (for example, Digitalization and Education and research). Approved in July 2021, the Plan is an integral part of Next Generation EU, the economic recovery project launched by the European Commission in 2021 to support the EU Member States. Overall, the Plan is worth a total of 194.4 billion euros. The measures originally planned supplement the goals set out in the European REPowerEU plan for the reduction of reliance on fossil fuels and the creation of skills aimed at mainstreaming renewable energy generation.
The City of Padova benefits from about 615 million distributed mainly among Missions 2 (Green Revolution and Ecological Transition), 4 (Territorial Cohesion and Inclusion) and 5 (Education and Research): see the Investment Plan in section B2 for more details.

National Energy Strategy- NES
The Plan represents the Italian government's ten-year strategy to anticipate and manage energy system change. It is the result of a complex and shared process that has involved not just public bodies operating in the energy field, but the actual electricity and gas grid operators as well. Once discussed among industry operators, the proposal was put up for public consultation for three months, with a high level of participation: over 250 submissions were received from a range of associations, businesses, public bodies, citizens and university exponents, for a total of 838 feedback points and opinions on different topics.
The targets the Plan has set out to achieve are as follows:

- Energy efficiency: reducing consumption from 118 to 108 Mtoe by 2030
- Increasing renewable energy consumption to 28% by 2030
- Phasing out the production of coal-generated electricity with an accelerated target of 2025
- Reducing reliance on foreign countries for energy from 76% in 2015 to 64% by 2030

The NES is a push to ramp up investments, driving the trend further with total additional investments amounting to 175 billion by 2030, which can be broken down as follows:

- 30 billion for gas and electricity networks and infrastructure;
- 35 billion for renewable energy;
- 110 billion for energy efficiency.

The strategy defined by the SEN is fully consistent with the objectives of policies and plans adopted by the municipal administration such as PAESC and PUMS.

National Climate Change Adaptation Plan- NCCAP
The purpose of the Plan is to minimize the vulnerability of natural, social and economic systems to the impacts of climate change and build their resilience. It is the implementation instrument for the National Climate Change Adaptation Strategy (NCCAS) approved by the Italian Ministry for the Environment (with decree no. 86 of 16 June 2015) for national planning to support institutions that will be called to develop the contents of the Plan at their respective level of government. The aim is to offer a guiding instrument for the planning and implementation of more effective adaptation actions across Italy, based on the criticalities that have come to light, and for the integration of

adaptation criteria into existing procedures and planning instruments. The Plan is currently under SEA (Strategic Environmental Assessment). In line with the National Plan, the City of Padova has adopted the "Guidelines for the Construction of the Climate Change Adaptation Plan" since 2016. The Adaptation Plan was integrated into the SECAP, which was approved by the City Council in June 2021.

Green Transition Plan

Italy's national Green Transition Plan (GTP) responds to the challenge that the European Union has set before the Member States with its Green Deal: deliver growth that safeguards health, sustainability and planetary wellbeing, through the implementation of a series of social, environmental, economic and political measures whose goals are climate neutrality, zero pollution, climate change adaptation, restoring biodiversity and ecosystems, transition to a circular economy, and bioeconomy.

Subject to regular updates, the Plan, in accord with the planning guidelines set out by the NRRP, seeks to fully achieve the goals by 2050, as largely set out in Italy's national Long-Term Strategy. More specifically, the themes outlined and covered in the Plan can be broken down into:

1. Decarbonization
2. Sustainable mobility
3. Improving air quality
4. Addressing land take and hydrogeological instability issues
5. Improving water resources and relevant infrastructure
6. Restoring and strengthening biodiversity
7. Protecting the sea
8. Promoting the circular economy, bioeconomy and sustainable farming.

CITE (the interministerial committee for green transition) approved the Plan in March 2022. In line with the goals of the GTP, the municipal administration has included the concept of ecological transition in all plans adopted in recent years (see the next section "Municipal-level policies").

Policies at a regional level

The main climate policies adopted by the Veneto Regional Council over the last few years are presented below.

Regional Energy Plan

The Regional Council passed a decree on 29/03/2022 (DGR no. 313) for work to start on drawing up the new Regional Energy Plan and for an update of energy sector policies and planning.

In line with the policy goals identified at a European level and with the national guidelines given by the INECP (Integrated National Energy and Climate Plan) and GTP (Green Transition Plan), the new Regional Energy Plan sets out new guidelines and planning coordination principles for the promotion of renewables and energy saving and determines the regional strategic decisions, policies and measures required to achieve the planned goals, based on an integrated energy and climate approach. Given the cross-cutting nature of the theme, the Veneto Regional Council is taking steps to shore up collaborative relationships with a wide range of entities, such as GSE (state-owned company promoting renewable energy), RSE (energy research body), ENEA (Italian national agency for new technologies, energy and sustainable economic development), and Terna (grid operator).

The Municipality of Padova also has an Energy Plan, which was included in the SECAP, approved in 2021, and an Energy Manager's Office, which is mandatory under Law 10/1991 for entities operating in the civil, tertiary and transportation sectors that had an energy consumption of more

than 1,000 tons of oil equivalent in the previous year (including the Municipality of Padova).

Veneto Region Regional Transport Plan- RTP

The RTP —approved by the Regional Council in July 2020 with resolution no. 75 — is a handbook for setting out a new mobility and logistics planning process to see the region into 2030, one designed to identify the region's needs, decide on and execute infrastructure measures based on technically and economically feasible projects, and promote technological innovations and transformations resulting from the decisions made. The regional transport policy comprises eight goals and eight strategies, relating to future projects and/or projects currently being assessed, and 37 actions relating to improved use of existing infrastructure.

The Plan's total projected costs are expected to be in the region of 21 million euros, 13 million of which are currently covered by regional, state and European funding, in addition to an injection of private capital. The city of Padova, as the crossroads of the main regional arteries, will benefit from major consolidation of the railway network through the modernization of the Brescia-Padova high-speed network.

Regional bicycle mobility plan- PRMC

The PRMC is a planning instrument that falls under the Regional Transport Plan. The Regional Council drew up the Plan in December 2020, in collaboration with the road network company Veneto Strade SpA. The backbones of the regional cycle path network and main routes to be produced will be determined through this Plan, along with the extension of existing routes, thus creating a network of coordinated and synergistic cycleways, not just to meet the relevant new statutory requirements — which call for the development of a specific planning instrument — but also to promote and develop cycling tourism in the Veneto region so as to coordinate with the numerous other initiatives already under way. The Bici Masterplan of the City of Padova represents an attempt at vertical integration with respect to the Regional Plan.

Coordinating spatial plan for the Veneto region- PTRC

The PTRC is a regional governing instrument that sets out goals and key principles to determine how land in the regional area is to be organized and shaped, as well as strategies and actions for the delivery of relevant outcomes. It is an instrument designed to support territorial governance in both general planning and sector-specific planning in environmental, economic and social fields; it analyses the strengths and weaknesses of each and highlights potential and opportunities for local entities and for territorial systems. The PTRC was approved on 30 June 2020 with Regional Council resolution no. 62. As for the Padova area, the Plan focuses on the strategy for the development and planning of the hill area of the Berici Mountains, the Euganean Hills and the plain area between Padova and Vicenza.

Regional Municipal and Special Waste Management Plan

An update to the Regional Municipal and Special Waste Management Plan was approved by Regional Council decree (DGR no. 988 dated 09/08/2022), setting the regional target of 84% source-separated waste by 2030. The Plan sets out scenarios for the generation and management of municipal waste for the full 2020-2030 ten-year period, incorporating innovative concepts introduced by new European and national guidelines for the coming decades, and associating actions with each goal for its delivery. The main new aspect to come out of these scenarios is the key role played in reducing the generation of municipal waste and implementing the product life cycle approach, encouraging the creation of reuse/recycling centres region-wide so as to intercept goods that can be reused, and make citizens aware of the opportunity to hand in goods that are still

intact and in working order so that they can then be reused, rather than throwing them out as waste. The main contents of the existing management plan have also been updated, including looking into existing treatment, disposal and recycling plants and consequently identifying locations that are not suitable for said plants, defining a reward system taking into account available resources, information campaigns and the dissemination of information addressing the public or specific categories of consumers. The Plan also encompasses the remediation of contaminated areas across the whole regional area. The objectives of the Plan have been adopted by the Padova Center Basin Consortium, of which the City of Padova is a member.

Regional Climate Change Adaptation Strategy

In 2021, the Regional Council embarked on a path to define climate change mitigation and adaptation strategies designed to positively shape sector-specific planning, regulatory and legislative activity and the Regional Council's own administrative activity.

With the Regional Economy and Finance Document for the 2022-24 three-year period — with specific reference to the 09.09.02 target — work was started on the preparation of the Regional Climate Change Adaptation Strategy (RCCAS) for the Veneto Region. Subsequently, the Regional Council passed a decree (DGR no. 771 dated 27 June 2023) to set up the Regional Coordinating Steering Group for Climate Change Adaptation to oversee work —initiated with another Regional Council decree (DGR no. 705 dated 14 June 2022) — on formulating the Regional Climate Change Adaptation Strategy.

The Regional Council elected to enlist the collaboration of the Veneto environmental protection agency (ARPAV) and the universities of Venice — Iuav and Ca' Foscari — to assess the risks, vulnerabilities and impacts resulting from climate change, to plan adaptation actions and to identify intervention priorities. ARPAV has also developed a platform for viewing and downloading future climate data.

The Veneto Regional Council adopted the preliminary Regional Climate Change Adaptation Strategy document with Regional Council resolution (DGR) no. 459 dated 02/05/2024. Before going before the Regional Council for final approval, the Strategy is being put up for public consultation. The City of Padova contributed to the definition of the Regional Strategy, participating in thematic tables and presenting its SECAP at the regional level as a good practice.

Policies at a local level

The main climate policies adopted by the local government over the last few years are presented below.

Sustainable Energy and Climate Action Plan

The Sustainable Energy and Climate Action Plan[12] was adopted by the City Council in June 2021. It comprises mitigation and adaptation strategies and actions with a 2030 target and was compiled as part of the Covenant of Mayors initiative, thus updating the previous existing SEAP, whose goals and actions proved obsolete at that point. With the new SECAP, the City Council aims to halve CO_2 emissions compared with the base year (2005). The SECAP is a strong measure towards achieving climate neutrality by 2030 as it highlights real-world actions to be rolled our, sorted by specific sectors/actions (the Plan includes 83 mitigation actions and 33 adaptation actions). It also contains the definition of the city's emissions baseline, which is the starting point for defining an actionable pathway to climate neutrality. The Plan's first Monitoring Report, relating to the year 2021, was approved in 2023.

12 SECAP link

Sustainable Urban Mobility Plan

The SUMP — Sustainable Urban Mobility Plan produced by the joint local government committee for the metropolitan area of Padova[13] (Co.Me.Pa.) — seeks to promote a shared vision of sustainable mobility policies at an intermunicipal level, to build a series of directions that clearly and efficiently engage the various local governments involved in defining and implementing the measures to be applied. The geographical range of Padova's SUMP extends beyond the administrative boundary of the municipal capital, Padova, dealing with the 18 local governments within Padova's intermunicipal area as defined in the Co.Me.Pa. agreement: this decision was dictated by the city's strong interdependence with its surrounding area and by its need to put together a wide-ranging plan that would engage the whole territory. The Plan was adopted by the City Council in January 2020. The first monitoring report on its current progress was completed in 2024.

Municipal Green Spaces Plan

To make urban green spaces planning more efficient, local governments across Italy have been invited to draw up a "Green spaces plan": a voluntary instrument — part of each government's wider city planning — that defines the city's "green profile", starting with its basic natural ecosystems, with planned measures to develop and enhance urban and peri-urban green spaces. This is a strategic instrument designed to steer local city planning transformation policies and the local government's resulting decisions on public green spaces, defining principles and setting guiding criteria for the creation of public green spaces. The Plan[14] was drawn up with the aid of a participatory process involving specific local stakeholders, such as trade associations, professional orders, business operators and environmental associations, as part of the Agenda 21 scheme.
The Plan was ultimately adopted on 28 March 2022 with resolution no. 2022/029.

Piano degli Interventi - PI (city planning intervention plan)

The Piano degli Interventi (PI) governs the municipal area's built form and urban development in general. Relevant parties can refer to the tool, via an interactive platform, to analyse intended land use, constraints and regulations to be applied to a specific area within the city boundary. The Plan is valid for 5 years, following approval by the City Council with resolution no. 6 dated 12/02/2023, putting it into effect on 10 March 2023. The PI also outlines city planning schemes for implementation (PUA).
As indicated in the Operational Technical Standards (Heading I, Section I, Art. 1), the "Padova 2030" PI, in line with the Mayoral document illustrated before the City Council on 1 March 2021, is divided into the following goals:
a) Environmentally responsible use of land and safety of land
b) Urban forestation and green and blue belts
c) Regeneration and urban quality
d) Public and polycentric city
e) Appeal of the old city centre and heritage across the city
f) Research, training, innovation, production
g) Sustainable mobility.
These goals are aimed at better protecting the quality of the area and its architectural heritage and at making better use of available resources through strategies for the redevelopment, improved utilization and renewal of the land and urban fabric.

13 https://www.padovanet.it/informazione/piano-urbano-della-mobilit%C3%A0-sostenibile-pums-di-padova
14 https://www.padovanet.it/informazione/piano-del-verde-comunale

Building Regulations - BR

The building regulations, throughout the whole municipal area, regulate each activity that results in a change in the urban and building makeup, and contains provisions for the protection of environmental and architectural values, for the visual appearance and the quality of urban development and building, and for citizens' health and safety. Padova's Building Regulations[15] were amended with City Council resolution no. 38/2024 and came into effect on 20 July 2024. The main new changes introduced by the Regulations concern:

- the introduction of guidelines to foster greater clarity and promote greater uniformity of practices by trade professionals;
- the option of installing PV solar panels both built into and mounted on top of roofs. For the old city centre, operational guidelines have been introduced to identify solutions that do not alter the building's architectural features;
- the introduction of more precise explanations and general supplementary guidelines designed to help make it easier to restore existing building stock, which includes encouraging the addition of new technologies without detriment to the buildings' features, including their appearance.

Economic and Financial Plan for municipal waste management

As of 2021, the new rules and regulations issued by the Italian energy and environmental regulation authority (ARERA) to determine the costs of the integrated municipal waste management service call for providers to have an economic and financial plan in place to cover the matters that fall under their remit. The body responsible for validating the documents within the city of Padova is the "Padova Centro" council for the Padova catchment area, which was established recently and has been fully operational since 2022. Within the municipal area, the integrated municipal waste management department has a contract with AcegasApsAmga SpA, which is also the company that manages commercial waste charges and user relations. The document covers the 2022/2025 three-year period relating to all services delivered by the company, from the kerbside collection of municipal waste to relevant transport and street cleaning.

Environmental and Sustainability Report

In December 2023, Padova Council approved the 14th edition of its Environmental and Sustainability Report: this is a voluntary sustainability policy governance and reporting instrument that provides decision-makers with essential information for shaping policy lines and making the best management decisions to assess the effects of the Body's planning endeavours and health of the city in terms of climate and sustainability actions and investments.

From the 2018 edition on, it has also reported on the city's contribution to meeting the so-called Sustainable Development Goals (SDGs) set out by the UN Agenda 2030. The Report is divided up into 13 areas: 8 environment-related areas, in addition to 5 more specific areas of a social and economic nature. In addition, there is a special section assessing the Body's direct impacts, which includes consumption, emissions and the Green Purchasing Plan.

Guidelines for the promotion and implementation of "PADOVA 2030" renewable and socially responsible energy communities

Padova Council approved its "Guidelines for the promotion and implementation of "PADOVA 2030" renewable and socially responsible energy communities" with Council resolution no. 2023/0087 dated 7 March 2023. This document identifies the possible roles that a local body can take on in

15 https://www.padovanet.it/informazione/regolamento-edilizio

promoting RECs (as a promotor of energy sharing, as a promotor of an REC, as a member of an existing REC, as an entity that makes its assets available). The document also defines the stages involved in setting up an REC (planning, programming, design, execution, running).
The guidelines are one of the first outcomes delivered through the "PADOVA 2030" REC Technical board, which was officially established in March 2023.

The following table summarizes the main policies discussed so far.

Institutional level	Policies	Objectives	Impact of municipality
EU	Green Deal	Independence from fossil fuels and promotion of renewables and energy efficiency	Medium-high
	Next Generation EU	Definition of 6 Sustainable Development Missions	High
	RePower EU	Source diversification and electrification	Medium-high
	Fit for 55	Reduction of emissions by at least 55%	High
NATIONAL	Integrated National Energy & Climate Plan	Definition of national energy efficiency targets to 2030	High
	National plan to keep the gas use down	Guidelines for reducing gas consumption	High
	National vehicle charging infrastructure plan	Guidelines for electrification of the transportation sector	High
	National recovery and resilience plan	Definition of the 6 Development Missions and their respective investments at the national level	High
	National Energy Strategy	Setting targets for energy efficiency, consumption and production from RES	High
	National Climate Change Adaptation Plan	Defining effective adaptation actions at the national level	Medium-high
	Green Transition Plan	Defining the macro goals needed at the national level to meet the challenge of ecological transition	Medium-high
REGIONAL	Regional Energy Plan	Regional energy sector planning	High
	Regional Transport Plan	Regional mobility and logistics planning to 2030	High
	Regional bicycle mobility plan	Defining synergies for the development of the regional bicycle network	High
	Regional Spatial Plan	Regional planning in spatial, economic and social spheres	Medium-high
	Regional municipal and special waste management plan	Regional target of 84 percent sorted waste	High
	Regional climate change adaptation strategy	Defining actions for adaptation and mitigation of the effects of climate change	Medium-high

The table below, Table A-2.1, gives the emissions contributions linked to policies and actions included in plans and programmes that have been approved in recent years by Padova Council as illustrated in Table A-2.1 "Description of policies". The data given in column (3) reveal that the **"Reduction in emissions through other existing Action Plans" comes to 168,017 tonnes of CO2**. This is the contribution quantified in the SECAP actions that have not yet been taken (or have been taken only partially) as at 2021 and planned for the period from 2021 to 2030. Some actions previously included in the SECAP have been fully extrapolated from the Plan and included among the actions in the Climate City Contract Portfolio. Indeed, there was a desire to give greater emphasis and reiterate the importance of some strategic actions that at the time of writing the Climate City Contract had not yet been initiated but had already been assumed during the drafting of the SECAP. This avoids the

problem of double-counting the emission cut as it shifts the expected benefit from column (3) “Emission reduction through other existing Action Plans” to column (5) “Emission reduction through CCC.”

Column (1) of the table shows the emissions of the base year illustrated earlier in Module A-1, amounting to a total of 1,283,174 tonnes of CO_2; while column (2) gives the forecast 2030 reduction target with the goal of climate neutrality (-80%), which is the equivalent of 1,026,540 tonnes of CO_2. Column (3), as just mentioned, summarizes the contributions resulting from actions already included in existing Plans. The gap shown in column (4) thus gives the additional emissions contribution (in addition to actions already planned in the SECAP) required to achieve climate neutrality. Column (5) gives the value of the emissions reduction as a result of climate neutrality portfolio actions covered in module B-2, including strategic actions. The sum of the portfolio actions (module B-2) and strategic actions proposed by the local government and entered in table B-2.3 is enough to completely fill the gap. Column (6) gives the value of residual emissions, calculated as the difference between the base year emissions and the 2030 reduction target of 80%. It is worth noting that in column (1), the negative contribution of the AFOLU sector — calculated in the baseline inventory (-11,534 tCO_2) — reduces the total base year emissions overall. Consequently, the sum of the reduction targets in column (2) and residual emissions in column (6) does not give the value indicated on the "Total" line. Issues in parentheses refer to compensatory actions.

Table A-2.1: Emissions gap

	(1) Baseline emissions	**(2) 2030 emissions reduction target**		**(3) Emissions reduction through other existing Action Plans**		**(4) Emissions gap**		**(5) Emissions reduction through the CCC**		**(6) Residual emissions**	
	Baseline emissions (2021): these refer to the inventory used to define the targets	The emissions reduction target for 2030 ideally reaches a minimum 80% compared to the baseline.		These are the emissions reductions that might be achieved through existing policies and plans, outlined in Section A-2.1. These actions are not part of the portfolio of actions in section B.		(4) = (2) – (3)		This column is used to present the already quantified emissions reduction associated with the portfolio of actions outlined in module B-2.		(6) = (1) – (2)	
	(absolute)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)
Buildings	938,957	751,166	*80.00 %*	88,985	*9.48 %*	662,181	*70.52 %*	673,846	*71,76 %*	187,791	*20.00 %*
Transport	303,530	242,824	*80.00 %*	63,094	*20.79 %*	179,730	*59.21 %*	172,489	*56,83 %*	60,706	*20.00 %*
Waste	52,221	41,777	*80.00 %*	14,650	*28.05 %*	27,127	*51.95 %*	9,167	*17,55 %*	10,444	*20.00 %*
IPPU	-	-	-	-	-	-	-	-	-	-	-
AFOLU	(-11,534)	-	-	(1,289)	-	-	-	(1,505)	-	-	-
Total	**1,283,174**	**1,026,540**	***80.00 %***	**168,017**	***13.09 %***	**858,522**	***66.91 %***	**857,006**	***66,79 %***	**256,635**	***20.00 %***

6.3. Module A-3 Systemic barriers and opportunities to 2030 climate neutrality

The aim of this module is to identify systemic barriers and opportunities that the city of Padova has tackled or will have to tackle on its path to climate neutrality. The analysis given here is a starting point for planning actions that tackle these barriers and are able to capitalize on opportunities geared towards climate neutrality.

A-3.1: Description of urban systems, systemic barriers, and opportunities

Barriers to climate neutrality

The climate neutrality challenge is inextricably linked to other issues entrenched in Padova, including air pollution (a problem we share with many other cities within the Padova district catchment area) and, more recently, the impacts of climate change (above all, drought, heatwaves, flooding and the spread of tropical and subtropical diseases). Many of the actions included in the Climate City Contract can be effective on a number of fronts (mitigation and adaptation). For example, replacing old boilers with new heat pump models integrated with PV systems can simultaneously reduce final energy use and pollutant emissions, while resulting in more comfortable and liveable interiors despite adverse weather and climate conditions.

Taking into consideration only criticality factors that can be associated with energy consumption, it is very clearly necessary to focus our efforts on end-use electrification (both in the mobility sector, and in the residential, commercial, institutional and industrial buildings sector). However, this conversion has to contend with **grid infrastructure limitations**, with **the need for significant funding and the opportunity to manage energy consumption and generation based on innovative** smart grid models. Furthermore, while heat pumps can be an important resource for reducing air pollution, these very units result in considerable criticalities in terms of heat loss to the external environment, exacerbating the heat island effect. Signing a **memorandum of understanding with the local electricity distributor (Enel Distribuzione)** is key to ensuring significant investments are made into the municipality, to adapt the existing grids to the city's changing needs.

On the mobility front, there is a very evident urgent need to reduce individual movements to limit congestion issues and accident rates on main roads. The mere electrification of the fleet on the road, while significantly reducing air and noise pollution, is not a solution to what are often critical traffic conditions, to the "misuse" of urban space — which could be otherwise converted to a public amenity space for socializing — or to the loss of permeable surfaces, which increases risks associated with extreme weather events. Nonetheless, the idea of curtailing people's "freedom" to move around is met with **strong resistance to change** amongst the city's residents and business operators. From this point of view, it will be important to implement **communication campaigns** to tell people about the change in progress and facilitate the transition to new forms of mobility, engaging citizens and businesses through reward schemes and inclusive information.

A barrier that cuts across all areas of the Climate City Contract is the **difficulty in engaging the various different municipal Departments and local stakeholders** with a view to making coordinated collective decisions. To overcome this critical barrier, the Municipality of Padova has formed the **in-house interdepartmental Task Force as well as the Living Lab** to get all actors and socioeconomic entities and manufacturers involved. These tools can be a real solution to the

governance of the climate neutrality process, but require significant human resources and strong political legitimation. Furthermore, participatory processes must be structured for longevity (we need to define spaces and places, we need to identify facilitators and coordinators for the different processes, etc.). Another cross-cutting barrier within the City is the **lack of specific technical expertise**, with it sometimes being complicated for local government personnel to keep up to date and engage in research. To overcome this barrier, the Municipality of Padova has signed a collaborative agreement with the University of Padova, which has the cross-cutting skills required to be able to support the Municipality in making the best decisions for the city's decarbonization.

Another obstacle in the way of actually meeting the Mission goals lies in the difficulty in **reaching citizens effectively and across the board**, given that citizens are increasingly a linchpin in terms of the adoption of good behaviours (at home, in workplaces, in waste management, etc.) and the investments they can make, possibly taking advantage of financial resources and tax benefits made available by local actors or higher-level bodies. Very often, citizens are on the receiving end of information that is contradictory, lacking in clarity and transparency, or constantly changing; this lowers their sensibility and attention threshold when it comes to sustainability issues: the aim of the local government is to build communication campaigns that are targeted in terms of both goals and audience, using a range of different channels.

City planning in the past has had little regard for working in balance with the natural ecosystem. In recent years, extreme weather (rainfall, drought, heatwaves) has intensified. According to the report from IPCC — the Intergovernmental Panel on Climate Change — as the climate crisis deepens, we will see such events strike with increasing frequency and ferocity: this is what makes planning with the aid of NBS so key. There are a number of commendable examples already being implemented, including the work on Padova's Piazza Savelli, funded by the Italian ministry for the environment and energy security (formerly known as MiTE). All interventions planned as part of the Climate City Contract must incorporate climate change-friendly design and be informed by DNSH principles. The difficulty in **restoring permeable urban surfaces and the lack of non-built space** in central areas is undoubtedly a hindrance to the introduction of green solutions in the city.

The climate neutrality plan also needs **significant public and private investments**. While, in recent years, the City of Padova has been successful in attracting capital for the execution of certain strategic works (tram lines, "Bicipolitana" cycling network, public lighting, public housing, etc.), additional investments are required. The absence of substantial resources may be an unsurmountable barrier to meeting the expected goals. In the process of drawing up the Climate City Contract, the Municipality of Padova has engaged with the most active financial service providers in the local context in the co-design of certain actions financed by them through a range of different instruments (subsidized loans and mortgages, etc.). We have managed to formalize Climate Agreements with some banks.
Many of the strategic actions described in table B-2 have been built to attract and steer investments from private actors, defining a guidance framework and clear quantitative targets for the implementation of decarbonization projects and deployment of technological solutions.

Within the **energy sector**, the main barriers consist in:

- high costs of initial capital required to carry out energy upgrading work on buildings,
- difficulty in assessing the risk associated with energy price fluctuation/volatility,
- potential difficulties faced by low-income families in accessing loans,
- adapting the electricity network to suit widespread energy generation by small plants, to meet the electricity demand for all final uses and different ways of using electricity than in the past,

- regulatory barriers to renovation work or the implementation of renewable energy in the old city centre (partially superseded with the amendments introduced by Padova's Building Regulations approved in June 2024), which could hinder the climate neutrality process.

The presence of a major industry player such as AcegasApsAmga among the Climate City Contract stakeholders guarantees the municipality the opportunity to forge strategic partnerships and synergies: the company represents the most important multi-utility in the Northeast area where it operates in environmental and water services, gas and electricity distribution, carries out energy upgrading projects and public lighting networks. The company can count on the experience of its parent company, Hera, a leader in the sector since 2002 throughout the country. In addition, the memorandum of understanding signed with ENEL Distribuzione will allow for an upgrade of the electricity grid to be able to meet the growing challenges of electrification of consumption and distributed generation. Finally, important agreements with trade associations in the construction industry and some financial operators guarantee continuous exchanges with the business world and the possibility of activating innovative projects to connect supply and demand.

When it comes to the **transport sector**, the main hurdles are:

- substantial investments to produce mobility infrastructure,
- difficulties in implementing intermodal fee systems (to encourage modal movements) and introducing new models for managing the range of mobility services,
- little flexibility in planning instruments to change the form and function of urban spaces (with the goal of creating a 15-minute city),
- slow pace of development of electric mobility infrastructure, with difficulties in managing the deployment of charge points in condominiums due to a lack of physical space and sometimes lengthy bureaucratical and decision-making processes,
- high costs of electric vehicles, especially for residents in low-income bands,
- cultural barriers that citizens face in giving up their private car as a travel option.

The development of local public transport is considered strategic by the city government, which is investing extensively in the sector to improve the appeal of Public Transport and provide the city with adequate infrastructure. Management of the same is in the hands of a public company, Busitalia, which is modernizing the fleet and focusing on electrification of the fleet. To ensure full intermodality, however, it will be necessary to involve all operators operating in Padova, including those in sharing mobility, and it will be necessary to involve and activate mobility management projects in public and private companies and schools.

In the **waste sector**, we have detected a number of barriers that Padova is committed to working on over the years of the Mission:

- data collection needs to be scaled up,
- target calculation methods need to be reviewed, taking into account not just the resident population, but the actual number of people living here,
- waste-to-energy needs to be scaled up for heating purposes,
- slow behavioural transformation, including cultural barriers and the need to adopt different approaches in different neighbourhoods of the city.

Waste management within the municipality is in the hands of AcegasApsAmga: the company is aiming to expand its waste sorting capacity through new collection centers and material valorization. The company's business model is based on the cardinal principle of the circular economy linked to the 5Rs or Reduce, Reuse, Recycle, Recover and Regenerate.

Stakeholder participation in the journey to climate neutrality

As already anticipated, many of the existing barriers can only be overcome through the full involvement of all stakeholders in the area and the citizenry. In Padova, there is a culture of participation and dialogue, introduced almost 20 years ago with the inception of the local Agenda 21 office within the Environment Department. Many plans and projects have been carried out with a participatory stage run by the Agenda 21 office, including the SECAP[16] and the Green Spaces Plan[17]. Getting stakeholders and the general public involved is one of the commitments of the Covenant of Mayors and, for the SECAP, it was determined that this approach should be adopted right from the start when working out the project proposals and subsequently maintained during the implementation of the actions and their monitoring over time. The participatory process, within the Agenda 21 space, uses well-established tools like workshops and roundtables.

The local government also called for the main local actors to be engaged in drawing up the Climate City Contract in a collaborative governance approach: this is why it launched the "Padova 2030"[18] participatory process that actively engages stakeholders in workshops and focus groups, in order to determine the main actions to be rolled out to reach climate neutrality.
The participatory process took place over the March-May 2023 period over six meetings structured around three thematic areas: (1) building stock upgrade and the generation of renewable energy, (2) sustainable mobility, (3) circular economy and waste management.
The actions and suggestions coming out of the participatory process were shared during the 2023 Forum on Energy and Sustainability organized by the Municipality of Padova and were subsequently incorporated into the Climate City Contract being drawn up.
Following the participatory process, bilateral meetings were set up with all participating stakeholders, as well as other parties who did not have the chance to attend the original meetings, to incorporate new input into the Plan or pave the way to defining and signing Climate Agreements.
The stakeholders involved included trade unions, NGOs and local associations, representatives from different sectors of the economy, from the academic/research and innovation community, professional orders, businesses, financial service providers, etc. The stakeholders involved are public or private organizations interested in or with the power to influence the energy transition. The stakeholders contributed with:

- feedback and input on barriers and opportunities to reach climate neutrality,
- information on measures managed and/or implemented by them as part of the SECAP,
- signing of Climate Agreements as part of the Climate City Contract.

In addition to technical stakeholders, various other categories of stakeholders identified during the participatory processes for engagement in the sharing of goals and identification of strategic projects to promote the city's resilience:

- **schools**, as young people of all ages can be actively involved both by including specific educational modules in their school curriculum and through specific sustainability education initiatives. Each year, the Municipality of Padova offers projects and workshops on climate change and land management, and has established numerous collaborations with the University of Padova,
- the community, as local action cannot be managed just by a group of organizations and associations, and instead requires the active involvement and contribution of citizens. As part of the Climate City Contract's participatory process, **neighbourhood consultation**[19]

16 https://www.padovanet.it/informazione/percorso-partecipato-di-agenda-21-il-paesc
17 https://www.padovanet.it/informazione/percorso-partecipato-di-agenda-21-sul-piano-del-verde
18 Link
19 Consultations are a tool developed by the local government to enable citizens to actively participate in the life

meetings have been run to gather input, suggestions and ideas from participants on how to encourage greater engagement of these bodies in supporting and assisting the neighbourhood entities (schools, parishes, retailers), citizens and families in achieving the climate neutrality goal,

- **citizens** targeted directly, who have been given the opportunity to present their ideas, proposals and actions (individually or through associations) to contribute to achieving climate neutrality, by filling out an online form[20].

The participatory process that has led to the drawing up and definition of the Climate City Contract does not end with the approval of the Plan; instead, it will remain an open, living document right through to 2030, through the regular organization of sessions for partners to share, exchange and collaborate, as part of the Agenda 21 and Padova Living Lab activities (for more details, see section C-1).

Table A-3.2 gives the list of stakeholders in the transition to climate neutrality. The list also includes both signatories of Climate Agreements and stakeholders involved in other activities that are complementary to the Climate City Contract work and hence relevant to the climate neutrality ambition, as well as participants in the participatory process who have not gone on to sign Agreements but have nonetheless actively contributed to identifying barriers and opportunities and to building the strategy. For each stakeholder, the table gives the level of influence — namely their ability to reduce the city's GHG emissions systemically to a lesser or greater degree (stakeholders operating over a number of sites or with systemic effects have greater influence) — as well as the level of interest, determined based on the level of involvement in the process.

and decisions concerning the individual neighbourhoods, in the management of the commons, and in the social and cultural life of the places in which they live and work.

20 Form to propose actions or ideas for climate neutrality

Table A-3.2: Stakeholder mapping			
System	**Stakeholders**	**Influence on emissions reduction**	**Interest level**
Technological/ Infrastructure	AcegasApsAmga	Very high	High: has signed a Climate Agreement.
	ARD Raccanello	Medium - Low	High: has signed a Climate Agreement.
	Birra Peroni SpA	Medium	High: has signed a Climate Agreement.
	Busitalia Veneto (public transport provider)	Very high	High: has signed a Climate Agreement.
	Enel Distribuzione (electricity distributor)	Very high	Medium-high: has signed a memorandum of understanding for the electricity grid's adaptation
	Fondazione OIC	Medium	High: has signed a Climate Agreement.
	Galileo Visionary District	Low	Medium-high: is a member of the Council of Innovation
	Interporto Padova SpA (intermodal logistics centre)	High	High: has signed a Climate Agreement.
	Italchimica srl	Medium	High: has signed a Climate Agreement.
	Lundbeck Italia SpA	Medium	High: has signed a Climate Agreement.
	Padova Hall	Medium	High: has signed a Climate Agreement.
	Paradigma	Medium-low	Medium-high: is a member of the Council of Innovation
	Poste Italiane SpA (Italian postal service)	High	High: has signed a Climate Agreement.
	Varisco srl	Medium	High: has signed a Climate Agreement.
	1173 srl	Low	High: has signed a Climate Agreement.
Research & Education	Fondazione Fenice (non-profit foundation)	Medium - Low	Medium-high: has participated in the carbon neutrality process Is a member of the Council of Innovation
	Galileo Visionary District	Medium - Low	Medium-high: is a member of the Council of Innovation
	Le Village by CA	Medium	Medium-high: is a member of the Council of Innovation
	Net Center	Low	High: has signed a Climate Agreement.
	University of Padova	Very high	Very high: has signed a Climate Agreement. Has signed a memorandum of understanding with Council for climate neutrality Is a member of the Council of Innovation Signatory of the REC Manifesto
	SMACT Competence Center	Medium	High: has signed a Climate Agreement. Is a member of the Council of Innovation

Table A-3.2: Stakeholder mapping			
System	**Stakeholders**	**Influence on emissions reduction**	**Interest level**
	R2M Solution	High	High: has signed a Climate Agreement.
	EURAC	High	High: has signed a Climate Agreement.
Organizational	ANACI Padova (national association of condominium and property managers - Padova branch)	High	High: has signed a Climate Agreement.
	ANCE Padova (national association of building contractors - Padova branch)	Medium	High: has signed a Climate Agreement.
	APPE Padova (association of commercial businesses for Padova district)	Medium	High: has signed a Climate Agreement.
	ASCOM Padova (traders association)	Medium	High: has signed a Climate Agreement. Signatory of the REC Manifesto
	CNA Padova (national federation of artisan businesses and SMEs - Padova branch)	Medium	High: has signed a Climate Agreement. Has signed a memorandum of understanding for the Smart City
	Coldiretti Padova (national farmers' federation - Padova branch)	Medium	Medium-high: has participated in the carbon neutrality process Signatory of the REC Manifesto
	Confagricoltura Padova (Italian farmers' confederation - Padova branch)	Medium	Medium: signatory of the REC Manifesto
	Confapi Padova (federation of small businesses - Padova branch)	Medium	High: has signed a Climate Agreement. Signatory of the REC Manifesto
	Confartigianato Imprese Padova (artisan business association - Padova branch)	Medium	High: has signed a Climate Agreement. Signatory of the REC Manifesto
	Confindustria Veneto Est	High	Very high: has signed a Climate Agreement. Is a member of the Council of Innovation Signatory of the REC Manifesto
	Infocamere (IT company for Italian Chambers of Commerce)	Medium	High: has signed a Climate Agreement.
	Ordine degli Architetti di Padova (institute of registered architects - Padova branch)	Medium	Medium: has participated in the carbon neutrality process
	Ordine degli Ingegneri di Padova (chartered engineers council - Padova branch)	Medium	Medium: has participated in the carbon neutrality process
	Ordine dei Periti Industriali della Provincia di Padova (institute of industrial engineering professionals - Padova district branch)	Medium	Medium: has participated in the carbon neutrality process

Table A-3.2: Stakeholder mapping			
System	**Stakeholders**	**Influence on emissions reduction**	**Interest level**
Institutional/ Regulatory	ARPA Veneto (Veneto regional environmental protection agency)	Medium - High	High: has signed a Climate Agreement.
	Padova Chamber of Commerce	High	Very high: has signed a Climate Agreement. Is a member of the Council of Innovation Signatory of the REC Manifesto
	Consorzio di Bacino Padova Centro (waste management consortium)	High	High: has signed a Climate Agreement.
	Province of Padova	High	High: has signed a Climate Agreement.
Financial	Banca Etica	High	High: has signed a Climate Agreement.
	BCC Veneta (bank)	High	High: has signed a Climate Agreement.
	Cherry Bank	High	High: has signed a Climate Agreement.
Institutional/ Political	Ministries	Very high	Medium: involved in the carbon neutrality process with the Italian network of Mission Cities
	Veneto Regional Council	High	Medium-high: has participated in the carbon neutrality process and established collaborations with the City Council
Social and behavioural	ACLI Padova (socially committed Christian association promoting worker rights)	Medium	High: has signed a Climate Agreement.
	ADL Cobas	Low	Medium: has participated in the carbon neutrality process
	Associazione dei Biologi del Veneto (association of biologists for the Veneto region)	Low	High: has signed a Climate Agreement.
	ASVESS (Veneto sustainable development association)	Medium - Low	High: signatory of the REC Manifesto
	CAI Padova (Italian Alpine club, Padova branch)	Low	Medium: has participated in the carbon neutrality process
	CISL (Italian confederation of workers' unions)	Low	Medium: has participated in the carbon neutrality process
	Neighbourhood consultations	Medium	Medium-high: have participated in the carbon neutrality process Have established processes for implementing measures
	CSV Padova e Rovigo (voluntary services centre - Padova and Rovigo branch)	Medium - High	High: has signed a Climate Agreement. Signatory of the REC Manifesto
	Padova Diocese	Medium	Medium-high: has participated in the carbon neutrality process. Signatory of the REC Manifesto
	Fondazione Teatro Stabile del Veneto	Low	High: has signed a Climate Agreement.

Table A-3.2: Stakeholder mapping			
System	**Stakeholders**	**Influence on emissions reduction**	**Interest level**
	(theatre management foundation)		
	Legambiente Padova	Medium	Medium: has participated in the carbon neutrality process
	LIPU Padova (society for the protection of birds - Padova branch)	Low	Medium: has participated in the carbon neutrality process
	Italia Nostra	Low	Medium: has participated in the carbon neutrality process
	Slow Food	Low	Medium: has participated in the carbon neutrality process
	SPI CGIL (union representing pensioners who are members of the Italian general confederation of labour)	Low	Medium: has participated in the carbon neutrality process

7 Part B – Pathways to Climate Neutrality by 2030

This section is the central part of the Action Plan document: it illustrates the initiatives, programmes, scenarios, objectives, strategies and respective impacts that local authorities, external stakeholders and the entire ecosystem operating in the area have planned to achieve the climate neutrality goals by 2030.

Module B-1 outlines scenarios for achieving climate neutrality and their impact pathways based on the Theory of Change. These scenarios aim to recount how the municipality intends to close the emission gap shown in Table A-2.2 in column (4). Each impact pathway is assessed with respect to the direct and indirect benefits it is able to generate in the short and long term.

Module B-2 shows the portfolio of actions collected from public and private stakeholders, foundations and bodies operating in the area, which describe the commitment of the various actors involved in the participatory process and signatories of Climate Agreements (Tables B-2.2a / B-2.2b / B-2.2c). A specific section is dedicated to the 13 strategic actions for achieving climate neutrality goals that the Municipality of Padova has identified in a perspective to 2030. These actions, which are complementary to those included in the portfolio, represent a fundamental building block to concretely orient administrative actions and those of the entire region towards the total reduction of net climate-changing gas emissions. Table B-2.3 describes residual emissions, specifying the contribution from CO2 absorption by the city's trees and shrubs.

7.1. Module B-1 Climate neutrality scenarios and impact pathways

This Module is based on the Theory of Change proposed by NZC. The development of the theory can be useful for local government to focus on how change is expected to occur and how different actions and actors are linked and collectively contribute to achieving the desired impact goals. In a medium- to long-term context such as the one in which this document is set, this tool can be seen as a valuable framework for monitoring the progress of planned initiatives, helping to maintain focus on the results achieved, not to mention the revision of the strategy and actions where necessary. At the same time, this approach is intended to assist the city in describing the transition taking place and the planning processes underlying the actions included in the Plan.

Table B-1.1 shows 26 impact pathways divided into five fields of action. The impact pathways describe the ways (projects, actions, programmes) through which the Municipality of Padova and all stakeholders involved in the pathway and signatories of Climate Agreements aim to achieve climate neutrality. **Direct impacts were calculated by summing the benefits from the portfolio of actions identified by stakeholders and listed in Tables B-2.2a / B-2.2b / B-2.2c with the additional benefits from the full implementation of the strategic actions identified by the municipal administration.**

B-1.1: Impact pathways					
Field of action	**Systemic lever**	**Short-term change (1-2 years)**	**Long-term change (3-4 years)**	**Direct impacts**	**Indirect impacts (co-benefits)**
Energy systems	Technology	Identification of strategic partnerships for the modernisation of the electricity grid	Further technological developments will lead to increased performance of the grid with benefits also at the local level	98,952 tCO_2eq	Reduced dependence on fossil fuels, increased widespread renewable energy production, reduced blackouts
	Democracy and participation	Activation of the first renewable energy communities	Further spread of networks of citizens aware of sustainability issues		Involvement and awareness-raising towards new sustainable practices, increased local synergies, increased renewables
	Finance	Creation of financial support models for the creation of private RECs	Replication of the financial model identified in other strategic and regional areas		Increased local competitiveness and ability to attract capital for renewables, job creation
	Learning and skills	Dissemination of good practices and knowledge of existing technologies and opportunities	Further development of knowledge and learning tools (e.g. Energy Help Desk for local residents)		Improvement of city liveability, involvement and awareness-raising of the public and businesses
	Governance & Policy	Improvement of municipal regulation consistent with national and European targets	Ambitious political and institutional support		Better penetration of renewables in the city centre
Stakeholders contributing to the impact pathways listed above: AcegasApsAmga, Enel Distribuzione, Interporto Padova, Raccanello, Fondazione OIC					
Mobility and transport	Technology	Electrification of local public transport (new tram networks)	Electrification of the public and private road fleet	172,489 tCO_2eq	Improvement of city liveability and services, improvement of air quality
	Democracy and participation	Identification of strategic partnerships for the development of alternative mobility	Increased shared mobility platforms and activating MaaS policies		Job creation, reduction of travel time, digitisation of services
	Finance	Availability of investments to ensure the development of urban infrastructure	Synergy with regional and national initiatives for the development of new infrastructure		Increased technological competitiveness and regional synergies
	Governance & Policy	Policies in favour of the electrification of the region	Definition of urban planning and building standards for e-mobility		Increased city infrastructure for conversion to electric mobility
	Social Innovation	Awareness-raising projects for participation and inclusion towards more sustainable mobility	Further cross-sectoral involvement of all spheres of civil society		Reduction of road congestion
Stakeholders contributing to the impact processes listed above: AcegasApsAmga, Busitalia, Arpav, University of Padova, APPE, Infocamere, Banca Patavina, Banca Etica, Cherry Bank, Padova Municipality					
Waste and the Circular Economy	Technology	Development of innovative solutions for waste collection and disposal	Further technological innovations will lead to an increase in the efficiency of disposal processes	9,167 tCO_2eq	Job creation, reduction of unsorted waste
	Finance	Financial availability at the European, national and local levels to develop innovative projects	Involvement of private financing and public-private partnerships		Increased local synergies, attracting capital
	Learning and skills	Continuation of municipal policies to train people to reuse and recycle	Co-design of innovative and technologically advanced projects among sectoral stakeholders		Increased local synergies, increased circular economy practices
	Governance & Policy	Identification of policy instruments to improve separate collection	Give full local implementation to the objectives set by regional laws		Improvement of the services provided and the well-being of people
	Social Innovation	Projects to raise awareness and involve the public	Further dissemination of climate neutrality targets for widespread involvement		Improvement of city liveability

B-1.1: Impact pathways					
Field of action	**Systemic lever**	**Short-term change (1-2 years)**	**Long-term change (3-4 years)**	**Direct impacts**	**Indirect impacts (co-benefits)**
Stakeholders contributing to the impact processes listed above: AcegasApsAmga, ACLI, APPE					
Green infrastructure and NBS solutions*	Technology	Application of new technologies in NBS	Further development of pilot projects at the local level with potential for scalability	1,505 tCO_2eq	Increased employment, reduced impacts from extreme climate events
	Democracy and participation	Identification of local strategic partnerships for the development of innovative solutions	Further strategic involvement for large-scale projects		Increased competitiveness and regional synergies
	Finance	Monitoring of results achieved to implement new solutions	Investments with a long time horizon		Attraction of capital for adaptation to climate change
	Governance & Policy	Alignment of local regulations with national and European objectives	Definition of sustainable standards for local development		Improved soil permeability and local adaptability
	Social Innovation	Participation of the public in NBS development projects	Cross-cutting support through discussion tables in identifying critical issues and developing efficient solutions		Improvement of city liveability, greater participation of residents in public life
Stakeholders contributing to the impact processes listed above: Municipality of Padova, Banca Patavina, Province of Padova, Cherry Bank					
Built Environment	Technology	Technological developments in building efficiency	Further technological developments will ensure buildings with continuously improving performance	574,893 tCO_2eq	Improved air quality, improved liveability of interior spaces, increased overall property value
	Democracy and participation	Increased participation in the redevelopment of private buildings	Constant involvement of the public and the sector in the ecological transition process of the entire segment		Increased participation spaces
	Finance	Definition of new economic-financial models for the redevelopment of ageing buildings and systems	Additional financial incentives to support the transition to a more efficient building model and full implementation and scalability of the new models identified		Increased technological competitiveness, job creation, attraction of new capital
	Learning and skills	Training for relevant sectors and the public	Continuous training will ensure continuous improvement of the private building sector		Involvement and awareness-raising towards new sustainable practices,
	Governance & Policy	Energy efficiency laws for buildings compliant with EU regulations	Definition of minimum standards for redevelopments and new buildings		Improved energy and environmental performance of the building stock, increased economic value of real estate
	Social Innovation	Definition of programmes to ensure the energy upgrading of public housing	Further inclusion programmes for particularly vulnerable individuals and groups		Reduced energy poverty, improved comfort for vulnerable people
Stakeholders contributing to the impact processes listed above: AcegasApsAmga, Italchimica, Lundbeck, Varisco, Municipality of Padova, University of Padova, APPE, Infocamere, Raccanello, Banca Patavina, Peroni, Banca Etica, Padova Hall, Cherry Bank, Net Center, Teatro Stabile, Fondazione OIC, Poste Italiane, ASCOM					

* The actions related to the “Green infrastructure and NBS solutions” section are intended as offsetting actions and as part of a strategy to manage the city's hard-to-abate residual emissions (see section B-2.3).

B-1.2: Description of impact pathways

The 26 impact pathways illustrated show a systemic intervention for each field of action, and represent a paradigm shift. In fact, it involves applying a holistic cross-sectoral approach.
That which is written with respect to **direct impacts** refers to the total emissions per field of action collected during the dialogue phase between the Municipality and the various CCC participants through the signing of a Climate Agreement, which will be set out in greater detail in Tables B-2.2a / B-2.2b / B-2.2c and in the section on strategic actions.
In total, the 26 impact pathways will allow for a **reduction of 857,006 tonnes of CO_2**, which, together with the objectives of the existing strategies (those planned and included in the SECAP, approved by the City Council in 2021) – equal to 168,017 tonnes of CO_2 – will allow the municipality to reduce its emissions by almost 80% compared to 2021 (base year).
The most relevant sectors in terms of direct impacts are the Built Environment and Mobility, which together account for 87% of the emission gap reduction targets.
The goal for the city's future will be to transform Padova not only from the perspective of technology and climate change mitigation and adaptation, but also from a regulatory, social and cultural point of view.

<u>“Built Environment” field of action</u>
A key theme of Padova's CCC concerns residential, commercial and institutional buildings and industry, which account for 76% of final energy usage in the city. Various measures are envisaged to drastically reduce climate-altering emissions, from the replacement of boilers and generators with electric heat pumps possibly powered by renewable sources, to the creation of a district heating network that can also make use of some thermal waste currently dissipated by the waste-to-energy plant, urban waste and local companies that have residual heat downstream of their production cycles.
In recent years, Padova has seen a rather high rate of building heritage redevelopment, with investments amounting to some 357 million euros mobilised thanks to the Superbonus 110 scheme (ENEA data updated to March 2023).
However, it is necessary to create the ideal conditions for the rate of redevelopment to remain high in the years to come. To achieve this goal, Padova Municipality, based on experience gained through its Energy Help Desk (Sportello Energia), aims to build a new One-Stop Shop: a public-private entity designed to bring together energy upgrade initiatives for residential, commercial, institutional and industrial buildings and to present private business operators (ESCOs) with investment package proposals, creating advantageous economies of scale and promoting Energy Efficiency Contracts.
Important urban regeneration projects have already been launched and financed by the NRRP (e.g. the Hub Arcella 2030 project – redevelopment of the San Carlo area), with a focus on all energy upgrades of the public social housing stock, which, involving families in relative poverty, can have important co-benefits, especially in relation to the growing problems associated with the phenomenon of heat waves in the summer. Attention to the most vulnerable will have to follow community-based rationales and risk-sharing among all actors in the value chain.
Finally, in the building sector, the Municipality is experimenting with innovative finance models (e.g. crowdfunding) in small pilot projects in the testing phase, applied to supermarkets and sports centres. Technological and building stock efficiency actions will be accompanied by information and communication actions for the benefit of the public and businesses. Moreover, a significant share of the electricity consumed is expected to be met with certified supplies from renewable sources.
67% of the Climate City Contract target in terms of emission reduction (574,893 tonnes of CO2) is linked to this group of measures in the area of civil and industrial buildings.

"Mobility and Transport" field of action.

The city transport sector, which accounts for 24% of final energy usage, is a key part of the decarbonization strategy. In order to reduce mobility-related emissions, action will be taken with a variety of integrated measures that will change the way people travel around the city. It is no coincidence, then, that 6 out of Padova's 13 Climate City Contract strategic actions concern transport.

Without a doubt the most important project is the city-wide tram network system - SMART, which will see the construction of two new lines and the connection with modal interchange systems on the outskirts of the city to help reduce the number of entries in the city. The new lines will add 23 km to the existing network, connecting all major city arteries and traffic hubs and moving up to 12,000 people per hour. It is estimated that thanks to the SMART project around 210 million kilometres travelled by endothermic vehicles can be avoided, with a considerable reduction in emissions in the area.

While very important, this project must necessarily be part of a broader strategy. The other measures aimed at improving mobility in Padova envisaged in the CCC are:

- the gradual replacement of diesel buses in local public transport with new electric vehicles powered by renewable sources,
- the promotion of cycling, through the full implementation of Padova's "Bicipolitana" and the widespread installation of bike racks and bike boxes, thanks to which the number of kilometres cycled annually is expected to increase by about 35%,
- the implementation of mobility management policies through local companies and schools equipped with mobility managers and the promotion of Mobility as a Service (MaaS) through the full technological and pricing integration of the various alternative mobility systems to the car, and the identification of specific forms of rewards,
- the creation of a Low Emission Zone (LEZ) and the introduction of an Ultra LEZ, to progressively limit the circulation of the most polluting vehicles,
- electrification of the private vehicle fleet, facilitated by incentives and the installation of charging points in cities.

The framework that thus emerges aims to change the way people travel around the city, on the one hand by guaranteeing citizens viable alternatives to the private car thanks to new infrastructures and services, and on the other by providing specific limitations to discourage particularly emissive and polluting means of travel. Technological and infrastructural actions will be accompanied by information and communication actions. Furthermore, it is expected that part of the new electricity consumption related to the transition of mobility towards the abandonment of internal combustion engines will be met with certified energy with a guarantee of origin from renewable sources.

20.1% of the Climate City Contract target in terms of emission reduction (172,489 tonnes of CO2) is linked to this group of measures in the area of sustainable mobility and transport.

"Energy Systems" field of action

The progressive installation of roof-mounted photovoltaic panels and the activation of Renewable Energy Communities should ensure an increase in the share of electricity needs met by locally produced renewables.

Legambiente's Renewable Municipalities study shows that in 2023 Padova was the city with the most photovoltaic installations per capita in Italy (around 15 MW installed in total). This extremely positive trend is expected to continue according to a linear trend, taking advantage of the available roof space on both civil and industrial buildings. The proliferation of the plants, with particular reference to the city centre, should be facilitated by easing legal and regulatory restrictions, protecting the landscape and the historical and cultural heritage of the City of Padova.

11.5% of the Climate City Contract target in terms of emission reduction (98,952 tonnes of CO2) is linked to this group of measures in the area of energy systems.

"Waste and Circular Economy" field of action

On the waste front, the CCC provides for a progressive improvement in source-separated waste collection in the city, significantly reducing the percentage of non-separated waste and the pro-capita production of dry waste. For the "Padova Centro" council for the Padova catchment area (of which Padova Municipality is a member), the 2030 target is the production of 115 kg/person of residual waste and the achievement of 80% separate waste collection. The strategy to achieve these objectives envisages the construction of new collection centres and pre-treatment plants for recycled waste, the definition of differentiated policies for waste collection in the city, taking into account the different urban and morphological characteristics of the spaces available for the optimal provision of the service and taking into consideration the issues associated with the application in the city centre, and the provision of a pay-as-you-throw rate capable of incentivising the gradual reduction of non-separated waste, to be implemented at the same time as a better control of waste delivery, including through the encouragement of reuse and recycling and all waste prevention policies.

Information campaigns to support and accompany the full implementation of the measure are also planned in this field of action.

The benefit from these measures can be estimated at 9,167 tonnes of CO2 or 1.1% of the Climate City Contract target.

"Green infrastructure and NBS solutions" field of action

The Municipality is also extending the city's green spaces (Iris Park, Guizza Park, San Benedetto Walls Park, etc.) and, in recent years, has adopted a policy of boosting the tree population with initiatives such as the 10,000 trees for Padova project. Through the provisions of the Green Spaces Plan, the Municipality intends to continue with the planting of new trees. The full achievement of the Plan's objectives will be conditional on the implementation of de-paving and de-impermeabilisation of some of the city's grounds, such as Piazza Savelli, a car park redevelopment project in the Soft City area, financed by the former Ministry for Ecological Transition. The de-paving strategy was also included in the Piano degli Interventi, approved by Padova Council in 2023 with resolution no. 6/2023, in which it was assumed that approximately 930,000 square metres would be unsealed and transformed into permeable areas.

The availability of new areas may also derive from the application of urban equalisation, aimed at improving urban, landscape, architectural, energy, hydraulic and environmental quality through the recognition of a building capacity to entities that, by way of example, provide for the implementation of public interest projects, including urban forestation. **The action of boosting the city's tree cover will allow for the absorption of 1,505 tonnes of CO2, or 0.2% of the Climate City Contract target.**

7.2. Module B-2 Action Portfolio for Climate Neutrality

Producing a plan like the CCC requires a huge collective effort across the city, in which everyone is engaged and plays an active role. Hence, the Municipality of Padova started by coordinating a participatory process in which over 30 local stakeholders discussed and identified the main barriers and opportunities to achieving climate neutrality, eventuating in the signing of actual Climate Agreements in which each signatory has taken responsibility for implementing specific actions that will contribute to the city's decarbonization. A range of actions have been put in place: mitigation and adaptation, education and training, communication, research and development and financial support actions. **To date, 36 Climate Agreements have been signed**, with a wide range of different entities: universities, research centres and competence centres, multi-utilities and Council subsidiaries, through to private companies and startups, trade associations, third sector organizations, foundations and banks. Signing up to the CCC will remain voluntary and open to all, based on a permanent Living Lab approach.

The following tables contain the main projects and initiatives identified during the drafting of the Action Plan. The level of detail presented follows what is available from the signatory stakeholders of the Climate City Contract: information not present will be subject to future monitoring. In order to protect stakeholders, this document focuses on the emission impact of the projects: investment values and financial coverage will be clearly stated in the Investment Plan.

All actions are implemented within the municipal boundary of the city of Padova.

A total of 146 actions were identified, broken down as follows:

- **Table B-2.2a** shows all **74 measurable actions** (i.e. non-behavioural or policy actions) whose project is in progress, has already been completed or approved, and for which there are clear indications in terms of planning and timing, broken down by sector: 48 actions belong to the **Buildings** sector, 11 actions refer to the **Transport** sector, 4 to the **AFOLU** sector (considered as offsetting actions as part of the city's residual emission management strategy), 2 to the **Waste** sector, 9 to the **Cross-Cutting** sector, which refers to actions touching on several areas such as the purchase of green energy or incentives provided to companies undertaking sustainable projects in line with ESG criteria;
- **Table B-2.2b** lists all the **actions under study**, i.e. those measurable projects for which the stakeholders do not yet have a detailed project and for which the timetable for implementation, the investment required and the characteristics of the intervention are not yet available, but for which a willingness to carry it out in the future has been expressed: these are **14 actions**;
- **Table B-2.2c** shows the **behavioural** actions of all partners involved, for a total of **58 actions** involving training, events and the raising of knowledge, awareness and public participation with respect to climate neutrality issues (actions already in progress or related to future projects).

The detail of the tables is structured by giving a brief description of the action (for a more detailed description see Annex 1), the proposing stakeholder, the direct impacts of the action in terms of CO_2eq reduction, the timing of the action's implementation and finally the systemic levers activated. The following tables also show the actions for which insufficient data was available to estimate CO_2eq emissions. Each action notes the “activated” systemic lever, i.e. the reference area that the action implements beyond the specific field of intervention: a maximum of three levers per action were selected to ensure readability of the table.

B-2.2a - Measurable actions - Building Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Upgrade of company facility on "Corso Stati Uniti"	AcegasApsAmga	678	2023-2027 | In progress	Technologies	Financing	-
Renovation of facilities in public and private buildings	AcegasApsAmga	800	2023-2024 | In progress	Technologies	Financing	-
Rationalizing and improving the efficiency of the water distribution and wastewater treatment system	AcegasApsAmga	187	2023-2024 | In progress	Technologies	Financing	-
Memorandum of understanding	Enel Distribuzione (electricity distributor)	-	2023-2026 | In progress	Technologies	Governance and Policy	Financing
Solar PV plant electricity generation and storage	Interporto Padova	222	2023-2025 | In progress	Technologies	Governance and Policy	Financing
Replacement of plastic moulding machine inventory	Italchimica SRL	42	2024 | In progress	Technologies	Financing	-
Improving compressor efficiency	Lundbeck	31	2025	Technologies	Financing	-
New -20° chiller	Lundbeck	63	2026-2027	Technologies	Financing	-
Distributed heating of 250° heat transfer oil	Lundbeck	29	2027	Technologies	-	-
Compressor heat recovery	Lundbeck	6	2027	Technologies	-	-
Relamping of facility	Lundbeck	9	2026	Technologies	-	-
HVAC department R05 revamp	Lundbeck	6	2027	Technologies	Financing	-
Group to sign up to Science-Based Target	Varisco SRL	213	2023-2030 | In progress	Governance and Policy	Financing	Knowledge Growth
"RES Padova" project	Padova Municipality	-	2024-2026 | In progress	Governance and Policy	Social Innovation	Democracy and Participation
Heating system upgrades	Padova Municipality	155	2022-2023 | Concluded	Financing	-	-
Improving the energy efficiency of sports facilities	Padova Municipality	456	2022-2025 | In progress	Financing	-	-
Improving the energy efficiency of Service centres - post houses	Padova Municipality	-	2023 | Concluded	Financing	-	-
Energy efficiency improvement and refurbishment of public housing	Padova Municipality	495	2022-2026 | In progress	Financing	Governance and Policy	-
Upgrade of Teatro Maddalene theatre	Padova Municipality	17	2023-2024 | In progress	Financing	Governance and Policy	-
Improving the energy efficiency of A.Briosco school building	Padova Municipality	32	2023 | Concluded	Financing	Governance and Policy	-
Combined heat and power and district heating within the municipal area	Padova Municipality	58,237	2025-2030	-	-	-
Support with setting up energy communities within the municipal area	Padova Municipality	989	2024-2030 | In progress	-	-	-
Door and window replacement	University of Padova	57	2022-2030 | In progress	Financing	-	-
Thermally insulating roofs	University of Padova	29	2022-2030 | In progress	Financing	-	-

B-2.2a - Measurable actions - Building Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Replacing light fixtures	University of Padova	40	2021-2030 | In progress	Financing	-	-
Replacing UPS units	University of Padova	57	2021-2030 | In progress	Financing	Technologies	-
Optimizing lecture hall HVAC	University of Padova	40	2022-2030 | In progress	Financing	Technologies	-
Optimizing data centres	University of Padova	57	2024-2030 | In progress	Financing	Technologies	-
Additional upgrade of cooling systems	University of Padova	356	2022-2027 | In progress	Technologies	-	-
Additional upgrade of heating systems	University of Padova	762	2022-2027 | In progress	Technologies	-	-
Replacement of doors and windows and fan coil units	Infocamere	57	2024 | In progress	Technologies	-	-
Replacement of precision cooling systems	Infocamere	80	2024-2026 | In progress	Technologies	-	-
Financial products for renovation of building stock	Banca Patavina	-	2024-2026 | In progress	Governance and Policy	Financing	-
Financial loan products for installing photovoltaic systems	Banca Patavina	-	2024-2026 | In progress	Governance and Policy	Financing	-
New air supply for tower silo—powder feeding	Peroni	20	2024 | In progress	Financing	Technologies	-
Steam generator dynamic setpoint	Peroni	305	2023-2030 | In progress	Financing	Technologies	-
Photovoltaic system on premises	Banca Etica	17	2025	Financing	Technologies	-
Decarbonization of Corso Stati Uniti buildings	Padova Hall	176	2024-2025 | In progress	Technologies	Financing	-
Decarbonization of business centre	Padova Hall	20	2024 | In progress	Technologies	Financing	-
New headquarters	Cherry Bank	-	2023-2025 | In progress	Financing	Technologies	-
Residential REC	Net Center	258	2023-2024 | In progress	Social Innovation	Democracy and Participation	Governance and Policy
Stage equipment technical upgrade	Teatro Stabile Veneto	1	2025-2027	Technologies	Financing	-
Energy efficiency improvement work on S.Chiara residence	Fondazione OIC	63	2024-2025 | In progress	Financing	-	-
PV solar systems on rooftops and car parks	Fondazione OIC	376	2025-2030	Financing	-	-
Low-enthalpy ground-source systems	Fondazione OIC	1,370	2025-2030	Financing	Technologies	Governance and Policy
"Carbon Neutral Padova" sorting centre	Poste Italiane	808	2022-2024 | In progress	Technologies	Financing	-
Smart Building - Environmental monitoring	Poste Italiane	12	2022-2023 | Concluded	Technologies	Financing	-
Internally governed REC	ASCOM	-	2025-2030	Technologies	-	-

The total of the actions for the Buildings sector results in a total baseline reduction value of **67,628 tCO_2eq per year**. The actions contribute to the objectives presented in Table B-1.1 on the impact pathways of the “Built Environment” and “Energy Systems” fields of action.

B-2.2a - Measurable actions - Transport Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Bus fleet overhaul	Busitalia Veneto Spa	640	2024-2030 | In progress	Financing	Governance and Policy	Technologies
Bike to work	ARPAV	6	2024-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
LPT one-year passes	ARPAV	11	2024-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Bike parking	ARPAV	-	2024-2030 | In progress	Financing	-	-
Creation of "Bicipolitana" cycling network	Padova Municipality	4,623	2023-2026 | In progress	Financing	Governance and Policy	Social Innovation
"Padova SMART" - Padova's city-wide tram network system	Padova Municipality	44,154	2023-2026 | In progress	Financing	Governance and Policy	-
EV charging stations	Infocamere	5	2024-2030 | In progress	Technologies	-	-
Electrification of private transportation	Banca Patavina	-	2024-2026 | In progress	Technologies	Governance and Policy	-
Electric vehicle loans	Banca Patavina	-	2024-2026 | In progress	Governance and Policy	Financing	-
Smart working agreement and other measures to incentivize sustainable mobility	Banca Etica	145	2024-2030 | In progress	Social Innovation	Democracy and Participation	Governance and Policy
Electrification of company vehicle fleet	Cherry Bank	-	2023-2027 | In progress	Financing	Governance and Policy	-

The total of the actions for the Transport sector results in a total baseline reduction value of **49,584 tCO_2eq per year**. The actions contribute to the objectives presented in Table B-1.1 on the impact pathways of the “Mobility and Transport” field of action.

B-2.2a - Measurable actions - AFOLU Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Mura San Benedetto park green space upgrade	Padova Municipality	-	2023-2026 | In progress	Financing	Governance and Policy	Democracy and Participation
Financial loan products for forestation	Banca Patavina	-	2024-2026 | In progress	Governance and Policy	Financing	-
Tree planting	Cherry Bank	4	2023-2025 | In progress	Social Innovation	-	-
"Un parco in ogni comune" project for a park in every municipality	Province of Padova	0	2024-2025 | In progress	Governance and Policy	Social Innovation	-

The total of the actions for the AFOLU sector results in a total baseline reduction value of **4 tCO_2eq per year**. The actions contribute to the objectives presented in Table B-1.1 on the impact pathways of the “Green Infrastructure and NBS” field of action. These actions are to be considered as offsetting and are part of the hard-to-abate emission abatement strategy (see section B-2.3).

B-2.2a - Measurable actions - Waste Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Material recycling and recovery	AcegasApsAmga	96	2024-2027	Technologies	Knowledge Growth	Democracy and Participation
"Retesolida" — Food rescue and redistribution project	ACLI	530	2021-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth

The total of the actions for the Waste sector results in a total baseline reduction value of **626 tCO_2eq per year**. The actions contribute to the objectives presented in Table B-1.1 on the impact pathways of the “Waste and Circular Economy” field of action.

B-2.2a - Measurable actions - Cross-Cutting Sector						
Action	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Purchasing green power	Italchimica SRL	570	2024-2030 | In progress	Governance and Policy	Financing	-
Biology department upgrade - new Reverse Osmosis	Lundbeck	148	2026	Technologies	Financing	-
Development of private public partnership proposals	University of Padova	-	2024-2030 | In progress	Financing	Technologies	Democracy and Participation
Purchasing certified green power	Raccanello	579	2021-2030 | In progress	Financing	Governance and Policy	-
Financial loan products designed for businesses	Banca Patavina	-	2024-2027 | In progress	Governance and Policy	Financing	-
Purchasing certified green power	Banca Etica	130	2024-2030 | In progress	Social Innovation	Financing	-
Financial business support for ESG	Cherry Bank	-	2023-2030 | In progress	Financing	Social Innovation	Knowledge Growth
SME loan	Cherry Bank	-	2024-2030 | In progress	Social Innovation	Knowledge Growth	Financing
AI-driven building management digitalization	1117 SRL	-	2024-2026 | In progress	Technologies	Financing	Governance and Policy

The total of the actions for the Cross-Cutting sector results in a total baseline reduction value of **1,427 tCO_2eq per year**. These actions fall within the cross-cutting impact pathways through the Finance and Technology systemic levers: within the ecological transition there are also digitalisation pathways and the development of technologies aimed at reducing consumption that affect both the public sector and small and medium-sized enterprises (SMEs), which are quite numerous in the Triveneto and the city of Padova.

Table B-2.2b below lists the 15 actions under study, specifying the relevant sector in the first column. The CO2 calculation method, as well as the other information reported, was taken from the Climate Agreements submitted by the individual stakeholders.

B-2.2b – Actions being explored							
Sector	**Action**	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Buildings	Solar PV electricity generation on landfill	AcegasApsAmga	10,032	2025-2030	Technologies	Financing	-
Buildings	Solar PV electricity generation	AcegasApsAmga	292	2026-2028	Technologies	Financing	-
Waste	Smart bins	AcegasApsAmga	-	2024-2027	Technologies	Democracy and Participation	Social Innovation
Transport	Electric waste collection fleet	AcegasApsAmga	206	2025-2028	Governance and Policy	Technologies	-
Transport	Vehicle charging stations and systems	AcegasApsAmga	-	2025-2027	Governance and Policy	Technologies	-
Transport	Total overhaul of bus fleet	Busitalia Veneto Spa	-	2026-2030	Financing	Governance and Policy	Technologies
Buildings	LED lighting replacement	Infocamere	21	2025-2030	Technologies	-	-
Buildings	Installation of photovoltaic system	Raccanello	27	2028	Technologies	Financing	-
Buildings	Installation of heating and cooling system	Raccanello	75	2027	Technologies	Financing	-
Cross-cutting	Formation of REC	Chamber of Commerce	-	2027-2030	Governance and Policy	Democracy and Participation	-
Buildings	Heat recovery from ZIP industrial area	Peroni	650	2025-2030	Financing	Technologies	-
Cross-cutting	"Stageo" project	Teatro Stabile del Veneto	-	2024	Technologies	Social Innovation	-
Buildings	Establishment of REC	Fondazione OIC	-	2025-2030	Financing	Social Innovation	Governance and Policy
Waste	"Retesolida" project - next step	ACLI	500	2024-2030	Democracy and Participation	Social Innovation	Knowledge Growth

The total contribution of these actions being explored is **11,803 tCO_2eq per year**.

Finally, the following table shows all the descriptions of the 68 actions classified as behavioural.

B-2.2c – Measurable behavioural actions							
Sector	**Action**	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Cross-cutting	Raising awareness around saving energy	ANCE	-	2022-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	"UNIZeb" project	ANCE	-	2015-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	DHICube	ANCE	-	2022-2025 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	Decarbonization of the construction industry	ANCE	-	2023-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	"Il portale del cantiere" construction site portal Check — Free software	ANCE	-	2023-2030 | In progress	Technologies	Social Innovation	Knowledge Growth
Cross-cutting	Circular economy - Waste recovery and recycling	ANCE	-	2023-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	Renewable Energy Communities	ANCE	-	2023-2030 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	Education on environmental sustainability	Associazione Biologi Veneto	-	2023-2025 | In progress	Democracy and Participation	Social Innovation	Knowledge Growth
Cross-cutting	Promotion of a diagnostic service to check the energy efficiency of industrial facilities	Confindustria	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Communication campaign	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Environmental sustainability kit	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Co-design with TSOs	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Crowdfunding campaigns	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Workshops in schools	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Courses on voluntary work and social bonds	CSV	-	2024-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Universal community service projects	CSV	-	2024-2030 - In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Training on safe and sustainable building	CNA	-	2024-2030 - In progress	Knowledge Growth	Democracy and Participation	Social Innovation

B-2.2c – Measurable behavioural actions							
Sector	**Action**	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Cross-cutting	Training on residential, commercial and institutional building	CNA	-	2024-2030 - In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Cross-cutting	Education for businesses and enterprises	CNA	-	2024-2026 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation
Transport	"DISCO" project	Padova Municipality	-	2023-2026 | In progress	Governance and Policy	Social Innovation	-
Cross-cutting	"PadovaXChange" project	Padova Municipality	-	2024 | In progress	Technologies	Social Innovation	Financing
Transport	Intelligent Transport Systems: multimodal ticketing and info-mobility	Padova Municipality	-	2024-2027 | In progress	Governance and Policy	Social Innovation	Democracy and Participation
Cross-cutting	"My Data" project 2.0. Veneto Data Platform.	Padova Municipality	-	2024-2026 | In progress	Financing	Governance and Policy	-
Cross-cutting	Public services for citizens	Padova Municipality	-	2024-2026 | In progress	Financing	Governance and Policy	-
Cross-cutting	"My City" project 2.0. Integrated government IT system for delivery of interoperable services.	Padova Municipality	-	2024-2026 | In progress	Financing	Governance and Policy	-
Cross-cutting	"Padova 2030" communication campaign	Padova Municipality	-	2023-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation
Cross-cutting	Energy + Sustainability Forum	Padova Municipality	-	2022-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation
Cross-cutting	Getting the sustainability message across: "UniPadova sostenibile" project (update with respect to SECAP)	University of Padova	-	2021-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation
Transport	Public transport pass refund for home-work commute (updated from the SECAP)	University of Padova	-	2021-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation
Transport	Smart working for a better home/work life balance (updated from the SECAP)	University of Padova	-	2020-2030 | In progress	Governance and Policy	Democracy and Participation	-
Transport	Remote working for a better home/work life balance (updated from the SECAP)	University of Padova	-	2023-2030 | In progress	Governance and Policy	Democracy and Participation	-
Cross-cutting	ISO 20121 event certification	University of Padova	-	2023-2030 | In progress	Knowledge Growth	Democracy and Participation	Social Innovation

B-2.2c – Measurable behavioural actions							
Sector	**Action**	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Cross-cutting	Communicating good practices	APPE	-	2024-2030 | In progress	Social Innovation	Knowledge Growth	Democracy and Participation
Cross-cutting	Padova ESG driving responsible and sustainable industry	Confapi	-	2024-2027 | In progress	Knowledge Growth	Social Innovation	-
Cross-cutting	Training for municipal allotment holders	Banca Patavina	-	2025-2030 | In progress	Governance and Policy	Financing	-
Cross-cutting	Training designed for businesses	Banca Patavina	-	2024-2027 | In progress	Governance and Policy	Financing	-
Cross-cutting	REC promotion	Banca Patavina	-	2025-2030	Governance and Policy	Financing	-
Cross-cutting	European project for training in the residential, commercial and institutional building domain	Chamber of Commerce	-	2023-2026 | In progress	Knowledge Growth	Social Innovation	-
Cross-cutting	Training on food policies	Chamber of Commerce	-	2023-2026 | In progress	Knowledge Growth	Social Innovation	-
Cross-cutting	Cradle-ALP	Chamber of Commerce	-	2022-2025 | In progress	Knowledge Growth	Social Innovation	-
Cross-cutting	"Green Routine" project	Confartigianato	5	2023-2024 | In progress	Social Innovation	Democracy and Participation	Knowledge Growth
Cross-cutting	Smart working	Confartigianato	1	2023-2024 | In progress	Social Innovation	Democracy and Participation	Knowledge Growth
Cross-cutting	Raising awareness among businesses around opportunities to improve energy efficiency	SMACT	-	2024-2030 | In progress	Social Innovation	Democracy and Participation	Knowledge Growth
Cross-cutting	Reducing environmental impact of events and offsetting unavoidable emissions	Banca Etica	266	2024 | In progress	Social Innovation	Knowledge Growth	-
Cross-cutting	Training and education on residential, commercial and institutional building	ANACI Padova	-	2024-2030 | In progress	Knowledge Growth	Social Innovation	Governance and Policy
Cross-cutting	Business Help Desk	ASCOM	-	2024-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation
Cross-cutting	Eurac Climate Neutral Padova	EURAC	-	2024-2030 | In progress	Knowledge Growth	Social Innovation	Democracy and Participation

The total contribution of these behavioural actions is **271 tCO_2eq per year**.

Table B-2.2c – Behavioural actions being explored							
Sector	**Action**	**Stakeholders**	**Direct impacts (reduced emissions) tCO_2eq per year**	**Timing**	**Systemic Levers**		
Cross-cutting	Promotion of Renewable Energy Communities	CSV	-	2024-2030	Technologies	Democracy and Participation	Social Innovation
Cross-cutting	Energy community in Padova's industrial area	Italchimica SRL	-	2025-2028	Social Innovation	Democracy and Participation	Knowledge Growth
Cross-cutting	Electric charging for commercial businesses	APPE	-	2025-2030	Technologies	Governance and Policy	-
Buildings	Energy upgrade of commercial businesses	APPE	-	2025-2030	Technologies	Governance and Policy	-
Transport	Replacing vehicles belonging to commercial businesses	APPE	-	2025-2030	Technologies	Governance and Policy	-
Buildings	HVAC systems in commercial premises	APPE	-	2025-2030	Technologies	Governance and Policy	-
Waste	Circular economy for commercial businesses	APPE	-	2025-2030	Governance and Policy	Social Innovation	Knowledge Growth
Buildings	Formation of RECs	Banca Etica	-	2025	Financing	Technologies	Social Innovation
Cross-cutting	Theatre Green Book	Teatro Stabile del Veneto	-	2025-2030	Social Innovation	Knowledge Growth	Democracy and Participation
Cross-cutting	Innovative training	1117 SRL	2,000	2025-2028	Social Innovation	Democracy and Participation	Knowledge Growth
Cross-cutting	Sustainable condominium resolutions	ANACI Padova	-	2025-2030	Knowledge Growth	Social Innovation	Democracy and Participation

The total contribution of these behavioural actions being explored is **2,000 tCO_2eq per year**.

Overall, the CO_2 reduction from **actions in the stakeholders' portfolio** (excluding planting actions that are part of the hard-to-abate emission abatement strategy - see section B-2.3) is **133,343 tCO_2eq per year**.

The following table outlines the **13 strategic actions** that the Municipality has developed in consultation with local stakeholders who are signatories to the Climate Agreements, which are to be considered as a supplement to the portfolio measures for achieving climate neutrality by 2030.

The **strategic actions include**:

- **some measures in the process of full implementation** (new tram lines, purchase of new electric buses for local public transport, construction of new cycle paths, gradual electrification of the vehicle fleet, replacement of heat generators with heat pumps, purchase of certified green energy),
- **other measures envisaged in municipal planning instruments and being implemented on an experimental basis or through pilot projects** (activation of the One Stop Shop in Padova, promotion of Renewable and Solidarity Energy Communities, promotion of mobility management and MaaS),
- **others still at the preliminary study stage that will be implemented following a full technical-economic assessment and zoning of the project areas** (new district heating networks, activation of a Low Emission Zone).

The full implementation of all 13 strategic actions and measures included in the Climate Agreements signed with local stakeholders focusing on the efficiency of structures, plants and processes, the promotion of sustainable forms of mobility that are alternative or complementary to the private car, the production of energy from renewable sources, and the purchase of the remainder through supply contracts with a guarantee of origin, will allow the full and balanced achievement of climate neutrality.

Focus: strategic actions to achieve climate neutrality

The analysis of the municipal emission picture (Module A-1 climate-altering emissions inventory) shows that all sectors play an important role in contributing to the emission of climate-altering gases into the atmosphere. Therefore, a plan that aspires to reduce the carbon footprint must include a number of measures and must focus on actions in all sectors under examination, from civil tertiary and residential to industry, transport and waste. Each action is detailed with a timetable of the activities to be carried out, and is based on analyses or results already achieved in previous studies or area development projects. The quantification of costs and potential sources of financing is detailed in the Investment Plan.

1. **Energy redevelopment of civil and industrial buildings**

In addition to the specific measures already included in the portfolio (Tables B-2.2), this strategic action intends to provide for further developments through the activation of the One Stop Shop in Padova. The redevelopment of the private building stock is not easily controllable by a public administration. The only tool a municipality has is the possibility of establishing minimum energy performance requirements for new buildings, or, in the case of major renovations, through Building Regulations.[21] However, the technological maturity of the solutions adopted and the European and national regulations would be sufficient to guarantee the achievement of significant results in the aforementioned areas. However, the majority of the existing building stock has not been upgraded due to barriers that are frequently of a non-technological nature (regulatory limitations in historical areas, difficulties in reaching consensus in condominium meetings, lack of awareness and

21 https://www.padovanet.it/informazione/regolamento-edilizio

information on existing technological and tax opportunities).
In the PadovaFIT Expanded European project[22] the Municipality of Padova experimented with the activation of an Energy Help Desk[23] to create a link between demand and supply of building renovation in the civil and industrial sectors, ensuring an acceleration in the rate of refurbishment. Following the first test phase, with 100% public management, an assessment was made of the possibility of setting up a new public-private entity (to be defined based on a feasibility study to be completed in 2024) capable of aggregating energy redevelopment projects in civil (residential and tertiary) and industrial buildings and of proposing investment packages to private economic operators (ESCo), creating advantageous economies of scale. Through these operations of aggregation and contracting by lots, it is possible to guarantee the achievement of specific performance levels through the signing of energy performance contracts, grouping together projects that are more or less "profitable" for the market and favouring the inclusion of the most vulnerable segments of the population (households suffering energy poverty).
The operation of the new One Stop Shop in Padova (starting in 2025) will be conditional on the completion of several ongoing projects:

- the Cooling Down[24] project (to be completed in 2025), in which the University of Padova is participating, which is developing an urban energy planning tool with a focus on the city centre, modelling the state of affairs and assessing the benefits associated with possible redevelopment and energy production from renewable sources, with particular reference to cooling uses and in response to the growing problems associated with the formation of heat islands in the summer,
- the PadovaXChange project[25] (to be completed in 2024), which is developing a digital twin of the industrial area of Padova aimed at simulating the effectiveness of energy efficiency measures for structures and plants, with a focus also on distribution networks,
- the Let's GOv project[26] (to be completed in 2025), carried out together with the other Italian cities of the Climate Neutral Cities Mission, focused on the identification of governance tools able to govern the energy transition process, with a focus by Padova on the use of the One Stop Shop to facilitate the establishment of RECs.

Through the One Stop Shop in Padova, it is estimated that 20% of residential housing units (about 20,000), tertiary buildings (about 415, equal to 900,000 square metres) and industrial buildings (about 200 - equal to about 1,000,000 square metres) can be fully redeveloped by 2030, with:

- a 50% reduction in the gross thermal energy demand of the civil buildings involved,
- a 30% reduction in the gross thermal energy demand of the industrial buildings,
- total electrification of consumption (from gas boilers to electric heat pumps) with increased efficiency of generation systems,
- a 20% reduction in the electricity needs of civil buildings,
- a 20% reduction in the electrical demand of industrial buildings.

In order to verify the effectiveness of some technologies applicable in the building sector and experimented through the One Stop Shop, Padova Municipality will benefit from the results obtained from the tests carried out in the UniZeb pilot building, inaugurated in May 2024 by the University of Padova with the collaboration of the building school.
Among the solutions to encourage greater penetration of thermal renewables in the existing building stock, projects based on low-enthalpy open and closed loop **geothermal technology** are spreading alongside solar thermal, which is already widely used. The closed circuit can be encouraged/promoted in small buildings (detached houses, small apartment blocks) with available

22 https://www.padovafit.eu/it/home.html
23 https://www.sportelloenergiapadova.it/
24 https://gogeothermal.eu/projects/cooling-down-project/
25 https://smart-cities-marketplace.ec.europa.eu/scalable-cities/action-grant?lang=it
26 https://netzerocities.eu/italys-pilot-activity-letsgov-governing-the-transition-through-pilot-actions/

outdoor space (gardens, etc.) for drilling and probe installation. These are systems with a short authorisation process. In the case of larger buildings with less available space, the construction of open-loop systems with pick-up and return will be encouraged, though limited by authorisation procedures that often take longer than 12 months. Geothermal heat pumps can be supplemented with air-water/air-air pumps. The promotion of such solutions might be envisaged when revising the municipal building regulations. This measure is fully consistent with the new targets set by the Case Green Directive recently approved by the European Parliament.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Drafting of a feasibility study for the activation of the One Stop Shop in Padova (2024)
- Completion of ongoing European projects (2024-2025)
- Activation and operation of the One Stop Shop in Padova (2025-2030)
- Activation of a dedicated communication campaign (2025)

Benefits from portfolio shares (Tables B-2.2)	**7,630 tCO2**
Further potential benefits of the strategic action if fully realised	**147,258 tCO2**

2. Electrification of the vehicle fleet

In addition to the measures already included in the portfolio (Tables B-2.2), this strategic action focuses on accelerating the electrification of the private vehicle fleet. Reducing traffic flows and the number of kilometres travelled annually by cars and commercial vehicles are priority objectives of the Padova SUMP and the Climate City Contract, which can be achieved by strengthening local public transport services (road and rail), reinforcing the cycling strategy and capitalising on the opportunities offered by alternative sharing mobility systems and MaaS solutions. At the same time, consideration must be given to the remaining private car traffic, in respect of which it is important to define a strategy for the progressive electrification of the vehicle fleet through incentive policies (already in place at the national level[27]), the construction of the necessary infrastructure in the region (with widespread and integrated recharging systems) and raising awareness among the public and businesses. Electric cars made up only a small percentage of the registered fleet in 2021 (0.3% according to ACI data), but through the combination of the Climate City Contract proposals and government incentives they are expected to increase significantly by 2030, with an additional 20,000 electric vehicles on the road (or 12% of the registered vehicle fleet, taking the total number in 2021 as a reference).

Electric vehicles still have a high price, which slows down their dissemination. Increased maturity of the technologies should lead to lower prices in the coming years. The purchase cost is an important barrier for less affluent households. Specific financial products or national/regional incentives (see the government incentives launched in June 2024 - Ecobonus and the Veneto Region incentives) will be promoted to support the less affluent strata of the population.

The cost of recharging remains high for all those who cannot connect their vehicle in their private home/building (due to a lack of recharging points or connections): the price can be as high as 0.80-1.00 €/kWh, about three times the cost of residential electricity. the Municipality is committed to a greater involvement of the trader-companies that install the columns, in order to obtain a recharging service at a capped price, around 50 cents per kWh, currently considered as the cross-over price of

27 https://ecobonus.mise.gov.it/

kWh with respect to the thermal carrier. Roaming difficulties between operators, i.e. the possibility of using a column with the card or app of another operator, will also have to be managed.
The **infrastructure of charging points** is still an element to be implemented in the city. In the CCC it is planned to increase the number of charging points by a further 500 by 2030 through new agreements with the industry, trade associations and companies, sports centres, shopping centres, park-and-ride facilities, etc. Charging points maximise their effectiveness when installed in places where vehicles stay for many hours (work and leisure places) during the day, i.e. at times of peak photovoltaic production. With the **RES Padova project** (financed by the EUCF programme), it is planned to involve sports centres in the installation of photovoltaic systems coupled with electric vehicle charging points for the use of members/frequent users.
With a view to fostering the electrification of travel, the municipality plans to activate the **Ultra Low Emission Zone** (ULEZ) in the central area of the city, which is already designated as a limited-traffic zone. This measure is more selective in nature than the LEZ and is being tested in more densely urbanised areas, where the impacts of pollutants on human health are more significant. It is therefore a matter of circumscribing areas in the city where mobility (both private and freight) must be allowed using electrically driven vehicles, cargo bikes, bicycles, etc., thus inhibiting the access and transit of endothermic vehicles. A further stimulus to the spread of electric vehicles could be the possibility of exempting the cost of recharging in the charging bays dedicated to electric car owners, maintaining only the parking fee (or defining a single all-inclusive fee that incentivises the use of electric vehicles), thanks to agreements with the companies-traders that install the charging stations to reduce the kWh cost. A feasibility study will be commissioned to assess the potential costs and benefits of measures for the deployment of electric vehicles in the city.
The spread of electric vehicles can also be aided by a **communication and awareness-raising campaign** aimed at the public and industry, with the aim of making people realise the potential benefit for the community of using an electric car (both environmentally and economically, considering the entire useful life of the vehicle) and the benefits for the driver (driving comfort, no noise, etc.).

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Drafting of a feasibility study to assess the costs and benefits of the various measures aimed at promoting electric cars in cities: introduction of the ULEZ, exemption of charging fees in public parking spaces with introduction of an all-inclusive fee, dissemination of charging stations and capping of charging prices per kWh (2025)
- Activation of a dedicated communication campaign (2025)
- Signing of new Climate Agreements or revision of existing agreements for infrastructure with electric vehicle charging points (2025)
- Signing of new Climate Agreements or revision of existing agreements to provide designated financial products for the purchase of electric vehicles (2025)
- Activation of the first measures to promote electric cars (2026)

Benefits from portfolio shares (Tables B-2.2)	**212 tCO2**
Further potential benefits of the strategic action if fully realised	**24,296 tCO2**

3. District heating of civil and industrial buildings

This action, included in the portfolio (table B-2.2a), envisages the construction of **new district heating networks** to serve areas of the city with high potential, e.g. in the vicinity of the waste-to-energy plant or other plants that generate and dissipate thermal energy, or in areas with constraints that make it difficult to implement other projects, such as the city centre, where the penetration of other renewable sources is hindered by building and town-planning constraints. District heating networks can be powered:

- by open-circuit low-enthalpy geothermal plants (with wells that could be built in city parks or car parks, for example);
- by exploiting the heat dissipated by the waste-to-energy plant: in this vein, there are already project guidelines that direct the use of this energy for the benefit of the new hospital complex in Padova;
- exploiting waste heat from wastewater networks,
- exploiting waste heat from technological plants serving local companies and high-performance plants (data centres, supermarkets, manufacturing, etc.).

Geothermal systems, possibly built in city car parks (through the installation of coils), could take advantage of the high temperatures that are reached in the summer by the materials used for road surfaces, accumulating heat in the ground to be reused in the winter. This measure could be part of a larger project to adapt all city car parks, which are currently highly critical areas with respect to both heat island formation and extreme rainfall management.
The construction of district heating networks is subject to the definition of a **feasibility study** highlighting potential benefits, constraints, and limitations to the development and the heat sources supporting them. The study will have to indicate the areas that can benefit from district heating as a priority, both in terms of the users that can be connected and the predisposition of the thermal distribution plants for these users (demand analysis), and in terms of the development of the networks and the location of the supply plants. Within the framework of the **PadovaXChange**[28]project, focused on the development of a digital twin of the industrial area of Padova, some member companies and signatories of the Climate Agreements have already shown interest in the potential construction of mini district heating networks. Further heat exchange opportunities are being studied by other companies in the area (e.g. Officine Ferrari in connection with the Padova2000 sports centre).
The development of district heating in the historic centre with geothermal plants is conceivable through the construction of open loop wells in non-urbanised parks/lots within or on the edge of the centre (e.g. Fistomba Park). Numerous closed- and open-circuit geothermal systems have been implemented in recent years in Padova in public and private buildings:

- buildings of the University of Padova (former geriatric hospital; former Marzolo canteen; former Piave barracks; departments of psychology and mathematics in Via Venezia/Via Trieste);
- other buildings (Carotta kiln stables, post office, botanical garden, Zabarella building, Roccabonella building, new conference centre).

A number of European projects have been concluded in recent years involving the University of Padova, including:

- **GEO4CIVHIC**[29], whose aim is to develop and demonstrate the most efficient and easy-to-install shallow geothermal technologies, using innovative and compact drilling machines suitable for the built environment, and developing or adapting heat pumps and other hybrid

28 Project coordinated by R2M Solutions, signatory of a Climate Agreement
29 https://geo4civhic.eu/

solutions in combination with RESs for retrofitting and for the heating and cooling of existing and historic buildings,

- **CHeaP GSHP**[30], which aims to reduce the cost of ownership, investment and operation of shallow geothermal plants, increase safety during installation and operation, and increase knowledge of this technology. The project involves the improvement of an existing innovative vertical hole installation technology and the design and development of new installation methods. As part of CHeaP GSHP, a pilot project is being implemented to evaluate efficient geothermal solutions thanks to the technical-scientific contribution of the CNR, in the industrial area of Padova. In addition, a partnership with the RFX Consortium for heat exchange and integration of energy from geothermal plants in the absence of exchangeable energy between utilities is being finalised.

As a further experiment, thanks to the identification of regional funds, the construction of a connection well between a residential area in Padova and the thermal area south of the city (municipality of Montegrotto Terme) is being evaluated, to exploit the area's high volcanic heat potential.

In total, the strategy envisages the connection of 12,500 residential dwellings (12.5% of the dwellings surveyed in Padova), about 315 buildings for tertiary use (15% of the city's tertiary buildings) and about 200 industrial buildings (20% of the total), for a total development of about 140 km. Projects for the construction of new networks or the extension of existing district heating networks will focus on so-called efficient district heating, i.e. district heating based on the distribution of heat generated from renewable sources, waste heat or produced in high-efficiency cogeneration plants.

Planned actions

- Drafting of a feasibility study to assess the potential development of district heating networks in the city and possible heat sources to be used (2025)
- Definition of pilot actions of an experimental nature for the exploitation of geothermal energy (2025)
- Construction of new district heating networks (2026-2030)

Benefits from portfolio shares (Table B-2.2)	**58,237 tCO2**
Further potential benefits of the strategic action if fully realised	-

4. SMART Project - Padova's city-wide tram network system

The SMART project (Padova's city-wide tram network system) included in the portfolio (Table B-2.2a) represents a new way to reach any terminus without changes and to connect the main strategic points of the city (hospitals, new police station, city centre, university buildings, court, railway station and suburban service station), ensuring better circulation and more efficient and sustainable mobility.
The new system involves the use of 55 vehicles, which can make up to 450 trips per day and will allow up to 12,000 people per hour to be moved. The city will have eight transport lines, identified by as many colours:

- Pontevigodarzere-Guizza (pink line)
- Rubano-Vigonza (blue line)

30 http://cheap-gshp.eu/

- Rubano-San Lazzaro (purple line)
- Voltabarozzo-Vigonza (blue line)
- Voltabarozzo-San Lazzaro (yellow line)
- Pontevigodarzere-Voltabarozzo (orange line)
- Guizza-Vigonza (red line)
- Guizza-San Lazzaro (green line)

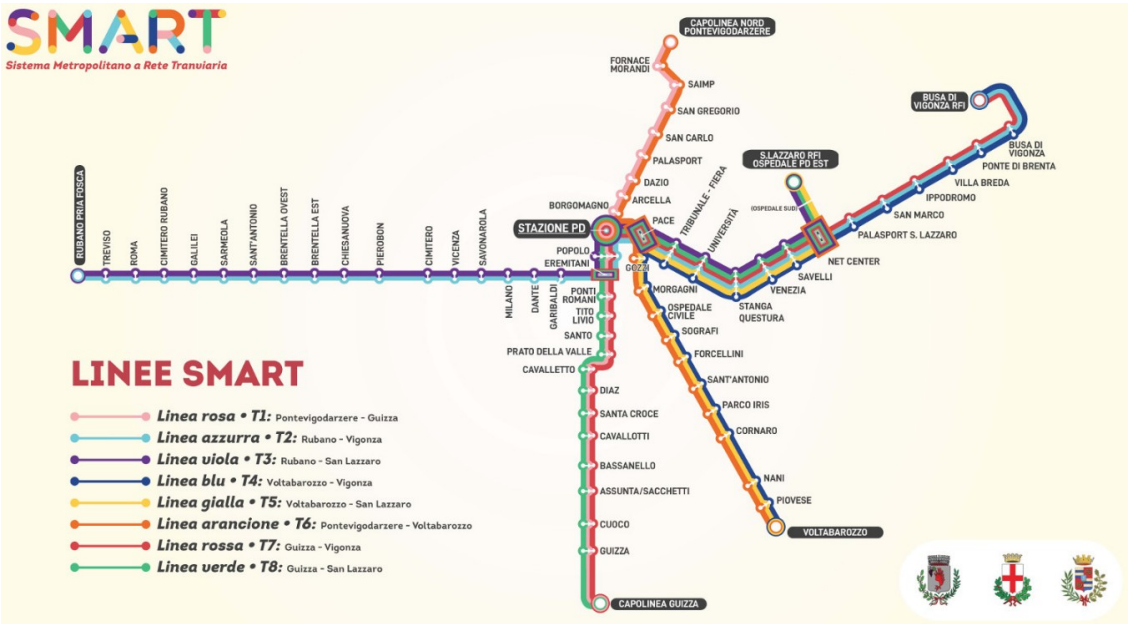

Figure B.1 – Sistema Metropolitano a Rete Tramviaria (Padova's city-wide tram network system)

The construction of the SMART project requires the completion of the new tram infrastructure financed by the NRRP (SIR2 from Vigonza to Rubano for a total length of 17.5 km and SIR3 from the railway station to Voltabarozzo for a length of 5.4 km) and the integration with the modal interchange systems on the outskirts of the city, to encourage a reduction in entries in the city. The measure is already fully financed and in the construction phase. The work will be completed by 2026 and the SMART system will be fully operational from 2027.
In order to facilitate the total coverage of the electricity consumption of the new tram lines, photovoltaic canopies are to be built in the park-and-ride car parks at the edge of the city, with the aim of ensuring both the shading of the parking spaces and the reduction of the heat island.
The estimated emission contribution from this action is derived from an assessment of the reduction in the number of private vehicles circulating by 2030 due to the development of the tram network. It is estimated that approximately 210 million kilometres travelled by endothermic vehicles can be avoided.

Planned actions

- Construction of the SIR2 tram line (2024-2026)
- Construction of the SIR3 tram line (2024-2026)
- Activation of the 8 SMART lines (2027)

Benefits from portfolio shares (Tables B-2.2)	**44,154 tCO2**
Further potential benefits of the strategic action if fully realised	-

5. Solar panels on civil and industrial buildings and activation of energy communities

In addition to the measures already included in the portfolio (Tables B-2.2), this strategic action aims to accelerate the rate of installation of new **solar photovoltaic** renewable energy power plants. The availability of large roof areas of both civil and industrial buildings, the presence of public and private actors willing to share the energy produced through the establishment of **joint renewable energy communities** and the favourable conditions of the photovoltaic market (falling prices, increasingly efficient storage systems, etc.) should favour a massive and widespread installation of photovoltaic systems. As a confirmation of these intentions, in 2023, thanks to the promotion by the Municipality, a manifesto for the development of "Padova 2030" RECs[31] was signed by local stakeholders: among them University of Padova, Chamber of Commerce, Confindustria Veneto Est, Confapi Padova, Coldiretti Padova, Asvess, CsvSV of Padova and Rovigo, Upa-Confartigianato, Oipe-Osservatorio Italiano sulla Poverty Energetica, Confagricoltura, Ascom and the Diocese of Padova.

The strategy is based on assessments of photovoltaic potential developed by the Google Environmental Insights Explorer (EIE). This tool provides an estimate of the technical solar potential of all buildings in the city. Knowledge about the shape of buildings is calculated using a machine learning algorithm that exploits data from Google Maps and aerial images. According to EIE estimates, in the municipality of Padova there is a maximum potential of about 730 MW (excluding north-facing roofs), while the installed photovoltaic power measured in 2021 was only **55 MW.**

Thanks to the favourable conditions mentioned in the introduction, the action considers that about 50% of the maximum potential can be exploited by 2030 due to the installation of photovoltaic systems, in all adding a capacity of about **310 MW** to the level recorded in 2021 (without taking into account the new installed capacity envisaged in the SECAP, amounting to a further **16.5 MW**).

According to the Renewable Municipalities Report[32] compiled by Legambiente, In 2023 the Padova area ranked second in Italy for the number of new installations, reaching approximately 15 MW in a single year.

Among other things, achieving this goal involves identifying and overcoming barriers for installations in the city centre. The recent amendments to the Building Regulations of Padova (approved by Municipal Council resolution 38/2024) go in this direction. Article 89 of these regulations envisages a distinction between the area of the city centre recognised by UNESCO as a World Cultural Heritage Site, with particularly stringent constraints for the installation of photovoltaic and solar thermal panels, and the rest of the city centre, where the possibilities for intervention have been broadened compared to the past.

With regard to the plants to be installed in the industrial area of Padova, a careful analysis of the available areas and an assessment of the possible sharing of space with intensive green roofs will be carried out in order to reduce the contribution of large photovoltaic plants to the formation of potential heat islands. For the industrial area, a study of available roofs has already been prepared with the aid of a drone, through which a photovoltaic potential of around 150 MW was assessed.

The strategy therefore envisages:

- communication and information campaigns to make end-users aware of the effectiveness of the measure and the favourable cost-benefit ratio of photovoltaics (currently the break-even point is around 5-6 years), also exploiting specially designed financial products made available by local banking operators or possible alternative solutions such as operational leasing,
- the activation of energy communities in the municipality, stimulating energy sharing among community users, maximising self-consumption. This action also has a social purpose, as it

31 https://www.padovanet.it/notizia/20230117/comunicato-stampa-sottoscritto-il-manifesto-la-realizzazione-delle-comunit%C3%A0

32 https://www.legambiente.it/wp-content/uploads/2021/11/Comuni-Rinnovabili-2024.pdf

provides for the redistribution of the economic benefits from the incentives provided by the GSE, for the benefit of households and people living in energy poverty,

- the revamping of existing plants (with new installed power 40% higher than previous conditions) that have reached the end of their lifespan have already been depreciated in terms of initial investment cost or have been damaged by extreme weather events (e.g. hail).

Padova Council approved its "Guidelines for the promotion and implementation of **PADOVA 2030 renewable and socially responsible energy communities** with Council resolution no. 2023/0087 dated 7 March 2023. As part of the manifesto for the development of RECs mentioned above, the municipality is promoting co-planning with the other public actors in the area, with the aim of arriving at the identification of the legal form and the preparation of the articles of association of a new REC with public governance. Activities preparatory to the launch of the REC are being carried out within the Let's GOv project,[33] funded by the NetZeroCities programme.
The creation of new private energy communities gravitating around a number of city sports centres is envisaged through the development of the **RES Padova** pilot project, financed by the EUCF programme and currently in the Investment Concept definition phase, involving members/customers both in the collection of the financial resources necessary for the installation of the systems (crowdfunding) and in the use of the energy produced, both locally (through free recharging of electric vehicles) and at home (through membership in the energy community). The model can be replicated in other similar contexts where user communities have already been established (e.g. supermarket customers, etc.).
This measure is consistent with the contents of the new Case Green Directive, which for existing public and non-residential buildings envisages the gradual installation of solar energy starting in 2027 where this is technically, economically and functionally feasible, with specific photovoltaic targets for public buildings with a useful floor area over 250 m^2 (by the end of 2030) and for non-residential buildings with a useful floor area over 500 m^2 subject to authorisation for major projects (by the end of 2027).

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Mapping of available municipal assets suitable for photovoltaic installations (2024)
- Activation of the first REC with public governance, within the framework of the PADOVA 2030 REC Manifesto and the Let's GOv project (2025)
- Activation of a dedicated communication campaign (2025)
- Support for the emergence of new private energy communities through the implementation of the RES Padova project (2025-2027)

Benefits from portfolio shares (Tables B-2.2)	**12,214 tCO2**
Further potential benefits of the strategic action if fully realised	**86,738 tCO2**

6. Boiler replacement in civil and industrial buildings

In addition to the measures already listed in the portfolio (Tables B-2.2), this strategic action includes:

33 https://netzerocities.eu/italys-pilot-activity-letsgov-governing-the-transition-through-pilot-actions/

- the launch of new tenders for the gradual replacement of old boilers/heat generators with the installation of electric heat pumps in residential buildings,
- technical-economic support to the public and businesses through a dedicated information desk for tertiary and industrial buildings (Padova Energy Help Desk,[34] available since 2021).

The tenders may be geared to the benefit of end users who:

- already have facilities in good condition, in order to avoid financing plants that are oversized compared to potential future needs,
- already have, as a priority but not exclusively, electricity generation systems from renewable sources (e.g. photovoltaics) capable of powering (at least partially) the heat pump,
- are in recognised energy poverty conditions (with the possibility of co-financing the installation at a higher percentage than in other cases).

The action requires that at least 15% of residential housing, 15% of tertiary buildings and 15% of industrial buildings replace their thermal generation systems by 2030.
This measure complies with the contents of the Case Green Directive, which envisages the phasing out of boilers powered by fossil fuels, inviting Member States to formulate specific measures to facilitate this transition in the heating and cooling sector, with the ultimate goal of completely eliminating boilers powered by such fuels by 2040. Furthermore, subsidies for the installation of autonomous boilers running on fossil fuels are to be discontinued from January 2025.
The measure is already partially supported by the Veneto Region, which annually publishes a call for tenders ("Bando Stufe"[35]) to encourage Veneto residents to contribute to the technological modernisation of heat generators through the replacement of biomass or diesel heating systems with new biomass or heat pump systems throughout the region.
The measure is also incentivised through the "Conto Termico" scheme[36] managed by the GSE, which provides incentives for private individuals for the installation of heat pumps, heat pump water heaters, solar thermal systems and heat pump hybrid systems.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Definition of a multi-year incentive plan for replacing boilers with electric heat pumps (2025)
- Activation of the first calls for tenders (2026)
- Activation of a dedicated communication campaign (2026)

Benefits from portfolio shares (Tables B-2.2)	**2,580 tCO2**
Further potential benefits of the strategic action if fully realised	**37,470 tCO2**

7. Mobility management / MaaS

In addition to the measures already included in the portfolio (Tables B-2.2), this strategic action focuses on the implementation of mobility management policies through local companies and schools with mobility managers. The action also concerns Padova Municipality employees, students and employees of the University of Padova and those in the city's population who are unemployed

34 https://www.sportelloenergiapadova.it/
35 https://www.regione.veneto.it/web/ambiente-e-territorio/bando-stufe-2024
36 https://www.gse.it/servizi-per-te/efficienza-energetica/conto-termico

or require forms of support for the use of public or private shared city mobility services. The action estimates that about 30,000 people could be involved in mobility management actions in Padova, which could allow a **20% reduction in the number of kilometres travelled annually** by private vehicles, identifying alternative forms of mobility to individual travel, either through the use of LPT vehicles or through the promotion of cycling or other solutions such as car pooling or shared mobility.
These measures are often already included in the Commuting Plans of public and private companies in the area. Many Climate Agreements were stipulated with parties that have the capacity and strength to directly influence the promotion of mobility management: from the trade associations of the tertiary and manufacturing world (Confindustria Veneto Est, CNA, ASCOM, APPE), which can offer consultancy services or training and communications, to major companies in the area, which have mobility managers and can directly implement sustainable mobility actions (University of Padova, ARPAV, AcegasApsAmga, Peroni, etc.).
The promotion of MaaS requires the full **integration** of the various mobility systems offering alternatives to cars, both technological and in terms of rates, and the identification of specific forms of rewards. With this in mind, the University of Padova signed a **memorandum of understanding** with Padova Municipality and is working on the topic of MaaS as part of Spoke 8 "MaaS & Innovative services",[37] supporting the municipal administration in the identification and implementation of pilot projects. The Municipality will also rely on the **MaaS for Italy** national platform, which offers services to public bodies for the performance of feasibility studies.
In order to encourage the use of collective transport and reduce private mobility to access the city, the possibility of offering free parking at park-and-ride car parks and the application of a reduced rate for the use of LPT for the entire day will be evaluated. This policy will have to be coordinated with the activation of the LEZ, in order to guarantee a viable alternative for owners of vehicles subject to the restrictions.
As part of the Integrated Sustainable Urban Development Strategy[38] the implementation of infomobility systems and the development of already existing systems is planned, necessary for the launch of a regional MaaS system and integrations with national MaaS integration platforms (MIMS), as well as the development of a regional single ticket solution.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Completion of a feasibility study for the application of MaaS in Padova (2025)
- Signing of new Climate Agreements or revision of existing agreements to activate corporate mobility management policies (2025)
- Definition of a plan to strengthen the mobility management policies of the Municipality of Padova (2025)
- Activation of a dedicated communication campaign (2026)
- Activation of pilot projects for the implementation of MaaS (2026)

Benefits from portfolio shares (Tables B-2.2)	**162 tCO2**
Further potential benefits of the strategic action if fully realised	**10,333 tCO2**

37 Financed under the notice for "Proposals for the strengthening of research facilities and the creation of R&D national champions for key enabling technologies", to be funded under the National Recovery and Resilience Plan, Mission 4, Component 2, Investment 1.4 funded by the European Union - NextGenerationEU.
38 Link

8. LPT electric buses

In addition to the measures already included in the portfolio (Table B-2.2a), this strategic action envisages a further gradual replacement of residual diesel buses in local public transport with new electric vehicles powered by renewable energy sources. The policy of fleet electrification will be carried out at the same time as the progressive reduction of the fleet due to the expansion of the new tram lines. In the long term, therefore, the percentage of electric vehicles out of the total number of vehicles circulating on urban lines will rise to 65%, although this fraction is calculated net of a reduction in the overall number of road vehicles, due to the introduction of the new tramway lines on rail.
The replacement of about one-third of the fleet that is still diesel-fuelled has already been planned thanks to the 2021-2027 NRRP and ERDF funding.
The new vehicles will be used to support the three tram lines SIR1, SIR 2 and SIR3. Electric buses will have priority use on the existing U03, U06, U07, U10, U25 lines in urban and suburban areas.
The action also includes the construction of a **charging station** for electric buses at the Busitalia Veneto depot in Via del Pescarotto. The investment project will include civil and plant engineering works, as well as the supply and installation of all the electrical infrastructure (including equipment) necessary for the construction of an overnight recharging facility inside the depot, where up to 12 fully electrically powered buses will be stationed. The charging facility will be compatible with any make and model of electric bus. This compatibility will allow not only the powering of vehicle traction batteries but also, through communication protocols between vehicles and station, the optimised and intelligent management of recharging through dedicated software (SMART CHARGING).
In order to encourage the use of public transport by road, 366 new electronic signs will be installed at bus stops, giving city users quick access to information on arrival times. Special on-board ticket payment devices will also be installed, which will further facilitate the use of the service.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Construction of an electric bus charging station at the Pescarotto depot (2025)
- Purchase of new electric buses to complement the already zero-emission buses (2024-2030)

Benefits from portfolio shares (Tables B-2.2)	**640 tCO2**
Further potential benefits of the strategic action if fully realised	**1,171 tCO2**

9. Introduction of a Low Emission Zone

With regard to access regulation, the measures proposed by the SUMP already include the revision of the current structure of the restricted traffic zone (and pedestrian zone) in the city of Padova and the introduction of the Low Emission Zone, as an action capable of correlating access rules according to vehicle type. The required change involves the need for a more expansive view of access to the city that brings the environmental load of vehicles (vehicle size, fuel type and emission standards) more directly into play.
The action envisages therefore the introduction of a Low Emission Zone (LEZ) in the city of Padova capable of progressively limiting the circulation of the most polluting vehicles. It is a measure justified in Padova by the constraints on vehicle traffic envisaged in the Po Valley Basin Programme

Agreement. The agreement requires the implementation of traffic restriction measures when the PM10 concentration limits are exceeded in urban and metropolitan areas. Through the LEZ these limitations would be extended temporally.
The Climate City Contract does not simply act by introducing new and more stringent restrictions, but offers mobility alternatives that guarantee high levels of accessibility of urban places. Significant investments in the expansion of the network and collective transport offer, the construction of new park-and-ride facilities and the expansion of the bicycle network and associated services are therefore elements that reinforce this strategy. The introduction of the LEZ will affect the area inside the ring roads. The implementation of the measure will require the introduction of increasingly binding controls according to a predefined time scale.
The activation of this measure is subject to an analysis of the demand and supply of mobility and will be developed in connection with the implementation of the previously mentioned alternative solutions such as the tram line, the "bicipolitana" and park-and-ride facilities. The introduction of the LEZ will also be based on the results of the ReVeAL project[39]. A further tool available to reduce accesses in the city, which can possibly be integrated with the new LEZ in Padova, is the innovative ordinances of the Move-In project (MOnitoraggio VEicoli INquinanti [Monitoring of Polluting Vehicles][40]), active in the Veneto Region in the areas of the participating municipalities, including Padova since February 2024. The project is an alternative measure to the structural restrictions on the circulation of the most polluting vehicles imposed for air quality, through a more conscious use of the vehicle, taking into account actual use and the driving style adopted. By voluntarily joining Move-In, the vehicle is no longer subject to the prescribed hourly and daily blocks, but receives an annual mileage allocation based on environmental type and class. Additional bonus kilometres are also awarded following the detection of a more sustainable driving style in urban areas and on motorways (by means of a black box). Once the mileage threshold is reached the vehicle can no longer be used in the service area until the completion of the year of membership.
Thanks to the introduction of the LEZ, it is estimated that around 25% of annual trips into the city can be avoided, with a reduction of 125 million/km travelled by vehicles with low environmental performance.

Planned actions

- Completion of a feasibility study for the introduction of the LEZ in Padova (2025)
- Monitoring of the effectiveness of the Move-In Project (2025)
- Infrastructure of the city to enable automatic controls on the borders of the LEZ (2026-2027)
- Activation of a dedicated communication campaign (2027)
- Activation of LEZ lines (2028)

Benefits from portfolio shares (Tables B-2.2)	**-**
Further potential benefits of the strategic action if fully realised	**28,230 tCO2**

10. Actions to promote cycling

Already included in the portfolio (Table B-2.2a), the action envisages the full implementation of the Padova Bicipolitana and the promotion of cycling, including through the installation of bike racks and bike boxes.

39 https://www.padovanet.it/informazione/reveal-regolamentazione-dellaccesso-dei-veicoli-una-migliore-vivibilit%C3%A0
40 https://www.padovanet.it/informazione/move-monitoraggio-dei-veicoli-inquinanti

Among the main projects planned and already in the implementation or future construction phase are:

- continuation of San Bellino cycleway,
- the construction of cycling routes that will connect the station with the main university hubs, such as the areas of Via Dolfin, Via Grassi/Rocco/Ippodromo and the connection of existing cycling routes,
- the Bicipolitana north wall,
- the Bicipolitana west wall,
- the Bicipolitana Chiesanuova,
- the Bicipolitana hills,
- the Bicipolitana south wall,
- the Bicipolitana south-eastern wall,
- the Bicipolitana 12A Facciolati,
- the redevelopment of Via 58° Fanteria,
- the Mandria cycleway.

Through this action to strengthen the bicycle network in the City of Padova, it is expected that the number of kilometres cycled annually could increase by about 35%, or about 20 million km/year. These new routes are considered as alternatives to the use of the private car.

Planned actions

- Construction of the new lines of Padova's Bicipolitana (2024-2026)

Benefits from portfolio shares (Tables B-2.2)	**4,623 tCO2**
Further potential benefits of the strategic action if fully realised	-

11. Promotion of the purchase of certified electricity

In addition to the measures already included in the portfolio (Tables B-2.2), this strategic action is expected to significantly and progressively increase the number of end users (residents, public and private companies, associations, etc.) who will sign **electricity supply contracts with a guarantee of origin from certified renewable sources**. This measure is based on a dual assumption: on the one hand, there will be a gradual electrification of final energy consumption (in transport, civil and industrial buildings), and on the other hand it will not be possible to meet the entire demand through on-site production of energy from renewable sources. Many stakeholders have already started to procure green energy, as described in the SECAP actions. These include: the city of Padova, the University of Padova, AcegasApsAmga, ARPAV, Coldiretti, the Diocese of Padova, etc. In addition, some companies in the area have included the purchase of certified electricity among their Climate City Contract actions.
A first overall mapping of the state of the art regarding the share of green energy purchased in the area will be carried out in 2025, through a questionnaire involving suppliers operating in Padova. Drawing on the results of this survey, a number of communication campaigns will be structured, organised and implemented in order to inform the public and local organisations and associations of the importance of this specific measure in contributing to the achievement of climate neutrality.
It is assumed that by 2030 about 60% of the electricity consumed in Padova will be purchased from certified green sources, without taking into account the additional contributions from the actions already accounted for in the SECAP, which provide for the further purchase of 18 MWh from

renewable sources with a guarantee of origin.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- First mapping of the state of the art with regard to green energy procurement (2025)
- Activation of a dedicated communication campaign (2025)

Benefits from portfolio shares (Tables B-2.2)	**1,279 tCO2**
Further potential benefits of the strategic action if fully realised	**226,018 tCO2**

12. Communication/information to the public and businesses

In addition to the measures already included in the portfolio (Tables B-2.2), a massive, multi-year, multi-channel communication campaign will be implemented through this strategic action. Many of the actions that can be taken with respect to climate neutrality can be implemented directly by the public, businesses and other organisations and associations in the area, through the purchase of green technologies or the adoption of practices to reduce energy consumption. The maturity already achieved by some technologies, such as photovoltaic systems, heat pumps, insulation materials, etc., will allow their rapid deployment, also thanks to their favourable cost-benefit ratio. The financial solutions available to end users today, which will be further extended by operators in the province of Padova (see Climate Agreements), and the opportunities offered by tax deductions, will allow for a rapid spread of these devices. Moreover, the potential for reducing consumption from wasted energy in the civil, industrial and transport sectors is widely recognised. Waste reduction can come from increased end-user awareness and through the adoption of smart metering and energy management solutions for tertiary and industrial users.
The action envisages that **15% of electricity consumption and 10% of thermal consumption** in the civil and industrial sectors and **15% of transport consumption** (considering only diesel and petrol vehicles) can be reduced by means of information and communication actions, which on the one hand can lead to the dissemination of green technologies, and on the other to the reduction of waste and the optimisation of end uses.
The action also envisages that approximately one-fourth of the expected reduction in emissions associated with waste production and incineration can be ensured through targeted user-oriented communication actions, as a result of improved sorting of the waste produced.
Communication and information actions can be considered cross-cutting with respect to the other strategic actions. Every change introduced in city life (e.g. activation of the LEZ) and every new opportunity that exists (e.g. provision of new resources for the purchase of climate-neutral devices such as heat pumps, photovoltaic systems, electric vehicles, etc.) will have to be accompanied by relevant communication campaigns.
The strategic action includes the activation and maintenance of a **communication campaign** capable of reaching the entire municipal population (from the youngest – with activities in schools – to the oldest) and all the city's stakeholders in a widespread manner. The campaign should be designed using different channels and media, both digital and non-digital (social networks, road posters, radio, TV, local newspapers, dedicated events, etc.) and defining a coordinated graphic design to support all information and communication activities (from the posters to the materials to be distributed at public events). The identification of one or more prominent spokespersons will be crucial to engage citizens more extensively and effectively. In addition, a dedicated website will be

set up where all Climate Agreements and project partners will be published and where it will be possible to follow the development of the various measures envisaged to achieve climate neutrality.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Definition of a Padova 2030 communication strategy (2024-2025)
- Activation of the first communication campaigns (2025)

Benefits from portfolio shares (Tables B-2.2)	**484 tCO2**
Further potential benefits of the strategic action if fully realised	**153,981 tCO2**

13. Improvement of waste collection

In addition to the measures already included in the portfolio (Tables B-2.2), the strategic action provides for a progressive improvement in source-separated waste collection in the city, significantly reducing the percentage of non-separated waste and the pro-capita production of dry waste. The objectives assigned to the Basin Council that Padova Municipality belongs to were defined at the regional level with Regional Council Decree no. 988 of 9 August 2022. For the “Padova Centro” council for the Padova catchment area (of which Padova Municipality is a member), the 2030 target is the production of 115 kg/person of residual waste and the achievement of 80% separate waste collection. The strategy for achieving these goals will be defined in the course of 2025, and includes:

- the construction of new collection centres (a new facility was financed by the NRRP in Via del Bigolo in Arcella and will be used to collect different categories of recyclable waste such as WEEE, hazardous urban waste such as batteries, motor oils, special waste similar to urban waste, bulky waste),
- the construction of pre-treatment plants for recycled waste in Corso Stati Uniti, which will significantly reduce the movement of transport vehicles to the waste treatment plants (taking place directly at the transfer centre) and will reduce material waste to 5% as opposed to the 10% that was traditionally achieved, increasing the efficiency of separate waste collection and therefore increasing revenue for the community from a higher quality of recyclable material. Finally, the earth from the excavations for the construction of the plant will be used to reclaim the land of the former Roncajette landfill, providing a clear example of the application of circular economy principles to eliminate waste,
- the definition of differentiated collection policies in the city, taking into account the different urban and morphological characteristics of the spaces available for the optimal provision of the service and taking into account the issues associated with implementation in the city centre,
- the provision of a pay-as-you-throw rate to incentivise the progressive reduction of unsorted waste, to be implemented at the same time as a better control of deliveries,
- the encouragement of re-use and recycling and of all waste prevention policies.

Planned actions

- Implementation of the actions of the signatory stakeholders of the Climate Agreements (2024-2030)
- Elaboration of a Plan for the improvement of waste collection in the Municipality of Padova,

to be defined in agreement with the strategy of the Consorzio di Bacino Padova Centro (2025)
- Activation of a dedicated communication campaign (2025)
- Implementation of Plan measures (2026-2030)

Benefits from portfolio shares (Tables B-2.2)	**1,126 tCO2**
Further potential benefits of the strategic action if fully realised	**6,667 tCO2**

The timetable for the three-year period 2024-2026

A large part of the activities envisaged in the portfolio actions and in the municipal-led strategic actions will start in the three-year period of 2024-2026 and will be completed/implemented by 2030. The following is a summary of the main actions aimed at achieving climate neutrality in the Municipality of Padova.

2024

- Signing of Climate Agreements and initiation of CCC actions by the municipality and stakeholders (the signing of new Agreements is open; new Agreements are planned until 2030)
- Definition of a communication strategy for the Climate Neutrality Plan
- Works for the new Bicipolitana lines in Padova (until 2026)
- Works for the construction of the new SIR2 and SIR3 tram lines (until 2026)
- Purchase of new electric buses to complement the already zero-emission buses (up to 2030)
- Drafting of a feasibility study for the activation of the One Stop Shop in Padova
- Mapping of available municipal assets suitable for photovoltaic installations

2025

- Elaboration of a Plan for the improvement of waste collection in the Municipality of Padova and start of planned activities (up to 2030)
- First mapping of the state of the art of green energy procurement in the city and subsequent launch of a communication campaign to increase the spread (up to 2030)
- Completion of a feasibility study for the introduction of the LEZ in Padova
- Activation of the first REC with public governance, within the framework of the PADOVA 2030 REC Manifesto and the Let's GOv project
- Support for the emergence of new private energy communities through the implementation of the RES Padova project (until 2027)
- Drafting of a feasibility study to assess the potential development of district heating networks in the city and possible heat sources to be used
- Definition of a multi-year incentive plan for replacing boilers with electric heat pumps and publication of the first calls for tenders (until 2030)
- Activation and operation of the One Stop Shop in Padova (until 2030)
- Completion of a feasibility study for the application of MaaS in Padova
- Drafting of a feasibility study to assess the costs and benefits of various measures to promote electric cars in cities
- Signing of new Climate Agreements or revision of existing agreements to activate corporate

mobility management policies

2026

- Start of works to enable automatic controls of the borders of the new LEZ (until 2027) with activation of the LEZ in 2028
- Activation of pilot projects for the implementation of MaaS in Padova
- Start of work on new district heating networks (until 2030)
- Activation of the first measures to promote electric cars

B-2.3: Remaining emission reduction strategies

It will be difficult to abate the remaining part of the climate-altering emissions (20% of the baseline emissions of 256,635 tonnes CO2). These emissions can be considered “hard to abate” as they are associated with processes or utilities that are unlikely to be energy efficient or benefit from energy production from renewable electrical (photovoltaic) or thermal (geothermal, solar thermal, etc.) sources.
According to a compensatory logic, part of these emissions can be absorbed by the public and private trees and shrubs in the municipality and in the process of being planted.

“Hard-to-abate” emissions

The hard-to-abate category mainly includes civil and industrial users that, due to their geographical location (e.g. city centre), type of industrial process (e.g. heavy manufacturing industry), and building characteristics (e.g. listed or valuable buildings) are not among the buildings that will benefit from energy redevelopment by 2030 (or only partially). The civil buildings in Padova’s city centre are subject to regulatory and physical-technological constraints that prevent or limit the works that can be carried out. In these cases, for example, many buildings cannot be insulated by means of external cladding or are limited in the possibility of replacing windows and doors, or cannot host photovoltaic systems on the roof or heat pumps that require external units for heat dissipation. Sometimes, when there are innovative technical solutions (e.g. solar tiles), the cost or performance of these technologies make the solution less attractive.
It is estimated that 56% of unabated residual emissions fall under this category.
There will also be some transport-related emissions that cannot be abated by 2030. Some heavy or light road vehicles will continue to run using endothermic diesel or petrol engines, as the market does not yet offer viable solutions for the total electrification of the vehicle fleet. Moreover, many vehicles will not yet have exhausted the multi-year depreciation of their purchase cost and thus cannot be expected to be replaced before that date. In contrast to the civil and industrial construction sector, residual emissions from transport can still be reduced in the longer term. Residual emissions from transport will account for about 24.9% of the total by 2030.
Even with regard to waste management, a block of unabated emissions, i.e. associated with the production of undifferentiated waste delivered to the incinerator in Padova, can be expected to remain. The enormous effort to increase the proportion of differentiated waste and to reduce dry waste per capita described in strategic action no. 13 is in itself extremely ambitious and difficult to implement, because even in this area the introduction of new waste collection solutions may be hindered by spatial and urban planning constraints (e.g. in the city centre, where spaces for door-to-door collection are not always guaranteed or are in any case hindered by lengthy decision-making processes or behavioural obstacles). By 2030, it is estimated that 28,400 tonnes of CO2 will remain, or 10.4% of the total.
Finally, a further block of residual emissions is attributable to methane leaks in the city's gas distribution network. Despite the numerous maintenance operations, given the extent of the network, which covers the entire municipality, and considering the need to sign specific agreements

with local distributors (the Administration's objective for the coming years), it is cautiously assumed that the network will not see a reduction in leaks by 2030. These emissions will therefore account for 8.6% of total residual emissions.

"Offsettable" emissions

Approximately 1,505 tonnes of CO2 (0.59% of hard-to-abate emissions) can be offset through absorption by the city's green assets.

In the scenarios developed within the Green Spaces Plan, approved by the municipal administration in 2022 by Council resolution no. 2022/029, some hypotheses of urban green development are shown in a long-term scenario, corresponding to a 20-year time span. Compared to the total number of trees in the municipality (both public and private) in 2021, which is approximately 430,000, the Green Spaces Plan aims to increase this value by 30%. Considering the 2030 target of the Climate City Contract, it is assumed that about 50% of the Plan's target can be achieved, thus envisaging the planting of 65,000 new trees in public and private spaces (of which 30,000 are already included in actions of the SECAP) and achieving a total stock of about 500,000 trees by 2030. The action also aims to bring the existing tree stock towards normal conditions, with appropriate planning and management strategies. Part of this strategy was initiated in 2021-2022 (and accounted for in the SECAP) with the planting of 10,000 trees[41] in public spaces in the city.

The planting of new trees also involves the implementation of de-paving and de-impermeabilisation of some of the city's areas, such as Piazza Savelli, a car park redevelopment project in the Soft City area, financed by the former Ministry for Ecological Transition. This strategy was also included in the Piano degli Interventi, approved by Padova Council in 2023 with resolution no. 6/2023, in which it was assumed that approximately 930,000 square metres would be unsealed and transformed into permeable areas.

The availability of new areas may also derive from the application of urban equalisation, aimed at improving urban, landscape, architectural, energy, hydraulic and environmental quality through the recognition of a building capacity to entities that, by way of example, provide for the implementation of public interest projects, including urban forestation.

A multi-year programme to unseal sealed grounds and start the campaign for planting new trees (continuing until 2030) is planned for 2025.

Offsetting actions related to the planting of trees were planned by some city stakeholders and included in Tables B-2.2.

To conclude this module, following is an overview of the items contributing to the achievement of climate neutrality through an 80% reduction of the baseline (equal to 1,283,174 tCO_2eq) corresponding to **1,026,540 tCO_2eq:**

- Contribution of the **existing Plans** (SECAP): **168,017 tCO_2eq per year**, equal to **16.37% of the target**

- Contribution of the **Portfolio Actions envisaged by the stakeholders in the area who are signatories to Climate Agreements and included in Tables B-2.2**: **133,343 tCO_2eq** equal to **13.00% of the target**

- Contribution of the **Behavioural Actions**: according to NZC guidelines, potential energy savings due to behavioural measures can range from a minimum of 2% to a maximum of 20%, in accordance with the European Environment Agency. In light of the above, the

41 https://padova10000alberi.it/

behavioural actions in this Plan (net of those already quantified by the stakeholders and included in the portfolio) have been estimated at **15% of the target**, equal to **153,981 tCO_2eq**

- Contribution of the **Strategic Actions**: the 13 actions developed by the Administration as frameworks for the portfolio actions and key actions for achieving climate neutrality by 2030: the contribution to the reduction of the baseline is substantial, amounting to 55.30%, corresponding to **568,179 tCO_2eq**

The following chart visually summarises the above: **the Gap is almost zero and equal to 3,018 tCO_2eq** (0.3% of the target).
"Residual emissions" refers to the remaining 20% of hard-to-abate emissions (see Section B-2.3), i.e. those emissions that for structural, economic, financial, behavioural, etc. reasons, cannot be abated (amounting to **256,635 tCO_2eq**). Residual emissions can be partially abated through offsetting actions, mainly associated with the absorption of CO2 by the city's trees and shrubs (**1,505 tonnes of CO2** equal to 0.59% of residual emissions).

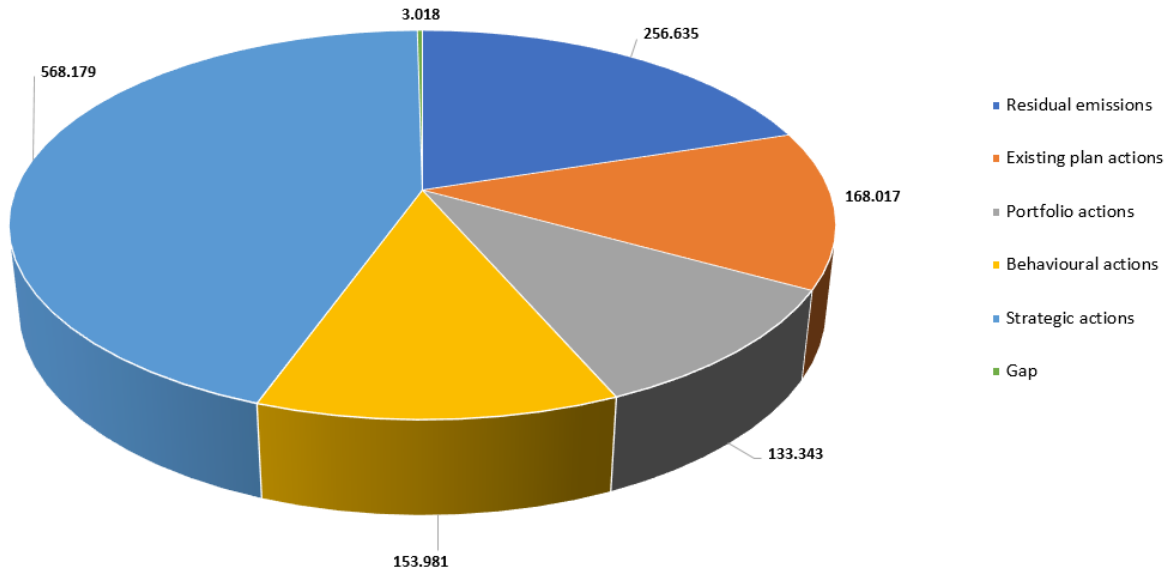

Figure B.2 - Baseline abatement summary (tCO_2)

7.3. Module B-3 Monitoring, evaluation and improvement indicators

The Municipality of Padova has been publishing an Environmental Report since 2006, a tool that guides the Administration's objectives year by year and assesses its efforts compared to what has already been achieved. In fact, the structure of the document makes it possible to understand whether policies are acting correctly by highlighting potential impacts and benefits and also ensuring monitoring over time thanks to an array of indicators that have been consolidated over the editions of the document.

The 14th edition of the document, referring to 2022, maintained the same methodology that refers to the European CSRD directive[42] and the CLEAR method,[43] identifying 13 areas that correspond to the major environmental and sustainability issues on which the city has an interest in reporting, each of which contains an important range of indicators that rate the work done.

This tool is a document that is well embedded within the local administrative context as it contains sustainability policies identified from the municipality's main planning documents, involving the respective councillors and executives who operationally draft and manage them.

One of the main objectives of the Environmental Report is to analyse the expenditures incurred in the implementation of the organisation's environmental policies. For this reason it will be extensively covered in Part A of the Investment Plan.

The following table represents a further development of the indicators currently included in the Environmental Report. In fact, they were selected based on the strategic actions identified by Council, confirming the key role these will play in the coming years. The indicators selected make it possible to concisely and effectively assess the implementation status of the planned measures and indirectly the emission impacts they cause.

The objective of climate neutrality has also been included in the section of the Single Programming Document that commits all the companies in which Padova Council has a stake: objective no. 5 “Initiatives aimed at achieving objectives of efficiency, cost-effectiveness of management and reduction of climate-changing emissions in line with the goal of a climate-neutral city and with the objectives of the Climate City Contract, also linked to the containment of increases in energy costs” provides for the drafting of an annual summary report on the activities carried out, with specific monitoring indicators.

The metadata sheets (B-3.2.1 to B-3.2.14) detail the sources and methods of data collection for monitoring, as well as the procedures for assessing the effectiveness of the actions in reducing climate-changing emissions.

42 Directive no. 2022/2464 Corporate Sustainability Reporting Directive (CSRD) gives guidance on sustainability reporting by extending the objectives of the previous European directive of 2014 to the following areas: the extension of the scope of application to large companies and large groups (including unlisted) as well as to small and medium-sized enterprises; the use of common reporting standards defined at the European level (ESRS); and the obligation to subject reporting to a statement of compliance.
43 The CLEAR method (City and Local Environmental Accounting and Reporting) is an environmental accounting tool developed in Europe to provide operational support to local authorities in the Member States in the area of procedures, models, practices and indicators.

B-3.1: Indicators for monitoring, evaluation and improvement							
Expected results	**Actions**	**ID**	**Indicator**		**Target values**		
					2025	**2027**	**2030**
Reduction of the fossil energy demand of the building stock and improvement of living comfort	Energy redevelopment of civil and industrial buildings	1	Number of buildings with energy upgrades	no.	500 buildings	2,500 buildings	6,770 buildings
Reduction of petroleum product consumption in the transport sector, local pollutants and traffic noise	Electrification of the vehicle fleet	2	Electric vehicles out of total registered vehicles	%	3.5 %	6 %	12 %
Reduction of the fossil energy demand of the building stock	District heating of civil and industrial buildings	3	Buildings using district heating	no.	0 buildings	500 buildings	4,360 buildings
Strengthening of local public transport and reduction of traffic	SMART Project - Padova's city-wide tram network system	4	Operational tram lines	km	10.5 km	33.7 km	33.7 km
Increased energy production from renewables	Solar panels on civil and industrial buildings and activation of energy communities	5	Photovoltaic plants	MW	100 MW	200 MW	365 MW
Reduction of the fossil energy demand of the building stock	Boiler replacement in civil and industrial buildings	6	Boilers/generators replaced	no.	1,000 boilers/generators	5,000 boilers/generators	15,600 boilers/generators
Reduction of petroleum product consumption in the transport sector, local pollutants and traffic noise	Mobility management / MaaS	7	Users involved	no.	5,000	20,000	30,000
Improvement of the local public transport service and air quality	LPT electric buses	8	% electric buses of total buses on urban routes	%	25 %	40 %	65 %
Reduction of vehicular access to the city, local pollutants and traffic noise	LEZ	9	Low Emission Zone	Yes/ No	No	No	Yes
Reduction of traffic and congestion	Actions to promote cycling	10	Length of the urban cycle network	km	215 km	240 km	240 km

B-3.1: Indicators for monitoring, evaluation and improvement							
Expected results	**Actions**	**ID**	**Indicator**		**Target values**		
					2025	**2027**	**2030**
Reduction of energy supply from fossil fuels	Promotion of the purchase of certified electricity	11	Purchase of electricity from certified renewable sources	MWh	100 MWh	350 MWh	779 MWh
Population informed and aware of climate mitigation	Communication/information to the public and businesses	12	Euros invested in communication campaigns	Euro	1.5 mn	4.5 mn	4.5 mn
Reduction of non-separated waste and activation of circular economy chains	Improvement of waste collection	13	Annual per capita production of non-separated municipal waste	kg	190 kg	150 kg	115 kg
Increased CO2 sequestration capacity and reduction of the impacts of extreme weather and climate events	Increased urban greenery	14	Plantings in public and private areas	no.	10,000 new trees	20,000 new trees	35,000 new trees

B-3.2.1: Metadata – "Energy redevelopment of civil and industrial buildings" action indicator	
Indicator name	**Number of buildings with energy upgrades**
Units of measurement	Absolute number
Definition	This indicator shows the number of residential, tertiary and industrial buildings subject to energy upgrading thanks to the activities of the Padova One Stop Shop or as a result of direct action by Padova Council or the signatories of the Climate Agreements
Calculation method	Data taken from the number of building applications filed with the municipality, the number of contracts signed thanks to the One Stop Shop or communications from stakeholders who signed Climate Agreements.
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator will be supplemented by the energy saving figure from the energy bill (option 1), the Energy Performance Certificate (option 2) or estimates based on average values per type of work done (option 3) to calculate the reduction of climate-altering emissions. Consideration will be given to savings in electricity consumption, thermal consumption and also the possible production of energy from renewable sources. By defining the number of buildings undergoing energy upgrading, the indicator also indirectly shows the number of building units that improve their acoustic and thermo-hygrometric performance and are subject to an increase in property value. Moreover, it is able to fully assess the impact of the strategic action it refers to (strategic action 1). The indicator is also included in the Covenant of Mayors platform (in the section on energy poverty), although it is expressed as a % of the total number of buildings in the municipality.	
Data collection requirements	
See the "Calculation Method" section. All data sources will be local. The indicator will be monitored annually and there are not expected to be any problems in retrieving the information as it is locally held. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.	

B-3.2.2: Metadata – "Electrification of vehicle fleet" action indicator	
Indicator name	**Electric vehicles out of total registered vehicles**
Units of measurement	Percentage
Definition	This indicator shows the number of electric vehicles in the Municipality of Padova out of the total number of registered vehicles (considering cars, motorbikes, industrial vehicles and heavy vehicles)
Calculation method	[Electric vehicles / Total vehicles]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be accompanied by the emission factor associated with electricity end-use in order to calculate the reduction of climate-changing emissions. For this purpose, the value of the national energy mix in tCO_2eq/MWh provided by the Covenant of Mayors Office (COMo) in ANNEX 1 - Fuel Emission Factors Database will be used, but the production of	

energy from renewable sources that can increase the self-consumption share of the circulating vehicle fleet will also be considered. The increase of electric vehicles on the road is assumed to be proportional to the reduction of internal combustion vehicles. The calculation of emission savings will take into account the energy mix used in the road transport sector (as of 2021 dominated by diesel and petrol). By defining the number of electric vehicles out of the total registered vehicle fleet, the indicator indirectly measures certain secondary benefits including the reduction of noise pollution and the improvement of air quality in the city. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 2). The monitoring of the installation of electric vehicle charging points will be carried out through the PUN (national database of charging infrastructure).[44] This indicator is not included in the Covenant of Mayors platform.
Data collection requirements
The data will be taken from the statistics compiled annually by ACI as part of its Self-Portrait, which provides details of the registered vehicle fleet broken down by municipality, by Euro category, by type of vehicle and by type of energy vector used. The source of the data is therefore national but with details per municipality. It is planned to monitor the indicator on an annual basis. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire (limited to municipal vehicles).

B-3.2.3: Metadata - "District heating of civil and industrial buildings" action indicator	
Indicator name	**Buildings using district heating**
Units of measurement	Number
Definition	This indicator calculates the number of buildings that are connected to district heating networks (a network being constituted when at least two buildings are connected to the same heat source).
Calculation method	The figure can be derived from the number of building applications filed with the municipality, the number of contracts signed thanks to the One Stop Shop or communications from stakeholders who signed Climate Agreements.
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be accompanied by the emission factor associated with the energy carriers used to generate the heat injected into the network when calculating the reduction of climate-changing emissions. The data provided by the operators of the energy production plants serving the networks will be used for this purpose. The calculation of the emission benefit will also take into account the prior consumption of the connected buildings. The indicator indirectly measures some secondary benefits of district heating, including first and foremost the improvement of air quality in the city by limiting the number of emission sources in the municipal area. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 3). The indicator is provided by the Covenant of Mayors platform, in the section on energy poverty.	
Data collection requirements	
See the "Calculation Method" section.	

44 https://www.piattaformaunicanazionale.it/

All data sources will be local. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report.

B-3.2.4: Metadata - "SMART Project" action indicator	
Indicator name	**Operational tram lines**
Units of measurement	Kilometres
Definition	The indicator measures the length of the city's tram network. It is an indicator that assesses the physical/infrastructural “size” of the public rail transport service.
Calculation method	This can be derived from the tender for the construction of the tram lines.
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be accompanied by the number of kilometres travelled annually using all methods of transport (walking, cycling, bus, tram, vehicle) to calculate the reduction of climate-changing emissions, which is provided on an annual basis by the Google Environmental Insights Explorer. The completion of the new tram lines will in fact ensure a reduction in kilometres travelled in private cars. The indicator indirectly measures a number of secondary benefits of tram networks, including first and foremost the improvement of air quality in the city by limiting the number of vehicles on the roads and the increase in property values of properties close to the new lines. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 4). This indicator is not included in the Covenant of Mayors platform.	
Data collection requirements	
The figure will be taken from the approved construction projects and the awarded and tested works. All data sources will be local. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.	

B-3.2.5: Metadata - "Photovoltaic plants on civil and industrial buildings and activation of energy communities” action indicator	
Indicator name	**Photovoltaic plants**
Units of measurement	Megawatts
Definition	The indicator measures the installation of roof-mounted (or ground-mounted, if possible) photovoltaic systems in the municipality. Cumulative indicator.
Calculation method	[Sum of the power of individual photovoltaic systems operating in the Municipality of Padova]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be accompanied by the plant’s number of annual operating hours or the actual production according to the meter to calculate the reduction of climate-changing emissions. Given the difficulty of finding the meter data for all city installations, we opt for the application of the number of hours, which for the latitude of Padova is estimated at 1,120	

hours/year. Energy production from photovoltaics is assigned an emission factor of 0. The indicator indirectly measures some secondary benefits of plants, including the possibility of reducing the burden of energy bills for end-users and the possibility of activating energy communities to exchange the energy produced, maximising self-consumption and benefiting from forms of financing that can support energy-poor households. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 5). This indicator is included in the Covenant of Mayors platform.
Data collection requirements
The data will be obtained from the GSE, the entity that provides incentives within the renewable energy communities and dedicated withdrawal to calculate the kWh injected into the grid. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.

B-3.2.6: Metadata - "Boiler replacement in civil and industrial buildings" action indicator	
Indicator name	**Boilers/generators replaced**
Units of measurement	Number
Definition	This indicator measures the number of heat generation systems replaced.
Calculation method	[No calculation] The figure is derived from the number of beneficiaries of the municipally/regionally managed calls.
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-altering emissions, this (indirect) indicator must be accompanied by some additional information such as the prior and subsequent output of the plants replaced and the energy vector used. All this information can be derived from the applications filled in by the beneficiaries in order to access the incentives made available by Padova Council or the Veneto Region. The indicator indirectly measures a number of secondary benefits, including improved living comfort for the dwellings that will benefit from the incentives and improved air quality as a result of the progressive electrification of heating systems with the inclusion of heat pumps. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 6). This indicator is not included in the Covenant of Mayors platform.	
Data collection requirements	
The data can be derived from the applications for incentives registered by the granting bodies (Padova Council, Veneto Region). It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report.	

B-3.2.7: Metadata - "Mobility management / MaaS" action indicator	
Indicator name	**Users involved in mobility management policies**
Units of measurement	Number
Definition	This indicator measures the number of people benefiting from organisational, economic or fiscal instruments that favour sustainable mobility options for commuting.
Calculation method	[No calculation] The data is provided by stakeholders who are signatories of Climate Agreements or other entities with corporate mobility managers (including Padova Council) that prepare and implement the Commuting Plan
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-changing emissions, this (indirect) indicator needs to be accompanied by some additional information such as the method of travel of the beneficiaries before and after the implementation of the policies in favour of sustainable forms of mobility. The emission impact data must also be accompanied by the kilometres travelled annually by the various vehicles. Since this indicator is difficult to collect, some standard coefficients may be applied during annual monitoring, assuming that each beneficiary reduces the percentage of kilometres driven by private car. This value indirectly measures some of the secondary benefits of sustainable mobility policies, including the reduction of rush-hour congestion, air and noise pollution, and improved living conditions for some workers. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 7). This indicator is not included in the Covenant of Mayors platform.	
Data collection requirements	
See the "Calculation Method" section. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report.	

B-3.2.8: Metadata – "LPT electric bus" action indicator	
Indicator name	**% electric buses of total buses on urban routes**
Units of measurement	Percentage
Definition	This indicator is intended to represent the progressive electrification of the bus fleet (public road transport) of Padova's urban lines
Calculation method	[LPT electric buses / total buses in the fleet]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-changing emissions, this (indirect) indicator must be accompanied by the electricity consumption, the overall consumption of the bus fleet and the emission factors associated with the end uses of the energy carriers used. For this purpose, the value of the national energy mix in tCO_2eq/MWh provided by the Covenant of Mayors Office (COMo) in ANNEX 1 - Fuel Emission Factors Database will be used, but the production of energy from renewable sources that can increase the self-consumption share of the circulating vehicle fleet	

will also be considered. By defining the number of electric vehicles out of the total LPT fleet, the indicator indirectly measures certain secondary benefits including the reduction of noise pollution and the improvement of air quality in the city. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 8). This indicator is not included in the Covenant of Mayors platform.
Data collection requirements
The data will be taken from statistics provided annually by the local public transport operator, currently Busitalia Veneto, a signatory of a Climate Agreement. The source of the data is therefore regional/local. It is planned to monitor the indicator on an annual basis. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.

B-3.2.9: Metadata – "LEZ" action indicator	
Indicator name	**Low Emission Zone**
Units of measurement	Approval of the founding measure
Definition	The indicator measures the effective activation of a Low Emission Zone in Padova, limiting access to the city to the most polluting vehicles and thus reducing the kilometres travelled annually by private and lower Euro category cars.
Calculation method	[No calculation] The indicator merely transposes the LEZ establishment measure
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-changing emissions, this (indirect) indicator must be accompanied by a precise assessment of the number of vehicles registered in Padova and in the neighbouring municipalities (gravitating around Padova) with restricted access to the city. The quantification must also take into account the carrier used by the vehicles covered by the measure. Since an exact calculation of the kilometres avoided thanks to this measure is impossible, an estimate will be made according to the number of vehicles with restricted access. By defining the number of vehicles that cannot enter the city, the indicator indirectly measures certain indirect impacts, including the reduction of noise pollution and the improvement of air quality in the city and the reduction of road congestion. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 9). This indicator is not included in the Covenant of Mayors platform.	
Data collection requirements	
The data will be taken from the ACI database through its annual Self-Portrait, in which the vehicle fleet is broken down by Euro category and energy carrier. The number of vehicles with restricted access to the city can thus be inferred. The source of the data is national but with local details. It is planned to monitor the indicator on an annual basis. The information is also used as part of the organisation's Sustainability Report.	

B-3.2.10: Metadata – "Actions to promote cycling" action indicator	
Indicator name	**Length of the urban cycle network**
Units of measurement	Kilometres
Definition	This indicator measures the extent of cycling infrastructure in the city. This is a cumulative indicator.
Calculation method	[No calculation]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be accompanied by the number of kilometres travelled annually using all methods of transport (walking, cycling, bus, tram, vehicle) to calculate the reduction of climate-changing emissions, which is provided on an annual basis by the Google Environmental Insights Explorer. The completion of the new cycling infrastructure will in fact ensure a reduction in kilometres travelled in private cars. By defining the extent of the cycling infrastructure network, and consequently the number of users, the indicator indirectly measures a number of secondary benefits, including the reduction of noise pollution and the improvement of air quality in the city, the reduction of road congestion and the improvement in the population's psychological and physical well-being. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 10) and is included in the Covenant of Mayors platform.	
Data collection requirements	
The figure will be taken from the approved construction projects and the awarded and tested works. All data sources will be local. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.	

B-3.2.11: Metadata - "Promotion of the purchase of certified electricity" action indicator	
Indicator name	**Purchase of electricity from certified renewable sources**
Units of measurement	% of total electricity consumption in the area
Definition	This indicator measures the rate at which electricity is purchased from certified green sources, with supply contracts with a guarantee of origin.
Calculation method	[Electricity consumption from certified green sources / Total electricity consumption in the area]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-altering emissions, this (indirect) indicator must be associated with the value of the national energy mix in tCO_2eq/MWh provided by the Covenant of Mayors Office (COMo) in ANNEX 1 - Fuel Emission Factors Database. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 11) and is included in the Covenant of Mayors platform.	
Data collection requirements	
The data will be taken from the energy suppliers active in the municipality of Padova. All data sources will be local operators. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. Questionnaires will be created to collect information in aggregate form.	

The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire (limited to municipal buildings).

B-3.2.12: Metadata - "Communication/information to the public and enterprises" action indicator	
Indicator name	**Euros invested in communication campaigns**
Units of measurement	Euro
Definition	This indicator defines the commitment of Padova Council and the stakeholders that signed Climate Agreements to the development of communication campaigns for the promotion of actions aimed at achieving climate neutrality.
Calculation method	[No calculation]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This indicator measures the "intensity" and magnitude of the communication and information campaigns promoted in the area to guide the choices of consumers and end users. The indicator is therefore indirect. To calculate the reduction of climate-altering emissions, the indicator estimates the number of people reached by the campaigns and the potential reduction of energy consumption, waste produced and the additional production of energy from renewable sources that can be achieved thanks to the communication initiatives conducted. The indicator is able to fully assess the impact of the strategic action it refers to (strategic action 12) and is not included in the Covenant of Mayors platform.	
Data collection requirements	
The figure will be taken from the budget allocated to communication and information campaigns by Padova Council and the other stakeholders signing the Climate Agreements. All data sources will be local. It is expected that the indicator will be monitored annually and that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report.	

B-3.2.13: Metadata - "Improvement of waste collection" action indicator	
Indicator name	**Annual per capita production of non-separated municipal waste**
Units of measurement	Kilograms of residual dry waste
Definition	This indicator measures the annual per capita production of residual dry waste. It is linked to the increase in the proportion of sorted waste, but also more generally considers the amount of total waste produced by the population of Padova.
Calculation method	[Total dry waste / population]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. This (indirect) indicator must be combined with the emission factor associated with the incineration of residual dry waste in order to calculate the reduction of climate-altering emissions. By indicating the reduction of waste produced in Padova, the indicator indirectly measures some secondary benefits, including the reduction of service management costs and the development of	

circular economy and recycling chains. The value is able to fully assess the impact of the strategic action it refers to (strategic action 13) and is included in the Covenant of Mayors platform.
Data collection requirements
The data is provided annually by the Veneto Regional Agency for Environmental Protection (ARPAV), as an activity of the supra-regional waste observatory.[45] The indicator is monitored on an annual basis and there should be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire.

B-3.2.14: Metadata – "Increased urban greenery" action indicator	
Indicator name	**Plantings in public and private areas**
Units of measurement	Number of trees
Definition	The indicator measures the number of trees planted in public and private areas of the municipality. This is a cumulative indicator.
Calculation method	[No calculation]
Context	
The indicator does not directly measure the impact in terms of reducing climate-changing emissions. To calculate the reduction of climate-changing emissions, this (indirect) indicator must be associated with the absorption capacity of the trees planted, which on average is equal to 40 kg of CO2 per tree per year for the calculations of the emissions associated with the AFOLU sector. The value is able to fully assess the impact of the compensation action it refers to and is not included in the Covenant of Mayors platform.	
Data collection requirements	
The data is obtained from two different sources: the public tree stock is counted annually by the Greenery, Parks and Urban Agriculture Sector of Padova Council. The private stock was quantified when the Green Spaces Plan was drawn up and will be subject to further monitoring (using satellite sources) on a multi-year basis. It is expected that there will be no issues retrieving the information. The information is also used as part of the organisation's Sustainability Report and the urban ecosystem questionnaire (for the part of the trees owned by the municipality).	

45 https://www.arpa.veneto.it/temi-ambientali/rifiuti/rifiuti-urbani/rifiuti-urbani-2022

8 Part C – Enabling climate neutrality by 2030

Part C "Enabling climate neutrality by 2030" aims to outline any enabling interventions — i.e. regarding organizational setting or collaborative governance models or related to social innovations — designed to support the climate action portfolios (Module B-2) as well as aiming to achieve co-benefits outlined in the impact pathway (Module B-1). These interventions also address the opportunities, gaps and barriers identified in Modules A-2 and A-3.

8.1. Module C-1 Governance innovation interventions

Table C-1.1: Governance actions for achieving climate neutrality

Governance of the carbon neutrality process

The carbon neutrality process is backed by a horizontal and vertical governance model, which revolves around the local government structure and the Council's subsidiaries and feeds off the relations with stakeholders operating in the municipal area (public and private) and with institutions and organizations that operate at a supra-municipal level.

Horizontal governance

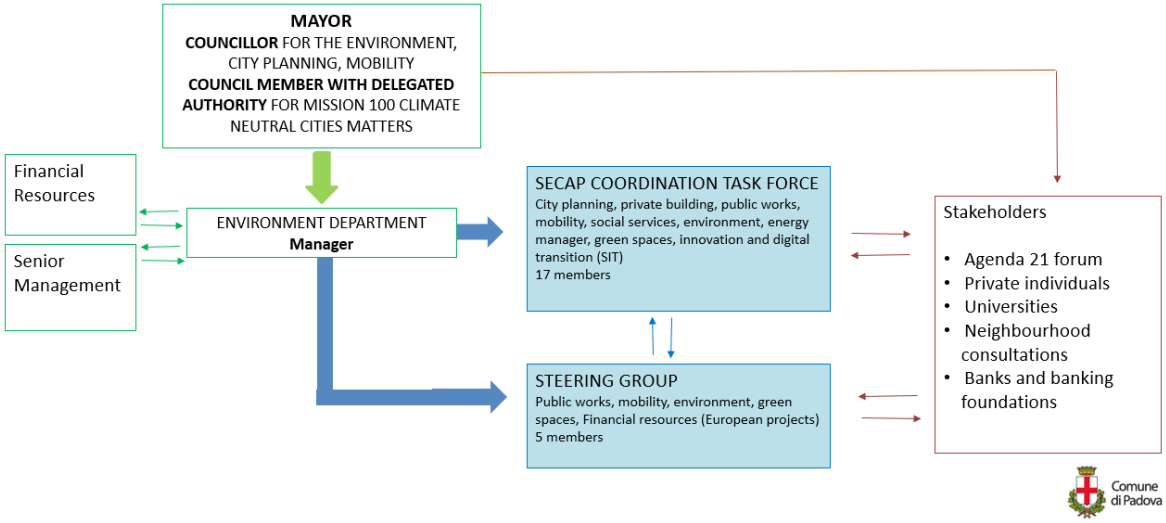

Figure C.1 – Horizontal governance model

Padova Council formally established (with Senior Management resolution no. 2022/56/0005 dated 06/04/2022) an **interdepartmental task force** to carry out the following activities:

- coordinating the delivery of actions provided for under the SECAP, in conjunction with any external stakeholders who may need to be engaged,
- monitoring the progress of SECAP actions to check that they are on track to meet the 2030 targets, by compiling indicators on a biennial basis,
- exploring actions, projects and programmes that are planned or being implemented but have not yet been included in the SECAP,
- identifying the Departments' specific training needs to facilitate the sharing of sustainability

goals and operating practice for the SECAP's execution.

The task force is coordinated by the Environment and Land Department and includes Departments who are directly or indirectly responsible for climate change mitigation and adaptation matters (Green Spaces, Public Works, City Planning, Financial Resources, Mobility, Private Building, Social Services, Innovation and Digital Transition - formerly SIT).
The task force is assisted by Senior Management
The task force is expected to meet continuously at regular intervals.

The SECAP provides for the creation of a Resilience Management department. With resolution no. 2023/0718 dated 19/12/2023, Council determined to establish the department following approval of the Climate City Contract by the European Commission, also tasking the department with setting up the **Steering Group** for the Climate City Contract's implementation, who would be required to interact and liaise with the interdepartmental Task Force and whose team would include contacts from the different Departments of strategic importance for the CCC's implementation. The duties tasked to the Steering Group include:

- implementing the Climate City Contract and liaising with the Mission City Advisor,
- taking part in initiatives organized by NetZeroCities,
- identifying initiatives, trials and projects developed by other cities or strategic partners to be replicated in Padova,
- coming up with, preparing and planning new submissions to European funding programmes, developing relations with public and private partners,
- processing the data collected through the Interdepartmental Task Force in order to compile a biennial report on the progress of the SECAP and Climate City Contract,
- organizing and taking part in communication and information activities,
- organizing and taking part in meetings and information sharing and exchange sessions with local stakeholders.

The technical team is supported by the **political structure**, made up of the Mayor, the Councillor for the Environment acting in concert with the Councillors responsible for related areas, and a council member who has delegated authority for climate neutrality matters. The political structure sets out the vision for the city's development and strategic objectives, which must also result from the broad participation of all local stakeholders and citizens.

Council is assisted by its **subsidiaries**, which have signed specific climate agreements with the local government:

- AcegasApsAmga, which is a utility company providing services such as water resource management and distribution, electricity generation and execution of energy efficiency improvement work, waste collection and treatment, along with many other services: public lighting, district heating, facility management, integrated urban water management, etc.,
- Busitalia Veneto S.p.A., which provides urban and suburban public transport services across the districts of Padova and Rovigo,
- Consiglio di Bacino Padova Centro, which is involved in the programming, organization, contracting and control of the public integrated municipal waste management service,
- Interporto Padova S.p.A., an intermodal logistics centre that designs and produces logistics and transport infrastructure and services and, through City Porto, handles the urban distribution of goods. As of April 2024, Interporto Padova S.p.A. has also incorporated Padova's industrial area, Consorzio ZIP.

The horizontal governance system benefits from the additional contribution of **local stakeholders**

(public and private), who have been involved in the strategic planning process since the inception of the first Agenda 21 group, currently reconfigured into a Living Lab. Some stakeholders who are members of the Living Lab have gone on to sign a Climate Agreement with Padova Council. Others will be asked to do so in the coming years. The underlying philosophy of the Living Lab (including Padova's) is open and voluntary participation.

The **Living Lab**, which was established as part of the European H2020 2ISECAP project[46], in which Padova Council is a partner, integrates innovation and research processes in a partnership between public and private stakeholders in the local context. The creation of the Living Lab fosters capacity-building activities, the exchange of knowledge and active collaboration, to co-define some of the SECAP and Climate City Contract measures.
To define the climate neutrality strategy, the City of Padova organized a campaign to involve local stakeholders, who were actively involved in defining the goals and actions from the earliest stages of the application.
A participatory pathway was organized in spring 2023, in which more than 30 local stakeholders took part and were called to explore three strategic thematic areas for climate neutrality: building stock recovery and RES, sustainable mobility, and circular economy and waste management. The participatory journey was divided into seven meetings, and ended with a public event open to the entire citizenry.
After an initial, more theoretical meeting during which information on Padova 2030 and the Net Zero Cities Mission was provided, the participants, divided into two groups and guided by special facilitators, were asked to identify the main barriers and opportunities related to the three thematic areas covered by the meetings. In a second step, stakeholders were asked to indicate how they could contribute to reducing Padova's carbon footprint by 2030. These first meetings were the basis for the collection of the so-called “Climate Agreements,” a document that brings together the actions and commitments of all of the adhering stakeholders: these actions will cover the entire time frame of interest of the Climate City Contract, from the base year 2021 until 2030, with the prospect of monitoring actions cadenced every two years.

46 https://2isecap.eu/it/home-italiano/

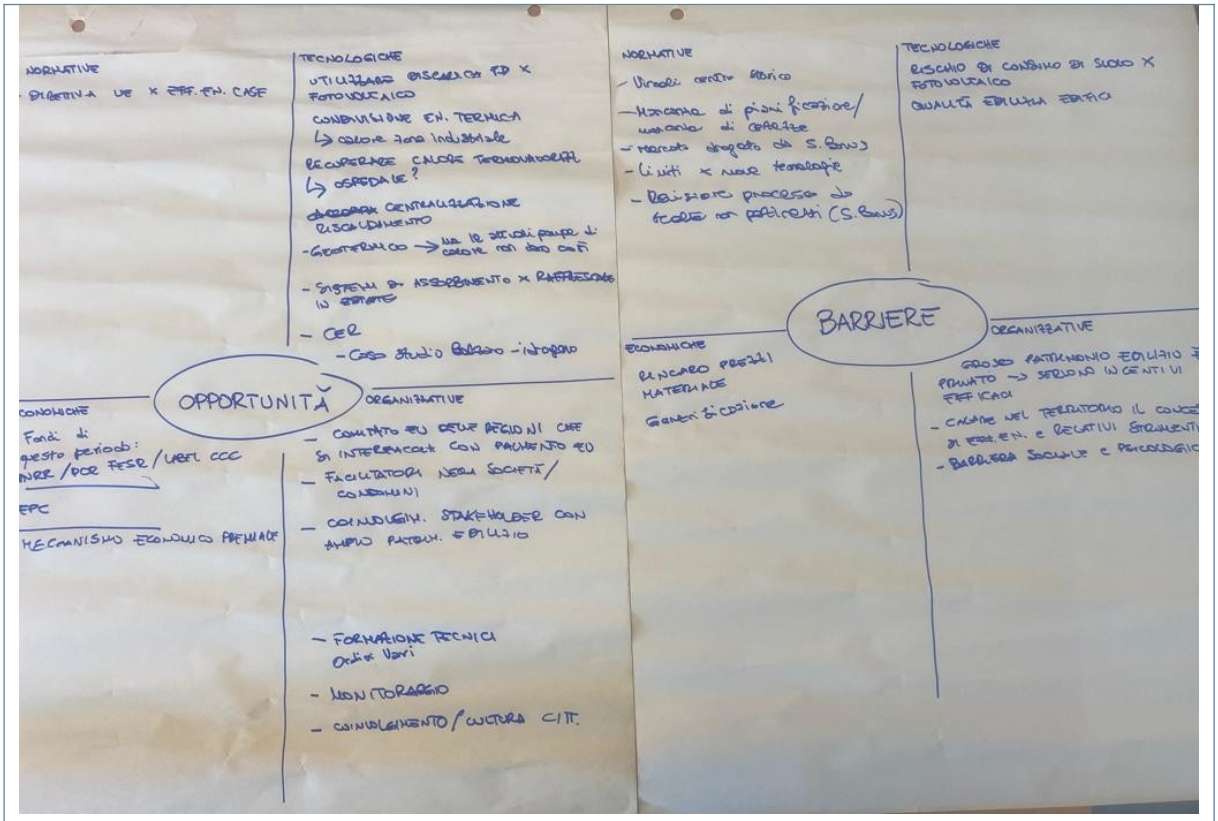

Figure C.2 – The meetings with local stakeholders

The participatory path, however, was only the first step in a long journey of local involvement, which subsequently included:

- three meetings with the Neighborhood Councils to involve them in the NZC Mission and promote their role as intermediaries to citizens regarding the Padova 2030 pathway. The Neighborhood Councils are the tool developed by the Administration to enable citizens to actively participate in the life and choices that affect individual neighborhoods, in the management of common goods, and in the social and cultural life of the places where people live and work. The members of the Councils, in fact, on the one hand are spokespersons for the needs of the area of reference, and on the other, thanks to the participatory budgeting tool made available to them each year, they promote activities and projects that they consider a priority in their neighborhood. During the meetings held in the fall of 2023, the members of the councils proposed to use part of the budget made available to them annually for environmental works, from 2025 and up to 2030, actively contributing to the Climate Neutrality Mission, as well as serving as an information point to the citizenry;

Figura C.3 – The meetings with the neighborhood councils

- 4 public meetings (May 2023, November 2023, December 2023, April 2024) open to the entire citizenry. These meetings were embedded within widely attended city festivals (National Energy and Sustainability Forum 2023 and 2024, Sustainability and Culture Festival 2023, Compraverde Forum 2023), so as to have a good sounding board. During these meetings, the Climate Neutrality Mission was told and explained and what the City of Padova intends to accomplish in the coming years. Stakeholder engagement was also given visibility, indicating the collective effort the city is putting forth and the need to address the Climate Neutrality Mission with a holistic and synergistic approach;
- ongoing bilateral technical and policy meetings in the period between September 2023 and June 2024 to engage the territory in the CCC drafting process and give it concreteness within the Climate Agreements;
- educational activities at schools in Padova. Every year the City of Padova promotes educational activities at city schools of all levels (from kindergarten to high school) on environment-related topics. Starting in 2023, it has been decided to prioritize the issue of climate change, declined in different forms, offering schools courses on energy and renewable sources, conscious behavior and consumption choices, sustainable mobility and biodiversity protection. The municipality's intent is to contribute to raising awareness among young people, so as to give them the tools to become aware and responsible adults. These educational activities are in addition to other historical initiatives of the City of Padova, such as the “Green Miles” competition, which awards prizes to elementary school classes in which boys and girls walk or bike the most miles on the home-school route.

As part of the activities focused around collaboration and co-designing of Climate City Contract measures, Padova Council has signed a number of important collaborative agreements with local actors:

- on 16 January 2023, the **"Padova 2030" Manifesto of Renewable (and socially responsible) Energy Communities** was signed, with many local stakeholders joining the initiative, including ASCOM (Padova's traders association), ASVESS (Veneto sustainable development association), Padova Chamber of Commerce, CSV di Padova e Rovigo (voluntary services centre - Padova and Rovigo branch), Coldiretti Padova (national farmers' federation - Padova branch), Confagricoltura Padova (Italian farmers' confederation - Padova branch), Confapi Padova (federation of small businesses - Padova

branch), Confartigianato Padova (artisan business association - Padova branch), Confindustria Veneto Est (confederation of Italian industry - East Veneto branch), Padova Diocese, OIPE (Italian energy poverty observatory) and the University of Padova,

- on 9 March 2023, following the signing of the above-mentioned Manifesto, the "**PADOVA 2030" REC Technical Board** was established,
- on 11 July 2023, the **Memorandum of Understanding between the University of Padova and Padova Council** was signed for the creation of the Climate City Contract and associated activities (City Council resolution no. 2023/0255 dated 23/05/2023), bringing the benefits of cross-cutting collaboration and exchange of knowledge and skills,
- in 2022, the **Council of Innovation** was formed, a permanent roundtable on innovation representing public and private stakeholders and academia, including Padova City Council, the University of Padova, the Chamber of Commerce, UniSMART (Padova University's foundation to promote technology transfer), Padova Hall Spa, SMACT Competence Center, Confindustria Veneto Est (confederation of Italian industry - East Veneto branch), Le Village by CA Triveneto, Galileo Visionary District, Paradigma, Accenture and non-profit foundation Fondazione Fenice,
- in February 2024, **Padova City Council and WindTre** signed a memorandum of understanding, with the purpose of forming a working group to assess the feasibility of developing and implementing activities/initiatives of public interest in the following fields: Smart City, Institutional Events, Education, Local Innovation Hubs. One of the activities put forward by WindTre as part of the memorandum of understanding was the "Smart City Transformation Academy", a digital education initiative targeted at local government bodies that tackles issues linked to the use of digital technologies to improve the environment and quality of life in cities,
- in April 2024, **Padova City Council and electricity distributor ENEL Distribuzione** signed a memorandum of understanding, as part of the NRRP, to join forces in planning maintenance work on the city's electricity grid and boost its capacity in light of the introduction of the two new tram lines. More specifically, E-Distribuzione has a significant programme of NRRP-related work planned for Padova from 2023 to 2026, for a total of around 66 million euros. This work focuses on upgrading and modernizing the city's electricity grid, which will optimize the service offered to residents, enable end-use electrification and help digitalize the services in question. Overall, the work involves building two new primary substations; the technological upgrading of 168 secondary substations — essential nodal points on the power grid — which will thus be enabled to deliver more power to customers (said systems will also be improved with the addition of the best technologies currently available, so as to encourage end-use electrification by raising the quality of the service offered significantly); and over 120 km of medium- and low-voltage lines to be built new or have their capacity boosted to increase the network's resilience and make more power available to residents.

Climate Agreements are e key part of the Climate City Contract and are signed by Council and by local entities who are prepared to make tangible commitments to reduce GHG emissions in the city. The agreements feature a description of the identified action, the forecast emissions reduction and the financial commitment required for its implementation. Below is a list of the current signatories:

- AcegasApsAmga (a company controlled and coordinated by Hera S.p.A., a utility providing waste and water services, gas and electricity distribution in Italy's Northeast, as well as public lighting and energy upgrading nationwide across Italy),
- ACLI Padova (socially committed Christian association promoting worker rights),
- ANACI Padova (national association of condominium and property managers - Padova branch),

- ANCE Padova (national trade association representing building contractors and contractors in allied industries across the Padova district),
- APPE (association of commercial businesses for Padova district),
- ARD Raccanello S.p.A. (privately owned company manufacturing a full range of building materials: from water-based interior wall paint, lime putty, and high-performance exterior finishes, to external wall insulation application products),
- ARPA Veneto (Veneto regional environmental protection agency),
- ASCOM Padova (association of traders in the Padova district)
- Associazione dei Biologi del Veneto (association engaged in scientific promotion by undertaking scientific, cultural, recreational, training and awareness-building initiatives targeting members, young people, schools and the general public on health and environmental protection issues),
- Banca Etica (financial service provider),
- BCC Veneta Credito Cooperativo (financial service provider),
- Busitalia Veneto (company operating in the Veneto region, providing urban and suburban public transport services across the districts of Padova and Rovigo),
- Padova Chamber of Commerce (public body that performs public functions within its home district to support the business community and consumers and promote development of the district's economy),
- Cherry Bank (financial service provider),
- CNA Padova (national trade association whose mission is to promote the development of artisan businesses and small and medium enterprises),
- Confapi Padova (federation of small businesses - Padova branch)
- Confartigianato Imprese Padova (trade association supporting small artisan businesses in the Padova district),
- Confindustria Veneto Est (trade association bringing together businesses in the districts of Venice, Padova, Rovigo and Treviso),
- CSV di Padova e Rovigo (organizes, manages and delivers technical, educational and informational support to Third Sector Organizations, especially Voluntary Organizations),
- EURAC (research center that addresses the greatest challenges of the future: keeping societies healthy, fostering intact environments, promoting sustainable energy and developing well-functioning political and social systems),
- Fondazione Teatro Stabile del Veneto (runs a number of theatres, including Padova's Teatro Verdi),
- Lundbeck Italia S.p.A. (company belonging to the Lundbeck Group, a leading international name in the pharmaceutical industry),
- Infocamere SCpA (IT company for Italian Chambers of Commerce supporting digital innovation),
- Interporto Padova S.p.A. (world-leading intermodal logistics centre that designs and produces logistics and transport infrastructure and services),
- Italchimica S.r.l. (company that creates innovative, sustainable and planet-friendly cleaning, disinfectant and cosmetic products designed to enhance people's quality of life),
- Net Center (office and hotel hub located in the East Padova area),
- Fondazione OIC Onlus (non-profit foundation providing help for the vulnerable),
- Padova Hall S.p.A. (company partially owned by the City Council whose business purpose is the purchase, sale, exchange, running, lease, sublease, and management of property and chattels),
- Birra Peroni S.p.A. (beer producer with a major facility in Padova)
- Poste Italiane SpA (Italian postal service) (public company operating across postal,

insurance and financial services, electronic funds transfer, telecommunications, telegraph and public connectivity services, as well as, more recently, the energy sector, bill payments, and post office savings accounts),
- Province of Padova (local body, Padova is an Italian district in the Veneto region with the biggest population in the region),
- R2M Solution S.r.l. (engineering firm specialized in integrated and multidisciplinary consulting in real estate),
- SMACT Competence Center (one of eight Industry 4.0 Competence Centers in Italy pushed through by the Ministry of Economic Development as a public-private partnership),
- University of Padova (Italian state university founded in 1222, one of the oldest in the world),
- Varisco S.r.l. (privately owned company that designs, manufactures and distributes professional pumps for industry and drainage),
- 1173 S.r.l. (startup concerned with tools for improving the efficiency of building stock).

The municipal administration assessed the level of involvement of external stakeholders as being consistent with the city's commitment and gradual objectives of the ongoing ecological transition and the Climate City Contract itself. It is clear that the next few years will bring a broadening of the range of actors involved with a view to increasing public-private engagement. Stakeholders that the administration has failed to engage at this point but which it aims to involve in subsequent editions of the document include: Veneto Region as part of the strengthening of political-regulatory relations, Telecom, NS3 and Nehos for their respective data centres, Safilo as a leading Italian company in the production and distribution of eyeglasses, sunglasses and sports glasses, Coldiretti as an association that brings together local agricultural producers, APS Holding, a company engaged in the management of car parks, the car sharing services, advertising and billposting, ATER, as Azienda Territoriale Edilizia Residenziale of the Province of Padova and finally ULSS 6 Euganea as the local health authority.

To give continuity to the Living Lab launched in 2023, six thematic tables with local stakeholders will be established (or confirmed if already existing), so as to work with continuous and synergistic action on the central themes of decarbonization. These tables cover: renewable energy communities (RECs), housing, industry, innovation hub, sustainable mobility, and food policies (with an eye on scope 3 emissions). The financial and communication-related parts will cut across all Living Lab tables, as both are necessary to ensure that the ideas and projects that emerge are implemented and well communicated.
Several units within the municipality, selected from the SECAP/CCC working group members based on the issues addressed, will be involved in the management of the thematic groups, while the Climate Resilence Manager, as described above, will be responsible for overall coordination. It is also planned to activate a web portal in which each Living Lab member stakeholder will be able to highlight their own project ideas and indicate which partners they need and what resources (human, economic-financial, logistical, etc.) are needed to implement them. This modus operandi represents an important opportunity for the entire city ecosystem to adopt a collaborative, multilevel approach, fostering communication and strategic partnerships.

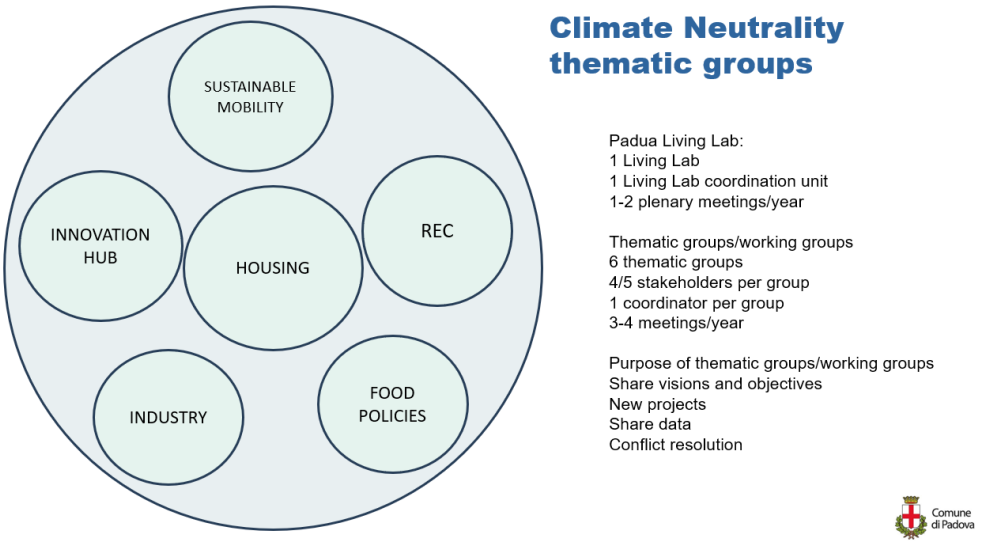

Figure C.4 – Padova Living Lab setup

Vertical governance

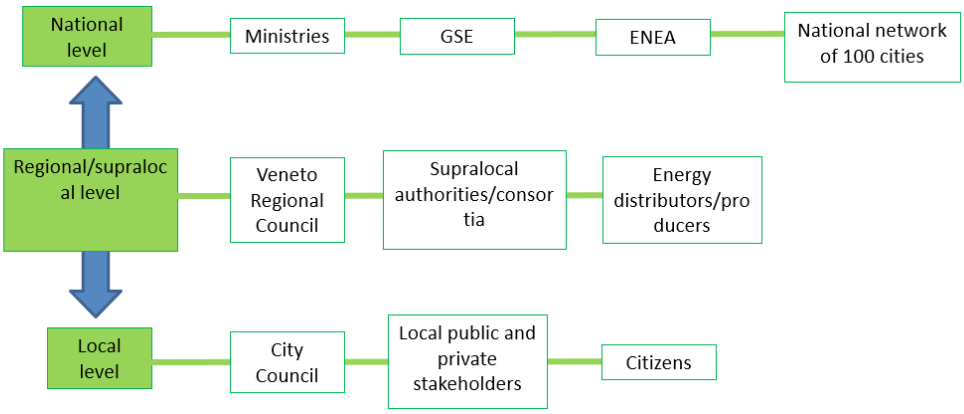

Figure C.5 – Vertical governance model

Padova Council has formed a number of **collaborations with neighbouring municipalities**, as part of the process of drawing up intermunicipal plans or sustainable urban development programmes:

- collaborations formed with the purpose of drawing up the Sustainable Urban Mobility Plan (SUMP), dealing with the 18 local governments within Padova's intermunicipal area as defined in the Co.Me.Pa. agreement,
- collaborations formed with the purpose of drawing up and implementing the Integrated Sustainable Urban Development Strategy (SISUS), which is part of the Veneto region's ERDF Regional Programme 2021/2027 for the urban area of Padova, for which Padova is the lead authority and which has been set up together with the local governments of Abano Terme, Albignasego, Maserà di Padova, Noventa Padovana, Ponte San Nicolò, Rubano, Selvazzano Dentro and Vigonza,
- collaborations with local governments that fall within the waste catchment area of Consorzio di Bacino Padova Centro (Abano Terme, Albignasego, Casalserugo, Ponte San Nicolò and Padova), formed with the purpose of organizing and programming the integrated municipal waste management service.

An important **collaboration has also been established with the Province of Padova** (as attested by the signing of a Climate Agreement) relating to the formation of a fully publicly controlled REC in the Municipality of Padova. In 2024, the District Council also published a Technical Handbook for renewable energy generation plants. This tool, compiled with due regard for current standards and best practices, is intended as a valuable planning aid for local councils across the Padova area, offering guidelines and specific instructions for the installation of photovoltaic, solar hot water and geothermal systems on residential buildings and manufacturing facilities. Targeted at professionals, citizens and, above all, local governments, the document is offered as a guide to drawing up or implementing Local Building Regulations. There is also a special focus on balancing the intense development of these systems and respect for cultural identities and the shape of the cityscape, with the goal of improving the buildings' energy performance without compromising their architectural quality.

Many synergies have also been established with the **Veneto Regional Council around the Covenant of Mayors**. Padova Council was selected by ENEA (Italian national agency for new technologies, energy and sustainable economic development) as a case study as part of an information and training programme to help other local councils in the region join and implement the Covenant of Mayors programme. Furthermore, because Padova Council is the only local government body in the region to have been selected as part of the Climate Neutral and Smart Cities Mission, it is committed to promoting the Mission, sharing the methodology adopted and the outcomes achieved with the other provincial capitals, sharing the experience it gains through training and operational support activities.

At a national level, in September 2022, the City of Padova signed a **Memorandum of Understanding with the other eight Italian Mission Cities and the Ministry for Infrastructure and Sustainable Mobility**, with the purpose of putting forward solutions, promoting cooperation and developing specific projects, identifying any additional resources to be earmarked to fund the Mission's goals, gathering and sharing best practices, and lastly, collaborating on additional projects to be carried out within the geographical boundaries of the nine Cities. A Coordination Committee and a Technical Board were also established as a result of this memorandum to pursue the Mission's goals in Italy.
Padova Council has partnered with the Mission's other eight Italian Cities to submit the Let's GOv project[47] as part of the Horizon 2020 research programme with the aim of fostering the development of new governance models towards forms based on a systemic approach that are effective in reconnecting the various actions (either under way or planned) and coordinating visions, stakeholders, processes and projects so that they are all focused on the common goal of climate neutrality (mission-driven model).
The project seeks to:

- identify the general governance barriers surrounding the issue of climate neutrality;
- identify innovative solutions that will have direct and indirect impacts on the city;
- address problems that are common to all the Italian Mission Cities (acquiring and managing data, innovative finance, stakeholder engagement), providing, by the end of the project, a series of ready-to-go solutions that can be replicated in other cities, as well as a possible extension of forms of cross-cutting collaboration and mentoring.

In addition, Padova Council **is a partner in the National Coordination of Local Agenda 21 initiatives**, a network of local bodies that share experiences related to sustainability, the Smart City and green economy.

47 https://netzerocities.eu/italys-pilot-activity-letsgov-governing-the-transition-through-pilot-actions/

Table C-1.2: Relations between governance actions and impact pathways

Intervention name	Description	Barriers/Opportunities	Stakeholders involved	Impact pathway	Foreseen co-benefits
Establishment of the Interdepartmental Task Force and the Steering Group	The Interdepartmental Task Force was set up with the remit of: coordinating the performance and monitoring of actions planned under the SECAP and the CCC; identifying the Departments' training needs; and identifying new actions to be included in the Plans.	Difficulty in engaging various different Council Departments Difficulty in working in a coordinated manner	Contact persons from Council Departments involved.	Decarbonizing a city is only possible if we work based on a holistic, cross-cutting approach. The Interdepartmental Task Force collaborates to get solutions and actions off the ground that take into consideration different factors and are the result of a diversified range of skills. The Departments are also directly responsible for their own climate neutrality efforts, thus ensuring a collective commitment across the whole Council.	The Interdepartmental Task Force is the first tangible step in boosting local synergies, which needs to happen both within the City Council and with external stakeholders. Collaboration established between colleagues from different Departments — by boosting the efficiency and quality of work at Council — will also lead to improved quality of life for citizens, who will live in a better organized city capable of ensuring a real-world transition to climate neutrality.
Establishment of Padova's Living Lab	Padova's Living Labs — set up to co-design city decarbonization plans with the main local stakeholders — will be further developed with their division into thematic areas that are most relevant to the climate neutrality ambition: sustainable mobility, industry, housing, RECs, Food Plan, Innovation Hub, sustainable finance.	Difficulty in engaging local stakeholders Resistance to change Need for public and private investments	The thematic areas of the Living Lab will be coordinated by Padova Council and will involve the main local stakeholders, starting with the signatories of the Climate City Contract. Stakeholders will be invited to take part based on their specific interests and the expertise that they can bring to specific thematic areas.	The aim of the Living Labs is to work in concert with local bodies who have roles and expertise that are relevant to the climate neutrality ambition. While set within a framework defined by the local authority, the Living Labs are designed to adopt a bottom-up approach, wherein planning is done in conjunction with stakeholders rather than solely at an institutional level.	The Living Labs are a way of collaborating actively with the local community, thus resulting in an increase in local synergies. In addition to helping Padova in its transition to climate neutrality, the Living Labs will contribute indirectly to technological competitiveness (a prime example being the LL Innovation Hub) and to enhancing the city's liveability.
Signing of the REC Manifesto and establishment of the Technical Board	The purpose of the REC Manifesto and the Technical Board is to set up one or more Renewable (and socially responsible) Energy Communities and address the following themes: renewable energy generation and self-consumption, combatting energy poverty and sustainable development	High costs of initial capital required to carry out measures Difficulty in engaging local stakeholders.	Signatories of the REC Manifesto: Padova City Council, Padova Chamber of Commerce, University of Padova, Confindustria Veneto Est, Confapi Padova, Coldiretti Padova, ASVESS, CSV di Padova e Rovigo, UPA-Confartigianato (Padova provincial artisans' union, part of Italy's artisan business	In Padova's pathway to decarbonization, the generation of renewable energy will mainly focus on solar. Setting up RECs is thus a way of driving this transition.	With the generation of renewable energy, the REC will make a tangible contribution to reducing reliance on fossil fuels. In addition, the REC, while under public governance, will be a multi-substation system and open to private individuals with scope for significant scale-up over time, helping to boost local

Table C-1.2: Relations between governance actions and impact pathways					
Intervention name	**Description**	**Barriers/Opportunities**	**Stakeholders involved**	**Impact pathway**	**Foreseen co-benefits**
	within the local context, galvanizing and informing citizens and businesses.		association), Confagricoltura, ASCOM and Padova Diocese		synergies. This action will encourage new sustainable practices and will help increase social-interaction and resource-sharing spaces.
Signing of memorandum of understanding with University of Padova	With the memorandum of understanding, Padova Council and the University of Padova seek to coordinate their actions and projects and collaborate effectively on meeting the Net Zero Cities Mission goals. Council and the University will also work together on dissemination initiatives, information campaigns, events and training projects.	Lack of technical expertise among Council personnel. Overcoming citizens' resistance to change and difficulty in achieving widespread and effective citizen engagement (Third University Mission)	Padova City Council University of Padova	The University of Padova can offer Council knowledge and expertise in a wide range of fields. The University is also a highly influential entity with the capacity to reach a broad audience of students and citizens through its educational and communication activities, another key piece in Padova's decarbonization puzzle.	The activities provided for under the memorandum of understanding will help boost the Council's expertise and hence its competitiveness, and will offer actionable solutions to overcome barriers to climate neutrality. The memorandum will also lead to engagement and greater awareness amongst the city's residents and local stakeholders, thus resulting in less resistance to change, which is often responsible for slowing transitions in cities.
Establishment of the Council of Innovation	The Council of Innovation is a permanent roundtable on innovation representing public and private stakeholders and academia.	Difficulty in engaging local stakeholders Need to bring in private investments	Council of Innovation members: Padova City Council, responsible for its coordination; University of Padova, Padova Chamber of Commerce; UniSMART; Padova Hall Spa; SMACT Competence Center, Confindustria Veneto Est, Le Village by CA Triveneto, Galileo Visionary District, Paradigma, Accenture and non-profit foundation Fondazione Fenice.	The Council of Innovation comprises local entities operating in the field of technological innovation, research and fast-tracking of startups focused on the environment and digitalization. These entities work in a concerted manner to develop projects in and around the city.	The Council of Innovation helps boost technological competitiveness and create jobs, as well as digitalize services for citizens and businesses through a number of projects.
Signing of memorandum of understanding with Wind Tre	The purpose of the memorandum of understanding is to form a working group to assess the feasibility of developing and	Need to ramp up data collection	Padova City Council Wind Tre Stakeholders interested in developing growth and training strategies	Climate neutrality and the digital transition go hand in hand, both on the Smart City front and in terms of increasing skills and the level	The activities implemented through the memorandum will help drive digitalization of services and job creation, while also increasing the

Table C-1.2: Relations between governance actions and impact pathways					
Intervention name	**Description**	**Barriers/Opportunities**	**Stakeholders involved**	**Impact pathway**	**Foreseen co-benefits**
	implementing activities/initiatives of public interest in the following fields: Smart City, Institutional Events, Education, Local Innovation Hubs.			of digitalization among local residents. This memorandum is a step in the right direction in addressing these issues.	technological competitiveness of Padova Council and local stakeholders. Events will also help promote citizen buy-in and awareness around new sustainable practices, through the very use of digital services.
Memorandum of understanding signed with Enel Distribuzione (electricity distributor)	The purpose of the memorandum of understanding is to jointly plan maintenance work on the city's electricity network. More specifically, E-Distribuzione has a significant programme of NRRP-related work planned for Padova from 2023 to 2026, for a total of around 66 million euros.	Infrastructural limitations of the electricity network to be adapted to suit widespread energy generation by small plants, to meet the electricity demand and different ways of using electricity than in the past.	The memorandum involves Padova City Council and Enel Distribuzione (electricity distributor)	A huge increase in electricity use is expected in coming years, taking over from heating energy consumption. In order to handle this transition effectively, the city's electricity network needs to be adapted and new infrastructure put in place.	Upgrading and modernizing the city's electricity grid will optimize the service offered to residents, enable end-use electrification and help digitalize the services in question. Hence, this intervention will help reduce reliance on fossil fuels, boost technological competitiveness and enhance Padova's overall liveability.
Signing of Climate Agreements with stakeholders	Climate Agreements are a key part of the Climate City Contract and represent the tangible commitment of numerous stakeholders who, by taking responsibility for implementing specific projects and activities, help Padova achieve climate neutrality.	Difficulty in engaging local stakeholders Difficulty in achieving widespread and effective citizen engagement Need to bring in private investments	The signatories of the Climate Agreements, in addition to Padova City Council, are all the entities given in section C-1.1. Padova Council is tasked with coordination and is responsible for monitoring the implementation of actions, while each signatory is responsible for the actions laid out in the Agreement.	The signing of the Climate Agreements has produced a clearer and more in-depth picture of the local context and its projects, and has fostered the creation of synergies between actors; synergies that Council plans to strengthen over coming years. The actions proposed by the stakeholders vary widely, partly due to the different nature of the various signatories. These actions, then, can concern: mitigation, adaptation, communication, training and raising awareness, research and	The actions proposed by the Agreements' signatories will enable a reduction in fossil fuel reliance, an increase in property value, enhanced air quality, a reduction in traffic congestion, greater competitiveness for businesses, a reduction in heat islands and the creation of gathering spaces. Education and communication activities will encourage new sustainable practices, while training will lead to an increase in skilled jobs. Financing actions will enable citizens and businesses to access climate neutrality funding.

Table C-1.2: Relations between governance actions and impact pathways					
Intervention name	**Description**	**Barriers/Opportunities**	**Stakeholders involved**	**Impact pathway**	**Foreseen co-benefits**
				development and financial support, with each contributing to Padova's decarbonization.	
Approval of Integrated Sustainable Urban Development Strategy (SISUS)	As part of the Veneto region's ERDF Regional Programme 2021-2027, Padova Council, as the lead authority for the urban area of Padova, has signed an Integrated Sustainable Urban Development Strategy (SISUS) with the other local governments in the area, with the following thematic goals: urban and cultural regeneration, housing inclusion, green infrastructure in urban area, digital agenda, sustainable mobility.	Need for substantial investments to produce mobility infrastructure Need to introduce new models for managing the range of mobility services Little flexibility in planning instruments to change the form and function of urban spaces Need to upgrade housing for households in fuel poverty	In addition to Padova Council in its capacity as the lead authority, the following local governments are involved as beneficiaries of funding under the ERDF Regional Programme 2021/2027: Abano Terme, Albignasego, Maserà di Padova, Noventa Padovana, Ponte San Nicolò, Rubano, Selvazzano, Vigonza. Busitalia Veneto and ATER (residential building agency) are also involved in carrying out specific sustainable mobility interventions and housing projects.	The Integrated Sustainable Urban Development Strategy brings change with real-life projects in key areas for the decarbonization of the City of Padova and neighbouring municipalities. Furthermore, the actions due to be implemented will carry so much more weight precisely because of this far-reaching approach, which includes, for example, addressing mobility in a coordinated manner with Padova's suburban municipalities.	The interventions planned under SISUS are designed to enhance air quality and the city's liveability, which will also have positive repercussions for people's health, in addition to reducing the time it takes to get around the city. It will help drive a reduction in fossil fuel reliance while increasing spaces for social interaction and mitigating heatwaves. Some projects will help drive the digitalization of services, boost technological competitiveness and increase buy-in and awareness around new sustainable practices.
Signing of Memorandum of Understanding with the other 8 Mission Cities	The purpose of the Memorandum of Understanding is to put forward innovative solutions, promote cooperation and development of specific projects, identify any additional resources to be earmarked to fund the Mission's goals, gather and share best practices, and lastly, collaborate on additional projects to be implemented within the boundaries of the nine Italian Mission Cities.	Need for substantial resources to finance the transition to climate neutrality (e.g. for energy upgrading of buildings and for sustainable mobility infrastructure)	Contact persons from the Italian Cities: Padova, Bologna, Bergamo, Florence, Milan, Parma, Prato, Rome, Turin. The Memorandum calls for the involvement of contact persons from both political and technical structures.	With the collaboration of the Italian Cities involved in the NZC Mission, we can: take action in a coordinated manner and more forcefully when dealing with the relevant Ministries, in highlighting the main barriers faced in the decarbonization of the Cities and in working together to find suitable solutions, which may also involve pilot projects and seeking funding.	The Memorandum of Understanding will help fast-track the decarbonization of the Italian NZC Mission Cities. The activities will help reduce reliance on fossil fuels, enhance the Cities' liveability and air quality, making the Cities involved more attractive and competitive in the process.

Table C-1.2: Relations between governance actions and impact pathways					
Intervention name	**Description**	**Barriers/Opportunities**	**Stakeholders involved**	**Impact pathway**	**Foreseen co-benefits**
Let's GOv project	The purpose of the Let's GOv project is to reduce GHG emissions through the exploration of new governance models. The project seeks to: identify barriers to governance on the issue of climate neutrality, common to all Italian Mission Cities; and identify innovative solutions.	Regulatory barriers to renovation work or the implementation of renewables in the old city centre that might hinder the climate neutrality process. Horizontal and vertical governance barriers	The partners in the project are the City Councils of Padova, Bologna, Bergamo, Florence, Parma, Prato, Milan, Rome and Turin, in addition to Alma Mater Studiorum (University of Bologna), AESS (Italian Energy and Sustainable Development Agency), and Polytechnic University of Turin.	Let's GOv aspires to overcome "compartmentalized thinking" with an innovative governance approach that takes into account the various stakeholders and actors involved. Each city produces a pilot project (test bed) for trialling innovative solutions to overcome obstacles to climate neutrality in the fields of collecting and handling data, innovative finance and partnership models for climate neutrality.	Through its trials, Let's GOv will help reduce reliance on fossil fuels (Padova's pilot project is the establishment of an REC), and make the cities involved better organized and more efficient, resulting in the relevant local areas becoming more attractive and competitive, and an increase in local synergies (essential in local governance) and more wide-ranging synergies (vertical governance).

8.2. Module C-2 Social innovation interventions

Table C-2.2: Social innovations for achieving climate neutrality

Innovations for achieving climate neutrality

The key to achieving climate neutrality also lies in greater engagement of the whole population, not just permanent residents but so-called city users and temporary residents, too (e.g. university students). The policies and actions proposed by the Climate City Contract must take into account the socioeconomic and cultural diversity of Padova's population, including in spatial terms. Many of the proposed measures will depend on producing in-depth **fact-finding investigations**, carried out in collaboration with the Department of Philosophy, Sociology, Education and Applied Psychology of the University of Padova (FISPPA). Some early assessments of public buy-in to renewables have already been carried out, focusing above all on Renewable Energy Communities in order to highlight what factors encourage or stand in the way of citizens' participation in an REC (Menegatto, Bobbio e Zamperini 2023) and the energy upgrading of privately owned buildings.

Additional analyses, which may also involve putting out questionnaires, will need to be devised around achieving the following specific objectives:

- conducting an in-depth analysis of the various segments of the population (permanent residents and other people living in the City of Padova), such as university students who live here but are not permanent residents, commuting workers, residents of different ethnicities, vulnerable residents such as the elderly or disabled, vulnerable families, to also include a spatial breakdown based on the characteristics of the various places (points of interest, neighbourhoods, etc.);

- developing urban psychosocial, financial and energy poverty indicators;

- monitoring indicators so that there is a fair energy transition that results in a psychosocial transition from energy hardship to energy wealth with positive effects on individual, collective and environmental health and wellbeing.

The outcomes will be the first instruments supporting decisions made to steer the local government's future actions. The in-depth analysis findings will allow us to map the urban population according to different characteristics to understand the strengths or, conversely, critical issues hindering active citizen engagement in the implementation of climate neutrality policies.

Specific investigations will also target:

- the university population, which now accounts for roughly a third of Padova's non-permanent population,
- businesses and workers in Padova's industrial area, which is one of the most nationally and internationally significant (for Europe) industrial hubs.

Additional social innovations aimed at getting citizens actively involved in the carbon neutrality mission will be devised and set out based on the findings of the fact-finding investigations. These actions will include:

- **carbon neutrality mediators/facilitators**, namely new roles — filled by professionals or other individuals — with the power to stimulate and facilitate the transition processes under way within their respective communities. The people in these roles will be trained by the University of Padova and may fall into three categories:

    - neighbourhood facilitators, who steer other citizens/residents towards good behaviour or towards making choices in line with the climate neutrality goals,

    - school facilitators, with the power to engage other students and teachers (across all categories and levels) in adopting sustainable practices and actions within the school environment and at home,

    - business facilitators, with the power to educate colleagues and managers on adopting organizational measures designed to increase the use of sustainable mobility options and aimed at reducing energy consumption and the generation of waste, etc.

  People in the carbon neutrality facilitator/mediator roles will work in synergy with mobility managers and energy managers appointed in local schools and businesses where this is a mandatory requirement. A course has been set up as part of a collaboration between Padova City Council, AcegasApsAmga S.p.A. and the University of Padova entitled "Sustainability ambassadors. Know, promote, practice sustainability". This educational programme is aimed at students taking any of the University of Padova's three-year and higher degree courses, as well as citizens, who can register for the programme as a standalone course. The course is sponsored by the Italian University Network for Sustainable Development (RUS);

- targeted **communication campaigns** that need to be developed to suit the socioeconomic, demographic and cultural makeup of the various segments of the population living in the city, in order to pull the right levers and use the language and communication tools best suited to each geographical and residential context (digital communication vs traditional communication, etc.). During the preparation of the Climate City Contract, an initial communication campaign was launched, providing a platform for people to put forward proposals for actions aimed at reducing GHG emissions either on their own behalf or on behalf of a group (body, association, etc.). Communication campaigns must be devised to find new ways to overcome NIMBYism and the general resistance to the introduction of new construction sites around the city, which will inevitably become a feature of the cityscape for the next few years (early construction sites can already be seen due to work on the tram lines, "Bicipolitana" cycling network, and a number of urban redevelopment and building stock upgrade projects). Getting citizens on board with seeing construction sites everywhere will inevitably entail clear communication of the outcomes the project plans to achieve, presenting any transformation project as part of the bigger climate neutrality picture. In this sense, we need to think about developing consistent coordinated imagery that the public immediately associates with the Mission, while also providing people with the opportunity to report any inconvenience by scanning QR codes included on site signage. The next communication campaign will be up and running by Autumn 2024 and will be relaunched yearly through to 2030:

Figure C.6 – "Padova2030" communication campaign

- **nudging actions** that urge citizens to break with their old, entrenched ways (ones that are harmful to the environment) and introduce good behaviours in terms of how people move (nudge towards sustainable mobility solutions), how they manage municipal solid waste, and encouraging green purchasing (including signing up with clean electricity providers). These actions will be defined following the fact-finding investigations and in synergy with the various local actors who have signed Climate Agreements and who can offer "bonuses" for citizens to spend in businesses in and around the city or use on services (e.g. use of vehicle sharing services or LPT);

- **experiential pathways** that prompt citizens to change their behaviour and support carbon neutrality, experiencing individual and collective advantages first hand through the direct use of new technologies or use of new services. The aim of these pathways is to encourage buy-in to the new solutions proposed, helping people understand their benefits and purpose, making them easy to utilize, increasing their appeal and making new lifestyles and habits attractive. This is particularly true for new digital technologies, with a large portion of the city's residents potentially left out when it comes to their use. The University of Padova, through its Department of Philosophy, Sociology, Education and Applied Psychology (FISPPA), will produce an initial pilot project with students on the university campus on Via Venezia, to assess their carbon footprint and test solutions to reduce it. The findings will be useful for scaling up the pilot trial to citizens in general. These experiential pathways may also be implemented in conjunction with nudging actions. A second pilot project entitled “Preparing for the city of the future: toward a climate-neutral Padova” will start in Fall 2024 under the technical and scientific responsibility of Prof. Adriano Zamperini and Dr. Marialuisa Menegatto of the University of Padova. The project presents an innovative approach as it conceives the energy transition and climate change management not only a matter of governments and institutions but objectives that can be pursued through co-design and involvement of civil society in its different forms, broadening the dimensions of democratic participation. Action toward community inclusion and well-being (empowerment) is thus enhanced through an active and proactive role of citizens. In this way, action will be taken in a multilevel, interconnected and cross-cutting manner, as is characteristic of sociotechnical systems, here paying special attention to the broad and diverse group of components of the “socio” subsystem (i.e., the human side of sociotechnical systems). The activities will take place with organizational collaboration between the City of Padova and the University of Padova and will involve the active participation of specific segments of the urban population of the city of Padova. It is planned to organize parallel Thematic Tables for homogeneous groups of social categories of residents or inhabitants of the Arcella

neighborhood of Padova (parents, the elderly, university students living in the neighborhood, immigrants, members of Catholic associations, commuter workers, etc.). The tables will be a place for sharing, discussion, and active participation of the local network committed toward the climate-neutral future city. With the informed consent of the participants, the work of the tables will be videotaped to be edited into short videos (duration about 3') and then disseminated to the general public, locally and also nationally, through a “Padova Net Zero City Visual Notice Board” uploaded on FISPPA and City of Padova websites and social channels;

- **forms of incentive** for less well-off families, to encourage conversion of the private vehicle fleet to electric, to encourage the undertaking of energy upgrade work on housing and to promote sustainable mobility solutions as an alternative to cars, by issuing bonuses that can be spent on the city's vehicle sharing systems or for the use of local public transport. Building upgrade work will be encouraged by Padova's One-Stop Shop, which will introduce a community and support approach to help energy-poor families, making work more affordable by sharing the risk with business operators and other users in the community. Additional financial benefits will result from the forms of incentive provided for as part of the Renewable (and socially responsible) Energy Communities, which will be championed and created by Padova City Council, together with other local stakeholders. EV incentives are planned to supplement schemes already being put in place by regional and national governments, and incentives may also be issued by local financial service providers who have signed Climate Agreements, who will offer financial products specifically for this purpose.

Another issue on which the City Council and various stakeholders in Padova are focusing and which involves several activities that complement each other is that of food, in relation to which a number of projects are underway or in the planning stage under the leadership of various stakeholders in the city.
In July 2023, an internal working group was established within the City Council with the task of dealing with local food policies, specifically:

- promote food sustainability in terms of emission impact and biodiversity protection;
- promote the development of an urban agroecological system;
- fighting food waste and reducing packaging consumption;
- ensure access to healthy food and clean water for all;
- promote education on healthy and sustainable food;
- foster short supply chains and local markets.

In line with these objectives, two studies have been carried out, one on local experiences in containing food waste (University of Padova, Department of Political Science), the other on urban metabolism and the impact in terms of emissions of school canteens in Padova (ARUP). There are also a number of activities that have been underway for many years that are functional to a greater management and culture of food in Padova (including the Re.T.E. Solid.A project promoted by Acli Padova and included in the portfolio, thanks to which, starting in 2012, circuits have been created for the sustainable recovery and reuse of food surpluses, for the benefit of disadvantaged people, with the collaboration of a vast network of charities in the area).
One development that Acli and the City of Padova are working on, characterized by a social innovation component, involves the direct involvement of families in the distribution to vulnerable people of food saved from school canteen waste. The idea is to combine the goal of reducing waste (which undoubtedly has an impact in terms of emissions) with the social function of fighting loneliness, educating people about the value of food and bringing together components of society

that, without the right opportunity, might never cross paths.

Other projects are also being launched on the theme of food, reported below:

- Regenerated Urban Agricultural Soils - RUAS project, funded by the Horizon program on the theme of soil health (City of Padova),
- AgrifPD project for the co-definition and co-design of innovative solutions aimed at putting the role of agriculture and its functioning back at the center with a view to food and environmental sustainability (Etifor),
- PNRR-funded Making Food Democracy project analyzing food policies in Padova and Trento aimed at defining a Padova Food Policy (University of Padova).

Other elements of social innovation, are:

- the use of participatory budgeting for the benefit of the neighborhood councils, totaling €300,000 per year, which members of the councils can spend as they see fit to finance projects and activities in their target areas. This tool has existed for years, but the involvement of the Councils in the Padova 2030 pathway has made them aware of their potential active role, both in terms of involving the population and in financing projects and events on environmental issues. Thanks to participatory budgeting, each Council has, in fact, the opportunity to cast the issue of decarbonization in its own urban context, understanding the dynamics of its area of interest and trying to act in favor of the neighborhood. An example that emerged during the meetings with the Councils is the possibility of financing Thermo tours (funded by the City of Winter 2023-2024 as a service of its Energy Desk), that is, synthetic energy diagnoses at houses and apartments, so that citizens can be provided with free advice useful to know the state of consumption of their homes and the main interventions that can be carried out to improve their energy performance;
- involvement of the population in financing decarbonization projects, with the dual result of having both an economic return and the satisfaction of having acted in favor of their city. An example is the Super-Heero project (concluded), which activated a crowdfunding system to redevelop a supermarket in Padova, and the RES Padova project (in the start-up phase), which again wants to involve the population, but this time to finance the redevelopment of sports centers;
- economic support to families in poverty through subsidies provided by the Social Services Sector of the Municipality of Padova to meet the payment of energy bills, this because of the growing weight of the energy component on the family budget and the importance of ensuring adequate levels of comfort for families who otherwise could not afford it;
- the “Bando Impatto +” by Banca Etica (a signatory of a Climate Accord) and Etica Sgr, in collaboration with Produzioni dal Basso, entitled Ethical Energy for Communities and Territories1 to crowdfund projects aimed at the renovation, regeneration and new energy efficiency interventions (including the installation of photovoltaic panels) of instrumental buildings of entities and organizations of the Third Sector and farms with organic certification.

With regard to the support of the public at large and the activation of social innovation measures, forms of local incentives offered by non-financial actors play an important role. The main role in this sphere is played by the local administration, which, starting from 2023, through the signing of the “Padova 2030” Manifesto of Renewable and Solidarity Energy Communities and the establishment of a PADOVA REC 2030 technical working group, is promoting processes that facilitate the establishment of new RECs both at a private level and in the city's industrial area.
An important role in this area is played by the Padova Energy Help Desk, a free service available to

all city residents, inaugurated in February 2021 to offer information and technical advice on the reduction of energy consumption, building upgrades, tax incentives, and bureaucratic procedures with respect to building and urban planning practices. The desk was created as part of the Padova FIT Expanded European project, which concluded in 2022, whose aim was to create and pilot a One Stop Shop service to directly connect supply and demand by providing citizens with information, technical, legal and financial assistance, as well as contractual and decision-making tools for the implementation and monitoring of energy-saving measures.
Funding for the Energy Desk continued even after the European project ended and is expected to be maintained until 2030 by contracting its operational management out to third parties. The cost to the municipality reported refers to the investment incurred from 2021 to the present.
To promote the intermodality of local public transport with other soft mobility solutions, Busitalia, an investee of the city, is promoting a discount of €10 per month for all its pass holders who use bicycle and scooter shared mobility services offered by the operators participating in the initiative, i.e. Ridemovii, Dott and Bit. The initiative is financed with resources from the National Fund for Public Transport allocated to the Veneto Region, and is valid until 30 June 2025 or until the available funds are exhausted. The cost reported refers to the three-year funding of the initiative.
As part of the dissemination of separate waste collection and eco-sustainable practices in private households, the municipality allows and encourages home composting of organic waste through a 30% reduction in the variable portion of the TARI.2 Composting is a natural process that transforms plant waste and the wet fraction of waste into compost, to be used as fertiliser for flowers and vegetables. To benefit from the reduction, the taxpayer must sign a special form and submit it to the city's Environment Department.

Table C-2.2 Relations between social innovations and impact pathways

Intervention name	Description	Barriers/opportunities	Stakeholders involved	Impact pathway	Foreseen co-benefits
Conducting of fact-finding investigations	The purpose of the investigations is to form a picture of the socioeconomic and cultural makeup of the City of Padova's residents, including in spatial terms (by neighbourhood). Urban psychosocial, financial and energy poverty indicators will also be developed, and these will be monitored to determine whether the transition under way is fair.	Difficulty in reaching citizens effectively and across the board Difficulty in engaging local stakeholders, Resistance to change.	University of Padova, more specifically its Department of Philosophy, Sociology, Education and Applied Psychology (FISPPA). Padova City Council	The in-depth analysis findings will allow us to map the urban population according to different characteristics to understand the strengths or, conversely, critical issues hindering active citizen engagement in the implementation of climate neutrality policies.	The analyses carried out by the University of Padova will allow us to have a good overview of the whole area in socioeconomic and cultural terms, and will help the local government execute targeted actions allowing for the diversity of the area within its boundary. The investigations will thus help manage the transition with innovative models and, thanks to actions tailored to the requirements of different segments of the population, will engage citizens and raise their awareness around sustainable practices, helping overcome the resistance to change that is often commonplace among the city's residents.
Launch of communication campaigns	Communication campaigns will be produced yearly to inform the public about Padova's path to climate neutrality, using different means and language to suit the intended target audience.	Difficulty in reaching citizens effectively and across the board Resistance to change	All stakeholders who have signed Climate Agreements will be involved given that the change will require a collective effort, which will be explained and notified to Padova's residents.	Over coming years, Padova will undergo a makeover on many fronts: much of the infrastructure will be modernized or created from scratch, and there will be construction sites dotted around the city. At the same time, efforts will be made to influence citizens' behaviours and habits, in line with the climate neutral goal. Communication campaigns will be conducted for this very reason, to explain the changes being made, and will be essential for citizen buy-in.	Communication campaigns will help overcome the general resistance to change, thanks to increased awareness and greater citizen engagement, also helping to raise residents' awareness around sustainable practices.
Appointment of carbon neutrality facilitators/mediators	These mediators, trained by the University of Padova, will be tasked with stimulating and facilitating the transition processes under way within their respective communities. They will mainly operate in neighbourhoods, schools and businesses.	Difficulty in reaching citizens effectively and across the board Resistance to change	University of Padova, AcegasApsAmga S.p.A., Neighbourhood consultations, Teachers in schools, Mobility managers in businesses and schools, Energy managers in businesses.	Mediators/facilitators will be part of an awareness and engagement pathway required to get as many local stakeholders involved as possible, whether they be citizens or entities such as schools and businesses. The whole local community must be engaged in a concerted effort to achieve climate neutrality.	Through their work in neighbourhoods, in local business facilities and in schools (to start with), the facilitators/mediators will help build a sense of environmental responsibility, overcome general resistance to change, and foster citizen awareness around sustainable practices. Facilitators/mediators are thus one way to overcome the difficulty in reaching citizens effectively and across the board.

Table C-2.2 Relations between social innovations and impact pathways

Intervention name	Description	Barriers/opportunities	Stakeholders involved	Impact pathway	Foreseen co-benefits
Nudging systems to be put in place	Special nudging systems will be implemented to give citizens a gentle push to break with their old, entrenched ways (ones that are harmful to the environment) and introduce good behaviours in terms of how people move (nudge towards sustainable mobility solutions).	Difficulty in reaching citizens effectively and across the board Resistance to change	All signatories of Climate Agreements, Padova's local business owners, especially those who can offer "bonuses" for citizens to spend, entities that can offer services, such as vehicle sharing or local public transport.	The nudging systems — which will be defined in detail following relevant fact-finding investigations — will be implemented, above all, in the management of municipal solid waste, in encouraging green purchasing (including signing up with clean electricity providers) and in sustainable mobility solutions.	Nudging — which is seen as a gentle push rather than an order — will help overcome resistance to change and raise local awareness around sustainable practices.
Implementation of experiential pathways	Experiential pathways are designed to encourage buy-in to the proposed solutions, helping people understand their benefits and purpose, making them easy to utilize, increasing their appeal and making new lifestyles and habits attractive.	Difficulty in reaching citizens effectively and across the board Resistance to change	University of Padova, more specifically its Department of Philosophy, Sociology, Education and Applied Psychology (FISPPA). Padova City Council	Experiential pathways are an additional way to get citizens engaged, familiar with and excited about the new solutions developed for decarbonization.	Experiential pathways — put together by drawing on the expertise of the University of Padova — will help overcome resistance to change and raise local awareness around sustainable practices.
Definition of incentive schemes for vulnerable families	Incentives will take different forms and will focus on encouraging: conversion of the private vehicle fleet to electric; undertaking of energy upgrade work on public housing; and the promotion of sustainable mobility solutions as an alternative to cars.	Need for substantial funding Resistance to change	Banks who have signed Climate Agreements, Busitalia Veneto, City-owned companies.	Possible incentives include: bonuses that can be spent on the city's vehicle sharing systems or for the use of local public transport; priority support offered by the One-Stop Shop in the building upgrade field; incentives around Renewable (and socially responsible) Energy Communities; and financial incentives for the purchase of EVs.	Incentives will be designed to support vulnerable families above all. This intervention will also help ensure that no segment of the population is left out of Padova's transition to climate neutrality.
Participatory budgeting for Padova 2030	Members of the councils may decide to use part of the budget made available to them for decarbonization projects	Difficulty in reaching citizens effectively and extensively Resistance to change	Neighborhood councils	The actions that can be promoted and financed by the councils through the Participatory Budget are very varied, but they will be mainly geared toward informing and raising awareness among the citizenry.	The direct action of the Councils ensures greater effectiveness and capillarity to communication and dissemination actions. In addition, the Councils more easily ensure reaching target populations that tend to be more difficult to engage (e.g., the elderly). The ability to directly choose how to spend part of the municipal budget increases the population's sense of participation and makes citizens more active and responsible.

Table C-2.2 Relations between social innovations and impact pathways					
Intervention name	**Description**	**Barriers/opportunities**	**Stakeholders involved**	**Impact pathway**	**Foreseen co-benefits**
Crowdfunding/ RES Padova project	A crowdfunding fundraiser will be activated to finance energy upgrading works in sports centers	Need to identify innovative financial instruments	Padova sports centers	This social innovation measure is aimed at increasing energy production from renewable sources and promoting electric mobility.	The involvement of sports center members in financing photovoltaic systems and electric vehicle charging stations also has an information and awareness-raising function and will stimulate similar investments in private individuals. In addition, the model will create communities that can generate community benefits.
“Impact + call” entitled Ethical energy for communities and territories	Crowdfunding co-financing of projects aimed at renovation, regeneration and new energy efficiency upgrades (including installation of photovoltaic panels) of instrumental buildings of Third Sector entities and organizations and farms with organic certification	Need to identify innovative financial instruments	Banca Etica Etica Sgr Produzioni dal basso	This project supports energy efficiency and renewable energy production interventions in buildings of Third Sector Entities and organic farms.	Through the funding of these interventions, the objectives and activities carried out by Third Sector Entities that play a key role in ensuring that the energy transition is equitable and inclusive are indirectly supported.

9 Outlook and next steps

Final table – Plan for CCC monitoring and next CCC iteration

The strategy defined in the Climate City Contract maps out a well-defined pathway to climate neutrality for Padova.
The origins of this pathway can be traced back a long way, with the first planning initiative in the energy field dating back to 1999, while its focus on the future is marked by increasing ambition.
It is clear from the Plan how reaching climate neutrality entails a profound change, both in terms of new projects and synergies between various local stakeholders, and in terms of letting go of habits and behaviours that are incompatible with a climate-neutral city.
It is also clear how climate neutrality requires action across multiple areas, all of which are essential but none of which, on its own, is enough to change the city's fortunes.
So, in order to achieve the forecast outcome, a strong commitment is required from the city, by which we mean both the local government and all stakeholders and citizens alike, so as to produce a concerted effort with action focused on a number of different fields.
In the coming years, it will be essential to develop all the actions described in the Plan, starting with the strategic actions — part of which is already under way, while part is waiting to be implemented — forming the key pieces to complete the climate neutrality puzzle.
Residential, commercial, institutional and industrial building upgrades, sustainable mobility, end-use electrification, district heating, urban green spaces, improvement in waste collection, citizen and business communication and engagement: these are the keywords of Padova's decarbonization and, in the coming years, they will need to be the cornerstones of the City Council's actions and projects, as well as those of various other local stakeholders (starting with the signatories of the Climate Agreements) and the people of the city. A key factor in the implementation of this vision, and one that cuts across all these themes, is the city's digitalization, both on the Smart City front and in terms of the digital transition of local businesses and other entities. Technology and digital innovation are stepping stones to climate neutrality, and a way of helping the city achieve its 2030 climate goal more quickly and more effectively.
Innovation, though, does not stop at technology, instead extending to the social, too. The pathway described in the Climate City Contract outlines a process of change based on strategies and ideas that lead to Padova's economic and social development, taking into account the local community's inherent diversity and with particular regard for vulnerable segments of the population.
To ensure climate neutrality themes are being addressed, thematic working groups will be formed (or confirmed where they already exist) with local stakeholders, thus delivering ongoing, synergistic action on key decarbonization themes. These working groups cover: renewable energy communities (RECs), housing, industry, Innovation Hub, sustainable mobility and food policies (taking into account the emissions under scope 3).
Achieving climate neutrality and overcoming certain barriers that are hindering the ambition to date cannot be done without the contribution of bodies and institutions at a regional, governmental and European level, which is why Padova plans (where possible, in conjunction with the other Italian and European NZC Mission Cities) to involve these entities in its path to decarbonization. The higher-level institutions will be engaged to support Padova in removing regulatory barriers, in providing financial backing, and in encouraging sustainable local policies.
Lastly, the most important stakeholders of all, the ones for whom, and with whom, we want to reach climate neutrality: the people of Padova City. The change that Padova proposes to bring about is radical and the public needs to be aware of and involved in the efforts being made.
The city's residents are and will be key players in the Padova 2030 pathway; they will be informed, made aware and sometimes made accountable; they will be the users of new services and

innovative models for the city's transition, because, bottom line, the Padova of 2030 is the city belonging to the people who live there, and who will live there in the future, and its citizens are the real leading players in this ambitious path to a climate-neutral city.

The Monitoring Plan will be organized on two levels:

- the territory's emission budget (i.e., the update of module A-1) will be monitored on an annual basis, involving all stakeholders who, at all scales, have the necessary data (from energy distributors to statistical data holders);
- portfolio actions (module B-2) will be monitored biannually through the involvement of all stakeholders who have signed Climate Agreements;
- some key actions (the strategic ones), on the other hand, will be monitored annually, in the manner outlined in Form B-3, allowing the Administration to continuously assess the area's transformation trend and, if necessary, allowing for corrective feedback.

Annual monitoring will allow to assess trends in a timely manner and, if necessary, to plan new reinforcing measures in cases where the trend is not sufficient to ensure that the initially planned targets are met. In such cases, new partners will be identified with whom to sign climate agreements and with or through whom to implement new actions on the ground.
Work with stakeholders and CCC signatories will be managed within the Living Lab and structured by topic areas. The Living Lab will be tasked with identifying existing barriers that prevent the full implementation of certain measures and devising new actions (including through applications to regional, national and European calls for proposals) that can facilitate the achievement of the planned objectives.

An important first evaluation step will be at the end of 2026/beginning of 2027, as the current mayor's term of office draws to a close and all investments made under the NRP are expected to be completed.
The first two years of the plan’s implementation (2025-2026) will see the completion of works on the tramways and the “Bicipolitana” bikelanes and the start of the first pilot projects of the One Stop Shop. Communication and local involvement activities will get into full swing, prompting each member of the local community to contribute, even with small actions, to achieving the climate neutral goal.
Some trends already in place, such as the spread of new photovoltaic systems and the electrification of vehicle fleet and thermal heating systems, will be further accelerated through the provision of incentives and appropriate information campaigns. First assessments on the development of district heating will be developed and first pilot projects will be carried out, starting with areas with the greatest potential.
The mid-term evaluation at the end of 2026/beginning of 2027 will be crucial in assessing the effectiveness of the strategic actions identified in the document and will further allow new technologies not yet mature enough to be considered as good options for the climate neutrality.

10 Annexes

Table Annex.1 - Building sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Buildings	Upgrade of company facility on "Corso Stati Uniti"	AcegasApsAmga	Renovation and upgrading of the existing facility, including the installation of a CHP plant with distribution network serving the buildings that are part of the Corso Stati Uniti site in Padova
Buildings	Building and building services work on public and private buildings	AcegasApsAmga	Energy upgrading of public and private buildings (apartment buildings); the work involves the installation of photovoltaic panels on schools and public and private buildings for renewable electricity generation, and improving the energy efficiency of buildings (public and private) by replacing heating/cooling systems and improving thermal insulation. This includes upgrade work on ATER buildings
Buildings	Rationalizing and improving the efficiency of the water distribution and wastewater treatment system	AcegasApsAmga	Energy efficiency improvement work on industrial drinking water pumping and wastewater treatment plants, and reduction of water leaks, achieved partly with the aid of remote technology
Buildings	Solar PV electricity generation on landfill	AcegasApsAmga	Installation of a 32MW solar farm on the "Roncajette" landfill to make use of green spaces
Buildings	Solar PV electricity generation	AcegasApsAmga	Installation of solar PV system on building G, formerly known as "Gallo Legnami", on the Corso Stati Uniti site in Padova as part of the company facility upgrade project
Buildings	Memorandum of understanding	Enel Distribuzione (electricity distributor)	Joint planning of work on the city's electricity grid for all design and permit-related aspects. More specifically, the work entails: two new primary substations; upgrading 168 secondary substations; and boosting the capacity of over 120 km of medium- and low-voltage lines to make more power available to residents
Buildings	Solar PV plant electricity generation and storage	Interporto Padova	668kWp solar PV plant electricity generation and optimized storage of electricity not used straight away in handling activities. 1.5 MWh storage batteries to reduce the amount of power drawn from the Enel grid to meet gantry crane demands.
Buildings	Replacement of plastic moulding machine inventory	Italchimica SRL	Replacement of 5 plastic extrusion blowing lines with all-electric machines
Buildings	Improving compressor efficiency	Lundbeck	Demolition of existing compressors and installation of new highly energy efficient inverter units so as to improve the efficiency of the compressed air production process and its distribution within the facility
Buildings	New -20° chiller	Lundbeck	The current ammonia chiller is due to be replaced with a unit offering a better COP to reduce energy consumption for the same machine performance. The new unit will still use R717 (ammonia) as the refrigerant, with a negligeable GWP rating
Buildings	Distributed heating of 250° heat transfer oil	Lundbeck	The aim of this project is to relocate the thermal oil heating system to the individual departments where the oil is mainly used, thus creating purpose-built islands; this will mean that only the department with demand for this thermal fluid needs to be switched on. Thus, the project involves the installation of 3 hot oil skids
Buildings	Compressor heat recovery	Lundbeck	Installation of a system exploiting heat recovered from the new compressors (already featuring heat exchangers) with the creation of a domestic hot water circuit. This circuit will supply the existing facilities currently served by the domestic-grade boiler (changing rooms) or convection heater (workshop heating)
Buildings	Relamping of facility	Lundbeck	The areas involved will be: outside areas, R02 production department (ATEX zone), warehouse and workshop. A lighting engineering study is planned to assess the need (if any) to add or remove light fixtures to meet the conditions required by the workplace.
Buildings	HVAC department R05 revamp	Lundbeck	Hardware/software upgrade of control and monitoring systems for HVAC serving department R05 to optimize power consumption of (inherently energy-intensive) equipment

Table Annex.1 - Building sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Buildings	Group to sign up to Science-Based Target	Varisco SRL	The Group has set targets to be reached by the 2030 deadline (calculated with 2019 baseline); more specifically, CO_2 emitted in areas 1 & 2 (energy and vehicles) is to be reduced by 46%
Buildings	"RES Padova" project	Padova City Council	The purpose of the "RES Padova" (Renewable Energy in Sport centers in Padova) project is to trial innovative finance solutions for the implementation of climate-mitigation measures in sports centres across the Padova region.
Buildings	Heating system upgrades	Padova City Council	Upgrade of heating plant in the Palazzo Moroni building and relevant subplants; Upgrade of heating plants in Rodari primary school and Donatello secondary school; Upgrade of heating systems in municipal buildings used for schools and sports facilities
Buildings	Improving the energy efficiency of sports facilities	Padova City Council	Energy retrofit of city sports facilities: gyms Palestra Ca'Rasi, Palestra Gozzano, Palestra Piazza Azzurri d'Italia, and Palestra Raciti; Energy retrofit of changing room facilities at Luisari football grounds; Energy retrofit of Via Dorighello tension fabric building; Energy retrofit of city sports facilities and new lighting; Energy retrofit of lighting in city sport facilities 2023/092
Buildings	Improving the energy efficiency of Service centres - post houses	Padova City Council	Service centres - Post houses: Refurbishment, including energy efficiency improvement work, of buildings known as "Ex Gabelli" and "Casetta Eremitano"
Buildings	Energy efficiency improvement and refurbishment of public housing	Padova City Council	Upgrading of various buildings used for public housing located within the city boundary for energy-improvement purposes, with work to replace doors and windows and repairs involving refurbishment of the building envelope and systems
Buildings	Upgrade of Teatro Maddalene theatre	Padova City Council	Upgrade and energy efficiency improvement work on HVAC system — eco-efficiency and energy consumption reducing measures
Buildings	Improving the energy efficiency of A.Briosco school building	Padova City Council	Earthquake strengthening and energy efficiency improvement work on the "A. Briosco" school building located at 11 Via Lippi
Buildings	Combined heat and power and district heating within the municipal area	Padova City Council	Promotion and deployment of CHP and district heating in some areas within the city boundary
Buildings	Support with setting up energy communities within the municipal area	Padova City Council	Support with setting up energy communities within the municipal area through the Let's GOv project and formation of Padova's first public REC
Buildings	Door and window replacement	University of Padova	The action involves carrying out work to replace doors and windows in various buildings across the University with latest generation low-E doors and windows. The goal is to have doors and windows with a U-value of less than 1.30 W/m2K, the maximum limit for climate zone E, to be eligible for incentives under Italy's "Conto Termico" scheme (legal limit 1.40 W/m2K).
Buildings	Thermally insulating roofs	University of Padova	The action involves carrying out work to insulate roofs, which are mostly flat, on the various University buildings.
Buildings	Replacing light fixtures	University of Padova	The action involves improving the efficiency of interior and exterior lighting systems of the various University buildings by replacing light fixtures with LED lighting.
Buildings	Replacing UPS units	University of Padova	The action involves replacing building UPS units or UPSs serving research labs, which are normally operating 24/7, with high-efficiency models, and at the same time adapting the electricity distribution systems, resulting in a roughly 5% reduction in its consumption.

Table Annex.1 - Building sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Buildings	Optimizing lecture hall HVAC	University of Padova	The action involves various measures aimed at optimizing the way the lecture halls' HVAC systems and Air Handling Units (AHUs) are run.
Buildings	Optimizing data centres	University of Padova	The action calls for the University's IT department (ASIT) to take control of the process of rationalizing the numerous data centres located in various University buildings, helping reduce the energy demand for powering and cooling the computer systems.
Buildings	Additional upgrade of cooling systems (updated from the SECAP)	University of Padova	The action involves an additional process to upgrade the University of Padova's cooling systems. Starting with the large plants and working down towards the individual split units, there is currently a progressive roll-out of highly energy efficient systems — where possible using refrigerants with a low GWP rating — to replace existing obsolete units, steering decisions towards the use of heat pumps and, where possible, integrating them with geothermal systems.
Buildings	Additional upgrade of heating systems (updated from the SECAP)	University of Padova	The action involves finishing the task of replacing heating systems with condensing boilers; upgrading subplants by replacing distribution pumps with inverter models; redesigning distribution lines and installing remote management systems to optimize production rates based on climatic conditions outside and actual demand. Where possible, condensing systems will be integrated with ground-source water-to-water heat pump systems.
Buildings	Energy upgrade of commercial businesses	APPE	The initiative involves giving commercial businesses the opportunity to replace the doors and windows on their business premises with low-E alternatives
Buildings	HVAC systems in commercial premises	APPE	The initiative involves giving commercial businesses the opportunity to replace HVAC equipment currently in use (methane gas-fired heating, and air-conditioning system) with more environmentally friendly options, such as high-efficiency heat pumps
Buildings	Replacement of doors and windows and fan coil units	Infocamere	Replacement of all office doors and windows and fan coil units for the Padova branch. A total of 305 doors and windows and 360 fan coil units are due to be replaced. The building is expected to go up two energy performance ratings (from class E to class C) as a result of the project.
Buildings	Replacement of precision cooling systems	Infocamere	We plan to replace the Data Centre cooling equipment. At the moment, we still have 12 old-generation precision cooling systems due to be progressively replaced by the first half of 2026
Buildings	LED lighting replacement	Infocamere	The Padova branch's lighting system is due to be modernized by 2030 with new LED lighting. A total of approximately 950 new LED lights.
Buildings	Installation of photovoltaic system	Raccanello	80kWp PV system at the Padova manufacturing facility in order to reduce the amount of electricity purchased from third parties
Buildings	Installation of heating and cooling system	Raccanello	Gas-fuelled system to be replaced with high-efficiency heat pump system. The energy required to power it is certified
Buildings	Financial products for renovation of building stock	Banca Patavina	Innovative mortgage offering for efficiency improvement work on private buildings. The amount refers to the total ceiling value of the initiative
Buildings	Financial loan products for installing photovoltaic systems	Banca Patavina	Innovative mortgage offering for private individuals for the installation of PV systems. The amount refers to the total ceiling value of the initiative
Buildings	New air supply for tower silo— powder feeding	Peroni	Reduction in pressure drop from the main manifold to the air users with a DN150 bypass. New buffer tank. Feed times reduced from 8 minutes to 3 minutes with powder metering in the grain buffer

Table Annex.1 - Building sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Buildings	Heat recovery from ZIP industrial area	Peroni	Potential projects for recovering heat from other manufacturers in Padova's industrial area that is currently vented to the atmosphere because it is surplus to their processes
Buildings	Steam generator dynamic setpoint	Peroni	Adjustment of steam generator operation to optimize the process and send the resulting steam around the facility distribution system
Buildings	Photovoltaic system on premises	Banca Etica	The installed capacity is approx. 50 kW, with an estimated annual output of 60,000 kWh
Buildings	Formation of RECs	Banca Etica	Banca Etica is ready to work with Padova Council on setting up one or more Renewable Energy Communities, getting involved in both their installation and their financing with products specifically for this purpose.
Buildings	Decarbonization of Corso Stati Uniti buildings	Padova Hall	Energy upgrade work on heating, air-conditioning and mechanical ventilation systems for the Corso Stati Uniti office complex
Buildings	Decarbonization of business centre	Padova Hall	Energy upgrade work on heating, air-conditioning and mechanical ventilation systems for number 6 Passaggio Saggin located in the La Cittadella business centre.
Buildings	New headquarters	Cherry Bank	By 2026, the bank's headquarters are due to move to new premises, with construction due to start by the end of this year. The building will have a solar PV system that will be designed to meet approximately 60% of the building's energy needs.
Buildings	Residential REC	Net Center	The REC has been up and running since May 2024 following the upgrade of buildings and infrastructure. Supply of 100% green power and installation of PV solar panels totalling 827 kW
Buildings	Stage equipment technical upgrade	Teatro Stabile Veneto	Stage lighting and stage spotlights to be changed from halogen to LED
Buildings	Energy efficiency improvement work on S.Chiara residence	Fondazione OIC	Improving energy efficiency by cladding walls, installing external wall insulation and replacing doors and windows. Installation of 200kW PV solar system
Buildings	Deployment of PV solar systems on rooftops and car parks	Fondazione OIC	Development of a series of PV solar self-consumption systems on rooftops and car parks for a total of 1200 kWp
Buildings	Low-enthalpy ground-source systems	Fondazione OIC	Installation of a field of low-enthalpy (15-20 °C) geothermal sensors, at a depth of 100-150 m, laid out under the complex's grounds, for heat pumps providing high-efficiency summer air-conditioning and winter heating
Buildings	Establishment of REC	Fondazione OIC	Installation of rooftop PV solar systems on public and private buildings generating electricity for self-consumption and for REC supporters
Buildings	"Carbon Neutral Padova" sorting centre	Poste Italiane	Main measures: - installation of a PV solar system; - replacing gas-fired boilers with the installation of ground-source heat pump systems; - updating the Building Management System (BMS); - replacing current light fixtures with LED lighting (950 units); - work on the building envelope;

Table Annex.1 - Building sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Buildings	Smart Building - Environmental monitoring	Poste Italiane	Installation of a single Building and Energy Management System designed for the integrated and structured control and monitoring of all buildings involved in the project. Installations include data logging of energy measurements and environmental values (temperature, humidity, lighting levels, CO_2).
Buildings	Internally governed REC	ASCOM	This project involves working in collaboration with an energy provider partner to define an energy community, engaging the municipalities within the district and member companies

Table Annex.2 - Transport sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Transport	Electric waste collection fleet	AcegasApsAmga	Replacing waste collection and street sweeping vehicles with electric units (both the motor driving the vehicle and motor powering equipment) and relevant charging infrastructure. The project provides for the following vehicles: 12 wheelie bin trucks with tippers (€65k/each); 6 small street sweepers (€400/each); 2 large street sweepers (€600k/each). Total €4,380k (vehicles only), with an additional €500k for charging infrastructure
Transport	Vehicle charging stations and systems	AcegasApsAmga	Roll-out of charging hubs with high-power infrastructure and roll-out of charging infrastructure in residential areas
Transport	Bus fleet overhaul	Busitalia Veneto Spa	The plan to overhaul Busitalia Veneto Spa's road fleet involves, by 2030, replacing the most obsolete vehicles on the road with electric, hybrid and methane-fuelled buses using recent technology, and the complete electrification of certain depots for e-bus charging
Transport	Total overhaul of bus fleet	Busitalia Veneto Spa	Additional modernization of the bus fleet in the event new sources of public funding are secured with the aim of implementing the full decarbonization of the urban bus fleet and/or trialling alternative completely environmentally sustainable fuel sources
Transport	Bike to work	ARPAV	€0.25/km incentive for employees who opt to use bicycles for their home-work commute, registering their journey with the relevant app and reporting it to the Mobility manager. The amount of the investment refers to the years already gone and an estimate for future years
Transport	LPT one-year passes	ARPAV	Incentive of one free month for employees who opt to use Local Public Transport for their home-work commute, signing up for a one-year pass. The value of the investment refers to the expenditure to date and an estimate for future years.
Transport	Bike parking	ARPAV	Installation of bike parking (racks or bike boxes) for use by a site with known critical condominium parking space issues, for employees who sign up to the Bike to work initiative
Transport	"DISCO" project	Padova City Council	Padova Council is a partner in the "DISCO" project trialling innovative solutions to address road haulage in the city.
Transport	Intelligent Transport Systems: multimodal ticketing and info-mobility	Padova City Council	The intervention consists in purchasing and installing new materials for the implementation of info-mobility systems or developing existing systems, to enable the deployment of the regional MaaS system and integration with the national MaaS integration platforms (MIMS); as well as creating a multimodal ticket with the development and implementation of intelligent transport systems (ITS and C-ITS) and/or scale-up of existing systems. 1 system is already in place.
Transport	Creation of "Bicipolitana" cycling network	Padova City Council	City cycling network deployment programme. -> Continuation of San Bellino cycleway. -> Development of new cycleways in various areas of the city. 7 km of cycleways that will connect the station with the main university hubs, to develop cycleways in the Via Dolfin, Via Grassi/Rocco/Ippodromo areas and to connect the municipality's various cycling routes and cycleways. -> "Bicipolitana" cycling networks: Mura Nord, Mura Ovest; Chiesanuova; Colli; Mura Sud; Bassanello-Mandria; Mura Sud-Est; 12A Facciolati -> Upgrade of Via 58° Fanteria -> Mandria cycleway
Transport	"Padova SMART" - Padova's city-wide tram network system	Padova City Council	Construction of SIR 2 Vigonza-Rubano tram line; Construction of SIR 3 station-Voltabarozzo tram line; Execution of SMART project with new lines

Table Annex.2 - Transport sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Transport	Public transport pass refund for home-work commute (updated from the SECAP)	University of Padova	Incentives for employees using public transport
Transport	Smart working for a better home/work life balance (updated from the SECAP)	University of Padova	Incentives for employees who work from home and foster a better home/work life balance
Transport	Remote working for a better home/work life balance (updated from the SECAP)	University of Padova	Incentives for employees who work from home and foster a better home/work life balance
Transport	Replacing vehicles belonging to commercial businesses	APPE	The initiative involves giving commercial businesses the opportunity to replace their current vehicles with zero-emission alternatives (EVs), such as cargo bikes, electric vans and electric cars
Transport	EV charging stations	Infocamere	Charging points installed at the Padova branch for employees to charge electric cars and e-bikes The indoor car park features 12 EV charging stations with an output of up to 22 kW and 8 e-bike/e-scooter charging points
Transport	Electrification of private transportation	Banca Patavina	Installation of EV charging stations at the Camin, Mandria and Padova branches
Transport	Electric vehicle loans	Banca Patavina	Innovative mortgage offering delivering financial support for private individuals to purchase EVs. The amount refers to the total ceiling value of the initiative
Transport	Smart working agreement and other measures to incentivize sustainable mobility	Banca Etica	There has been an agreement in place since 2022 to reduce home-work commutes for a maximum of 15 days/month. Anyone using public transport for at least 6 months is eligible for a refund of the cost of a one-month pass from the bank. To incentivize green transport, the bank has 2 EV charging stations just for employees at its headquarters
Transport	Electrification of company vehicle fleet	Cherry Bank	The bank has had a car policy in place since 2023 that requires all company vehicles to be either hybrid and/or electric. The goal is to reach a 50%-plus rate of compliance within the next three years.

Table Annex.3 - AFOLU sector actions			
Sector	**Action**	**Stakeholders**	**Description**
AFOLU	Mura San Benedetto park green space upgrade	Padova City Council	A park to be created on the Mura San Benedetto site on Via Orsini with 4 hectares of parkland
AFOLU	Financial loan products for forestation	Banca Patavina	Innovative mortgage offering to promote climate change adaptation policies. The amount refers to the total ceiling value of the initiative
AFOLU	Tree planting	Cherry Bank	Establishing more tree coverage around the new headquarters
AFOLU	"Un parco in ogni comune" project for a park in every municipality	Province of Padova	Producing new green spaces, on municipal land, by planting natives, a project carried out with the aid of specialist social enterprises and with the active involvement of schools

Table Annex.4 - Waste sector actions			
Sector	**Action**	**Stakeholders**	**Description**
Waste	Material recycling and recovery	AcegasApsAmga	Boosting and improving the efficiency of source-separated waste collection with the introduction of new vehicles and bins, the creation of a new collection centre and production of a sorting plant to handle source-separated waste (especially paper and cardboard).
Waste	Smart bins	AcegasApsAmga	Replacing recycling bins with smart bins designed to optimize collection through the use of controlled-access bins, with systems to identify the individual discarding the material, aimed at increasing the percentage of waste separated at source and quality of separated waste handed in and collected.
Waste	"Retesolida" — Food rescue and redistribution project	ACLI	Implementation and management of activities involved in rescuing unsold food and other products so they can be redistributed to those in need. Rescue from the foodservice supply chain, supermarkets and retail chains, food production and processing, and farmers' and growers' organizations.
Waste	"Retesolida" project - next step	ACLI	The project's evolution involves growing the donor and beneficiary base, as well as promoting processes and policies that ensure the sustainability of rescue operations, educating the city's residents and establishing good practices.
Waste	Circular economy for commercial businesses	APPE	The initiative involves giving commercial businesses the opportunity to procure and use reusable containers for the takeaway service they offer their customers.

Table Annex.5 - Cross-cutting actions across a number of sectors			
Sector	**Action**	**Stakeholders**	**Description**
Cross-cutting	Raising awareness around saving energy	ANCE	Promotion of events and participation in technical working groups focusing on and advocating the use of renewables and sustainable technologies
Cross-cutting	"UNIZeb" project	ANCE	Training and education - Promotion of living lab activities to trial new energy-saving technologies
Cross-cutting	DHICube	ANCE	Promotion of the Innovation Hub with a portal and services for contractors and government bodies for the promotion of digitalization for a green, safe and socially responsible built environment. Access to innovative digital technologies for the whole construction supply chain. Identification of needs in terms of advanced digital skills for the self-sufficient and discerning use of innovative technologies offered by the current market. Development of innovation networks and ecosystems.
Cross-cutting	Decarbonization of the construction industry	ANCE	Promotion of guidelines for the decarbonization of the construction industry, in-depth analysis of the national, European and international context, with a focus on the main sources of CO_2 emissions in the construction industry. Promotion and help with filling out the operational tool, which enables all contractors to calculate their carbon footprint, view its projection, and hence set out the NET zero strategy.
Cross-cutting	"Il portale del cantiere" construction site portal Check — Free software	ANCE	Promotion of free Check software to help contractors manage construction sites by means of digitalization and remote access
Cross-cutting	Circular economy - Waste recovery and recycling	ANCE	Promotion of pilot project for the recovery and recycling of paper packaging used on construction sites; initiative for the development of circular economy practices to grow sustainability in the way building contractors work. Promotion of trial project for the collection and recycling of PVC materials from building sites through agreements with associations in the Italian PVC supply chain.
Cross-cutting	Renewable Energy Communities	ANCE	Training and education — Promotion of RECs among contractors who are members of ANCE Padova; information and support for coordination with other stakeholders

Table Annex.5 - Cross-cutting actions across a number of sectors			
Sector	**Action**	**Stakeholders**	**Description**
Cross-cutting	Education on environmental sustainability	Associazione Biologi del Veneto	Education on the urban environment and relation with ecosystem services provided by nature; Epidemiological effects of rising temperatures; Environmentally friendly practices at home; Climate change and biodiversity: effects.
Cross-cutting	Promotion of a diagnostic service to check the energy efficiency of industrial facilities	Confindustria	Promoting a structured energy diagnostic service offered to firms to identify the inefficiencies of industrial processes, starting with an analysis of usage, to determine margins for energy use optimization and reduction in line with the decarbonization agenda. The service will measure CO_2 emissions before and after optimization measures.
Cross-cutting	Communication campaign	CSV	Communication actions will be organized, as part of the communication plan, on the themes of environmental sustainability and measures that can be implemented to mitigate the environmental impact of associations' activities, with particular reference to activities that Third Sector Organizations can implement to combat climate change.
Cross-cutting	Environmental sustainability kit	CSV	Informational material is posted on the website meant for all associations across the municipality of Padova on the themes of environmental sustainability and measures that can be implemented to mitigate environmental impact
Cross-cutting	Co-design with TSOs	CSV	Courses will be organized, as part of the co-design processes, on the themes of environmental sustainability and measures that can be implemented to mitigate the environmental impact of associations' activities, with particular reference to activities that Third Sector Organizations can implement to combat climate change
Cross-cutting	Crowdfunding campaigns	CSV	The plan implementing fundraising campaigns for local TSOs — promoted by CSV di Padova e Rovigo (voluntary services centre — Padova and Rovigo branch) — will incorporate specific actions to support projects on the themes of environmental sustainability and measures that can be implemented to mitigate the environmental impact of associations' activities
Cross-cutting	Workshops in schools	CSV	Specific training/educational actions on environmental sustainability themes will be delivered as part of workshops in schools promoting active citizenship and voluntary work
Cross-cutting	Courses on voluntary work and social bonds	CSV	Training courses aimed at all associations across the municipality of Padova on the themes of environmental sustainability and measures that can be implemented to mitigate the environmental impact of associations' activities
Cross-cutting	Promotion of Renewable Energy Communities	CSV	CSV seeks to promote the establishment of Renewable (and socially responsible) Energy Communities through educational support and advice and the provision of useful documents and materials
Cross-cutting	Universal community service projects	CSV	Universal community service projects will incorporate specific training/educational actions on the themes of environmental sustainability and measures that can be implemented to mitigate environmental impact
Cross-cutting	Training on safe and sustainable building	CNA	Promoting the adoption of innovative models, techniques and materials for the construction of environmentally friendly buildings. The association is committed to continue using educational and outreach sessions to promote businesses operating locally, citizens and public entities, extending the network of stakeholders working in unison with the CasaClima Network
Cross-cutting	Training on residential, commercial and institutional building	CNA	Educational and technical working groups on the use of renewable energies, RECs and self-consumption groups. The action falls within the purview of the REC board that CNA has set up with Council for the establishment of new RECs across the municipality
Cross-cutting	Education for businesses and enterprises	CNA	The project targets manufacturers to raise awareness around the importance of reducing their emissions impact and introducing offsetting measures
Cross-cutting	Purchasing green power	Italchimica SRL	Plan to purchase renewable energy. First intermediate target: meeting 10% of the manufacturing facility's energy needs by 2025 and 50% by 2030.
Cross-cutting	Energy community in Padova's industrial area	Italchimica SRL	Development of a project fostering synergy with manufacturers and businesses, with local entities for the sharing of renewable energy in collaboration with Padova Council
Cross-cutting	Biology department upgrade - new Reverse Osmosis	Lundbeck	Replacement of reverse osmosis final treatment unit (currently comprising two units in series) with a new highly energy-efficient unit

Table Annex.5 - Cross-cutting actions across a number of sectors			
Sector	**Action**	**Stakeholders**	**Description**
Cross-cutting	"PadovaXChange" project	Padova City Council	Study conducted by R2M Solution to develop the industrial area's digital twin
Cross-cutting	"My Data" project 2.0. Veneto Data Platform	Padova City Council	The initiative consists in developing a technological platform to support the definition of various plans (SUMP, SECAP, civil defence, PICIL light pollution control plan), land management and management of social and business services based on the data-driven decision-making paradigm. 1 platform already in place.
Cross-cutting	Public services for citizens	Padova City Council	Development of digital services, such as occupation of city-owned land, access to documents, nursery school enrolment, kindergarten enrolment, marriage notifications, Padovanet institutional website redesign, parking permits for residents with 7 new digital services created.
Cross-cutting	"My City" project 2.0. Integrated government IT system for delivery of interoperable services.	Padova City Council	The "MyCity" project 2.0 provides citizens and businesses with fully interactive digital public services. 1 platform in place.
Cross-cutting	"Padova 2030" communication campaign	Padova City Council	In December 2023, Padova Council launched an outreach campaign, with signs around the city and on some tram shelters, to make residents aware of the path to decarbonization that the city has embarked on. Due to be relaunched every year.
Cross-cutting	Energy + Sustainability Forum	Padova City Council	Padova Municipality has joined forces with the Italian association for energy service companies and energy efficiency operators (AssoESCo) to promote the "Energy + Sustainability Forum", which seeks to establish a systems approach to bring together and share experiences, best practices and innovative ideas on the energy transition to ensure more sustainable and integrated growth for the city
Cross-cutting	Getting the sustainability message across: "UniPadova sostenibile" project	University of Padova	Project supporting the communication of sustainability-related themes; University to take part in initiatives and campaigns supporting sustainability
Cross-cutting	ISO 20121 event certification	University of Padova	The goal is to bring together these and other best practices in a systems approach through the adoption and implementation of a certifiable event organization model in line with sustainability policies.
Cross-cutting	Development of private public partnership proposals	University of Padova	Development of proposals for the energy upgrading of whole complexes
Cross-cutting	Communicating good practices	APPE	Communication and awareness-raising activities aimed at businesses serving food and drink
Cross-cutting	Electric charging for commercial businesses	APPE	The initiative involves giving commercial businesses with private outside spaces the opportunity to install charging stations for e-bikes and e-scooters, thus promoting soft mobility
Cross-cutting	Purchasing certified green power	Raccanello	Energy demand of the Padova facility met entirely by GdO (guarantee of origin)-certified renewable energy
Cross-cutting	Padova ESG driving responsible and sustainable industry	Confapi	Raising the awareness of Padova's manufacturers around ESG themes and promoting recognized international certifications and standards in the ESG space; outreach sessions on how to achieve and maintain these certifications; observation and monitoring of local investments in the transition to industry 5.0 to reduce energy consumption
Cross-cutting	Training for municipal allotment holders	Banca Patavina	Training courses targeting new municipal allotment holders residing in the municipality of Padova
Cross-cutting	Financial loan products designed for businesses	Banca Patavina	Financial support for the city's industrial area and relevant masterplan to present a process of digital transition, electrification, development of green supply chains, etc.
Cross-cutting	Training designed for businesses	Banca Patavina	Conferences on the theme of digital transition, process electrification, innovative solutions
Cross-cutting	REC promotion	Banca Patavina	Training and financial support in setting up RECs based on the findings of the in-house task force established by the parent company

Table Annex.5 - Cross-cutting actions across a number of sectors			
Sector	**Action**	**Stakeholders**	**Description**
Cross-cutting	European project for training in the residential, commercial and institutional building domain	Chamber of Commerce	European LIFE programme to build up the skills of engineers and installers with a view to producing NZEBs
Cross-cutting	Training on food policies	Chamber of Commerce	Project funded by the Interreg programme to promote the reduction of waste in the agri-food supply chain by boosting skills training
Cross-cutting	Cradle-ALP	Chamber of Commerce	European project to promote the circular economy
Cross-cutting	Formation of REC	Chamber of Commerce	Future project for the formation of an Energy Community with local actors
Cross-cutting	"Green Routine" project	Confartigianato	Promotional action to encourage responsible consumption habits, more conscientious use of offices, equipment and consumables, as well as to foster a series of behaviours to take better care of workplaces.
Cross-cutting	Smart working	Confartigianato	The two Confartigianato Padova branches will be closed on Fridays, adopting smart working practices instead
Cross-cutting	Raising awareness among businesses around opportunities to improve energy efficiency	SMACT	Initiatives targeting manufacturers aimed at facilitating access to technological and financial opportunities to improve energy efficiency.
Cross-cutting	Purchasing certified green power	Banca Etica	Provision applies to headquarters and the Padova branch
Cross-cutting	Reducing environmental impact of events and offsetting unavoidable emissions	Banca Etica	Events over the course of 2024 will be assessed for their impact and to determine possible solutions for reducing emissions
Cross-cutting	Financial business support for ESG	Cherry Bank	Businesses applying for an ESG loan are eligible for 2 free assessments to check their company's ESG programme is on track If the second assessment produces a better score, the Bank offers special terms should the company take out a second ESG loan.
Cross-cutting	SME loan	Cherry Bank	Green loan for a maximum term of 8 years.
Cross-cutting	"Stageo" project	Teatro Stabile del Veneto	Improving the efficiency of costume inventory storage and management practices for two important regional theatres
Cross-cutting	Theatre Green Book	Teatro Stabile del Veneto	The theatre has joined the network of European theatres that is committed to building a network of net-zero theatres by sharing behavioural guidelines
Cross-cutting	AI-driven building management digitalization	1117 SRL	Creation and development of AI algorithms for the collection of all operating, maintenance, access, occupancy rates, energy usage, CO_2 emissions, land take, materials consumption and light emissions data
Cross-cutting	Innovative training	1117 SRL	Creation of a training and culture model that can be applied across all condominium buildings to make the housing stock managed environmentally sustainable, bringing the banking world on board. Access to patented algorithms for sustainable property management
Cross-cutting	Training and education on residential, commercial and institutional building	ANACI Padova	Training and education —certified by external qualified building sustainability experts — for Property Managers registered with the relevant local association ANACI Padova
Cross-cutting	Sustainable condominium resolutions	ANACI Padova	Condominium meetings to have items on the agenda focused around climate neutrality goals to get at least 30% of buildings in line with energy efficiency standards by 2030

Table Annex.5 - Cross-cutting actions across a number of sectors			
Sector	**Action**	**Stakeholders**	**Description**
Cross-cutting	Business Help Desk	ASCOM	Initiative to reward good behaviours by awarding the Imprendigreen mark to companies achieving the minimum score as determined by the Imprendigreen indicator
Cross-cutting	Eurac Climate Neutral Padova	EURAC	Dissemination activities of best practices from European projects and international networks (i.e. International Energy Agency), related to: Urban Energy Planning, Positive Energy Districts, Energy Communities, Nature Based Solutions, Circular Economy

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NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Commitments

Climate Neutrality Commitments of Padova

COMUNE di PADOVA

NetZeroCities has received funding from the H2020 Research and Innovation Programme under the grant agreement n°101036519.

Table of contents

1 Introduction

Introduction

Padova's path towards climate neutrality began many years ago, when the City Energy Plan was approved in 1999. The energy and climate planning timeline has advanced over the years since:

- in 2004, with the Energy Efficiency Plan
- in 2009, with the Operational Energy Plan
- in 2011, with the SEAP (Sustainable Energy Action Plan), which set 2020 targets
- in 2016, with guidelines for drawing up the Adaptation Plan
- in 2021, with the SECAP (Sustainable Energy and Climate Action Plan) with new 2030 targets.

The SECAP, i.e. the current Plan, commits the city to reducing emissions in its territory by 55% by 2030 (base year 2005), aiming for climate neutrality by 2050.

However, the seriousness of climate change at a global level and the urgency to act to counter it as quickly and seriously as possible have prompted the City of Padova to set itself an even more ambitious goal, namely achieving climate neutrality by 2030. This is why, when the opportunity to apply and join the NZC Mission arose, the City decided to get involved and raise the bar of its climate commitment.

The process to develop the Climate City Contract stems firstly from the analysis of the area's current emissions, which clearly shows the sectors where the most aggressive action should be taken, and secondly from the identification – also thanks to the contribution of local stakeholders – of the actions to be implemented first to achieve climate neutrality. This analysis also naturally takes into account the main barriers and opportunities related to each policy area.

At the level of single sources of emissions, the need to take action in the **building and transport sectors** is evident, in former case through a massive energy upgrade of buildings (residential and industrial) in Padova, in the latter through the creation of new infrastructures and services that favour sustainable mobility.

Two other fundamental aspects emerged during the development of the Climate City Contract. First, the need to massively **involve the local area**, understood both as local authorities and as the public at large, since most emissions are not directly controllable by city authorities, and therefore the achievement of climate neutrality must envisage a close collaboration with local organisations and inhabitants. Second, the need to implement new models of **innovative financing** strongly involving private individuals, since the cost of decarbonising Padova (as in any European city) cannot be sustained only through public funding. In this regard, from an economic point of view it is crucial that climate neutrality be seen not just as a cost, but as an opportunity.

The Padova Climate City Contract therefore aims to reduce emissions in its territory by 80%, with 2021 as its base year. The challenge is truly daunting given the little time available. Being part of the NZC Mission, however, is also a great opportunity to address the decarbonisation of European cities in a synergistic way and with continuous dialogue. Padova mainly hopes to obtain four things from the Mission:

- a continuous dialogue with other European cities that have experimented with new solutions to common problems, so that we can learn from the successes (or failures) of others;
- technical support, in the form of consultancy, as it is often complicated to have staff with specific expertise in municipal governments;
- funding opportunities specifically aimed at the implementation of Climate City Contracts;
- listening to the legislative issues that cities face, and support in trying to solve the regulatory barriers that sometimes hinder decarbonisation.

2 Goal: Climate neutrality by 2030

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Goal
The goal that Padova has set for itself to achieve by 2030 is an 80% reduction in climate-changing emissions in its territory, with 2021 as the base year, i.e. the year the SECAP was approved. The remaining 20% needed to achieve climate neutrality falls under so-called hard-to-abate emissions, which will be addressed after 2030 as per NZC guidelines. These emissions mainly includes civil and industrial users that, due to their geographical location (e.g. city centre), type of industrial process (e.g. heavy manufacturing industry), or building characteristics (e.g. listed or valuable buildings) are not among the buildings that will benefit from energy upgrades by 2030 (or only partially). There will also be some transport-related emissions that cannot be abated by 2030. Some heavy or light road vehicles will continue to run using endothermic diesel or petrol engines, as the market does not yet offer viable solutions for the total electrification of the vehicle fleet. Moreover, many vehicles will not yet have exhausted the multi-year depreciation of their purchase cost and thus cannot be expected to be replaced before that date. A total reduction in emissions will therefore take longer, which is why it was decided in the CCC to aim for an 80% emission reduction. The entire territory is covered with the exception of two ETS facilities, i.e. the hospital of Padova and the Acciaierie Venete company, which are not included in the emission budget of Padova, as per NZC guidelines. For the calculation of emissions, emission factors of the IPCC GHG approach were applied in terms of tCO2eq, based on the methodological framework developed in 2006 by the IPCC. The emission sectors considered are buildings, transport, waste, industrial processes and product use (IPPU) and agriculture forestry and other land uses (AFOLU). Emissions refer to Scope 1, i.e. those generated by combustion processes within the city, and Scope 2, i.e. those referring to energy consumption distributed through networks where the energy generation process takes place outside the system boundaries. Excluded for the time being is Scope 3, i.e. emissions generated outside the city but related to processes taking place therein, but which the administration intends to focus on in the years to come, particularly with regard to the food and clothing value chain. In the coming years, Padova will therefore see a considerable transformation, not only from a structural and sometimes infrastructural point of view, but also in terms of new services for the benefit of the public. We expect that the appearance and liveability of the city will change a lot in a short time, but above all that new synergies, new projects and new initiatives will be organised for the benefit of the entire area.

3 Strategic priorities

Strategic priorities
Below is a brief description of some of the strategic priorities of the Padova CCC, together with a list of the main initiatives that will be implemented by 2026. <u>The built environment</u> A key theme of Padova's CCC concerns residential, commercial and institutional buildings and industry, which account for 76% of final energy usage in the city. Various measures are envisaged to drastically reduce climate-altering emissions, from the replacement of boilers and generators with electric heat pumps possibly powered by renewable sources, to the creation of a district heating

network that can also make use of some thermal waste currently dissipated by the waste-to-energy plant, urban waste and local companies that have residual heat downstream of their production cycles.
In recent years, Padova has seen a rather high rate of building heritage redevelopment, with investments amounting to some 357 million euros mobilised thanks to the Superbonus 110 scheme. However, it is necessary to create the ideal conditions for the rate of redevelopment to remain high in the years to come. To achieve this goal, Padova Council aims to build a new One-Stop Shop: a public-private entity designed to bring together energy upgrade initiatives for residential, commercial, institutional and industrial buildings and to present private business operators (ESCOs) with investment package proposals, creating advantageous economies of scale and promoting Energy Efficiency Contracts.
67% of the Climate City Contract target in terms of emission reduction (574,893 tonnes of CO2) is linked to this group of measures in the area of civil and industrial buildings.

Mobility and transport
The city transport sector, which accounts for 24% of final energy usage, is a key part of the decarbonization strategy. In order to reduce mobility-related emissions, action will be taken with a variety of integrated measures that will change the way people travel around the city.
Without a doubt the most important project is the city-wide tram network system - SMART, which will see the construction of two new lines and the connection with modal interchange systems on the outskirts of the city to help reduce the number of entries in the city. While very important, this project must necessarily be part of a broader strategy. The other measures aimed at improving mobility in Padova envisaged in the CCC are:

- the gradual replacement of diesel buses in local public transport with new electric vehicles powered by renewable sources,
- the promotion of cycling through the full completion of Padova's Bicipolitana and the widespread installation of bike racks and bike boxes,
- the implementation of mobility management policies through local companies and schools with mobility managers and the promotion of Mobility as a Service (MaaS),
- the creation of a Low Emission Zone (LEZ) and the introduction of an Ultra LEZ, to progressively limit the circulation of the most polluting vehicles,
- electrification of the private vehicle fleet, facilitated by incentives and the installation of charging points in cities.

20.1% of the Climate City Contract target in terms of emission reduction (172,489 tonnes of CO2) is linked to this group of measures in the area of sustainable mobility and transport.

Energy systems
The progressive installation of roof-mounted photovoltaic panels and the activation of Renewable Energy Communities should ensure an increase in the share of electricity needs met by locally produced renewables.
Legambiente's Renewable Municipalities study shows that in 2023 Padova was the city with the most photovoltaic installations per capita in Italy (around 15 MW installed in total). This extremely positive trend is expected to continue according to a linear trend, taking advantage of the available roof space on both civil and industrial buildings. The proliferation of the plants, with particular reference to the city centre, should be facilitated by easing legal and regulatory restrictions, protecting the landscape and the historical and cultural heritage of the City of Padova.
11.5% of the Climate City Contract target in terms of emission reduction (98,952 tonnes of CO2) is linked to this group of measures in the area of energy systems.

The timetable for the three-year period 2024-2026

2024

- Definition of a communication strategy for the Climate Neutrality Plan
- Works for the new Bicipolitana lines in Padova (until 2026)
- Works for the construction of the new SIR2 and SIR3 tram lines (until 2026)
- Purchase of new electric buses to complement the already zero-emission buses (up to 2030)
- Drafting of a feasibility study for the activation of the One Stop Shop in Padova
- Mapping of available municipal assets suitable for photovoltaic installations

2025

- First mapping of the state of the art of green energy procurement in the city and subsequent launch of a communication campaign to increase the spread (up to 2030)
- Completion of a feasibility study for the introduction of the LEZ in Padova
- Activation of the first REC with public governance, within the framework of the PADOVA 2030 REC Manifesto and the Let's GOv project
- Support for the emergence of new private energy communities through the implementation of the RES Padova project (until 2027)
- Drafting of a feasibility study to assess the potential development of district heating networks in the city and possible heat sources to be used
- Definition of a multi-year incentive plan for replacing boilers with electric heat pumps and publication of the first calls for tenders (until 2030)
- Activation and operation of the One Stop Shop in Padova (until 2030)
- Completion of a feasibility study for the application of MaaS in Padova
- Drafting of a feasibility study to assess the costs and benefits of various measures to promote electric cars in cities
- Signing of new Climate Agreements or revision of existing agreements to activate corporate mobility management policies

2026

- Start of works to enable automatic controls of the borders of the new LEZ (until 2027) with activation of the LEZ in 2028
- Activation of pilot projects for the implementation of MaaS in Padova
- Start of work on new district heating networks (until 2030)
- Activation of the first measures to promote electric cars

With respect to the strategic priorities described above, the timetable includes several intermediate targets to be reached in the years indicated and to be closely monitored to ensure that the implementation of the CCC is not delayed. In order to verify the general progress of the city's decarbonisation process, Padova Council has also undertaken to produce and annual emissions report, while a detailed monitoring of the actions is planned every two years, both with regard to actions of the City and those of stakeholders.
In order to effectively implement the CCC, some supra-communal stakeholders are very important to involve, including: the regional government, central ministries, the GSE, energy distributors. These actors can contribute in different ways: from a legislative point of view, by removing some regulatory barriers to the decarbonisation process, with targeted funding, by sharing data or by adapting the area to the ongoing ecological transition. In part these collaborations are already in place, for the others it is Padova's intention to strengthen them in the future.

At the local level, among the most relevant stakeholders in terms of impact and possible future collaborations is certainly the University of Padova, with which a collaboration protocol was signed for the Padova 2030 pathway, especially for the wide-ranging expertise it can make available for the decarbonisation of Padova.
Other key stakeholders are the banks, three for now, which can provide the city with various instruments for decarbonisation, as well as their expertise in innovative finance.
Other key stakeholders are those pertaining to the industrial sector, which represents a significant constituency in Padova. These actors have a very high potential for innovation and can be drivers of change for the city.
Lastly, the whole world of associations, which are able to reach the population of Padova and its various souls, is of vital importance for the involvement of the public.

4 Process and principles

Process and principles
Following the process initiated in 2023 with the Living Lab in Padova, six topical tables with local stakeholders will be organised (or confirmed if they already exist) in order to pursue the actions of the CCC in a continuous and synergistic manner. These working groups cover: renewable energy communities (RECs), housing, industry, Innovation Hub, sustainable mobility and food policies. The parts related to financing and communications will be discussed in all Living Lab tables, as both are necessary to ensure that the ideas and projects that emerge are implemented and well communicated. Each year Padova Council will take stock of the territory's emissions, while every two years all actions by the municipality and stakeholders will be monitored. The CCC is also intended as a living document, a strategy that can be modified and implemented in future years. If there are new actions to be added, either by existing or new stakeholders, it will be possible to do so, just as it will be possible to adjust current strategies should circumstances so require. In short, the implementation of the CCC will require continuous observation and updating, coordinated by Padova Council, but carried out in cooperation with the whole area.

5 Signatories

The table below lists the signatories[1] which are committing to this CCC, and thereby to help the city achieve its goal to reach climate neutrality by 2030. Specific agreements that articulate the details of the climate action(s) between the municipality and signatories are added to the individual contracts in Annex 1 (see sample in section 6). The number and relevance of the signatories' commitments are likely to increase over time.

Name of the signatory (organisation)	Sector / Domain / Level of operation[2]	Legal form	Name of the responsible person	Position of the responsible person
AcegasApsAmga Hera Servizi Energia Hera Luce	Private sector Area: multi-utility water, environmental, energy, public lighting networks and services. National level	S.p.A. Joint stock company S.p.A. Joint stock company S.r.l. Limited liability company	Roberto Gasparetto Giorgio Golinelli Alessandro Battistini	MD AcegasApsAmga MD Hera Servizi Energia MD Hera Luce
Provincial ACLI Association of Padova	Third Sector Area: social Local level	APS Social promotion association	Gianni Cremonese	President
ANACI PADOVA	Third Sector Area: National Association of Condominium and Property Managers - Padova Branch Local level	Professional association	Alfredo Gambato Andrea Garbo	President Director of the Study Centre ANACI Padova

1 Climate City Contract signatories may be individuals or organisations. They ideally include national and/or regional governments, for example concrete agreements/commitments made through the multi-level governance engagement processes supported by NetZeroCities, CapaCities, and other emerging national level initiatives.

2 Please mention if the organisation is active at local, regional, national, or international level.

Ance Padova	Third Sector Area: National Association of Building Contractors Local level	Professional association	Monica Grosselle	President
APPE Padova (society for the protection of birds - Padova branch)	Third Sector Area: Associazione Provinciale Pubblici Esercizi (association of commercial businesses for Padova district) Local level	Professional association	Federica Luni	President
Veneto Regional Environmental Protection Agency (ARPAV)	Public sector Area: environmental protection and prevention Regional level	Regional Agency	Loris Tomiato	General Manager
Confcommercio Imprese per l'Italia- ASCOM Padova	Third Sector Area: trade association Local level	Professional association	Patrick Bertin	President

Associazione Biologi del Veneto	Third Sector Area: scientific promotion Regional level	Association for the promotion of science	Milva Boselli	President
Banca Etica	Private sector Area: finance National level	SCpA Joint-stock cooperative company	Nazzareno Gabrielli	General Manager
BCC Veneta - Cooperative Credit - Cooperative Company	Private sector Area: finance National level	Cooperative Company with prevailing mutuality	Flavio Piva	President
Busitalia Veneto Company	Private sector Area: public transport National level	S.p.A. Joint stock company	Gino Colella	Managing Director and General Manager
Padova Chamber of Commerce	Public sector Area: economic promotion, development of business and the local economy Local level	Public body	Antonio Santocono	President

Cherry Bank	Private sector Area: finance National level	S.p.A. Joint stock company	Giovanni Bossi	Managing Director
National Confederation of Craft and Small Enterprises, Provincial Association of Padova and Rovigo (CNA)	Third Sector Area: artisan and small business association Local level	Professional association	Luca Montagnin	President
Confapi Padova - Federation of small and medium-sized enterprises	Third Sector Area: association of small and medium-sized enterprises Local level	Professional association	Carlo Valerio	President
Confartigianato Imprese Padova (artisan business association - Padova branch)	Third Sector Area: association of artisanal enterprises Local level	Professional association	Gianluca Dall'Aglio	President
Confindustria Veneto Est	Third Sector Area: trade association Regional level	Professional association	Leopold Destro	President

Padova and Rovigo Solidarity Service Centre (CSV)	Third Sector Area: organisation, management and delivery of services to volunteer organisations Local level	ODV - Volunteer Organisation	Luca Marcon	President
EURAC	Private Research Center Area: research and training Local level	Association		
Immaculate Conception Opera Foundation	Third Sector Area: services and reception of fragile persons Local level	Non-profit Non-profit organisation of social utility	Andrea Cavagnis	President
INFOCAMERE SCpA	Public sector Area: digital innovation National level	IT company for Italian Chambers of Commerce supporting digital innovation	Paolo Ghezzi	General Manager
Interporto Padova	Public sector Area: logistics Local level	S.p.A. Joint stock company	Franco Pasqualetti	President

Italchimica	Private sector Area: creation of cleaning, disinfection and cosmetics products Local level	S.r.l. Limited liability company	Alessandro Fioretto	
LUNDBECK PHARMACEUTICALS ITALY	Private sector Area: pharmaceutical International level	S.p.A. Joint stock company	Davide Manfrotto	General Manager
NET CENTER Complex	Private sector Area: property management Local level	Real estate complex	Andrea Garbo	Director
Padova Hall	Private sector with public participation Area: management and administration of real estate and movable property Local level	S.p.A. Joint stock company	Nicola Rossi	President

Birra Peroni	Private sector Area: beer production National level	S.r.l. Limited liability company	Enrico Galasso	Chairman of the Board of Directors
Poste Italiane	Public sector Area: postal sector National level	S.p.A. Joint stock company	Giulio De Leonardis	Head of Operational Planning and Management of Energy Resources
Padova Province	Public sector Area: institutional Local level	Public body	Valentino Turetta	Director for the Environment
R2M Solution	Private sector Area: engineering company International level	S.r.l. Limited liability company	Thomas Messervey	Founder and President
ARD Raccanello	Private sector Area: production of building products Local level	S.p.A. Joint stock company	Ilaria Raccanello	Managing Director

SMACT Competence Center	Public-private sector Area: research and training National level	SCpA Joint-stock cooperative company	Massimo Guglielmi	Chairman of the Management Board
Teatro Stabile del Veneto Carlo Goldoni Foundation (TSV)	Third Sector Area: cultural, theatre management Regional level	Foundation	Giampiero Beltotto	President
University of Padova	Public sector Area: research and training Local level	State university - public body	Daniela Mapelli	Rector
Varisco	Private sector Area: professional pump production for industry and drainage International level	S.r.l. Limited liability company	Axel Guddas	General Manager
1117	Private sector Area: tools for improving the efficiency of the building stock Local level	S.r.l. Limited liability company	Andrea Garbo	Director

6 Sample contract with signatures

AGREEMENT TO DRAFT THE CLIMATE CITY CONTRACT OF THE CITY OF PADOVA AND ACHIEVE CLIMATE NEUTRALITY BY 2030

WHEREAS:

- the Intergovernmental Panel on Climate Change (IPCC) has repeatedly sounded the alarm on the irreversible effects of climate change, calling on states to take urgent decisions;
- in 2015, the new Covenant of Mayors for Climate & Energy initiative was launched in which signatory cities commit to actively support the reduction of greenhouse gas emissions and agree to adopt an integrated approach to climate change mitigation and adaptation;
- in December 2019, the European Council endorsed the goal of climate neutrality by 2050 and EU leaders took note of the Commission's communication on the Green Deal;
- in December 2020, the European Commission launched the European Climate Pact, an initiative calling on individuals, communities and organisations to participate in climate action and build a greener Europe;
- in December 2020, the European Council endorsed a binding EU target of a net internal reduction in greenhouse gas emissions of at least 55% by 2030 compared to 1990 levels and called on the Council and Parliament to take this new target into account in the proposed European climate law;
- in May 2021, the ambassadors to the EU approved the final compromise text for the European climate law, which was agreed between the Council and Parliament negotiators in April 2021;
- in September 2021, the European Commission announced the launch of the Mission '100 Climate Neutral and Smart Cities' to select 100 frontrunner cities that intend to be climate neutral by 2030;
- in April 2023, the Council formally adopted five pieces of legislation from the 'Fit for 55%' package that will enable the EU to reduce greenhouse gas emissions in key sectors of the economy, while ensuring that the most vulnerable citizens and micro-businesses, as well as sectors exposed to the risk of carbon leakage, receive effective support in the climate transition;

BEARING IN MIND THAT

- on 14/06/2021, with City Council Resolution no. 2021/0064, the Sustainable Energy and Climate Action Plan (secap) was approved, a document of a strategic nature that outlines the set of policies and actions that the Administration intends to implement in the coming years, with a time horizon of 2030, with the aim of drastically reducing climate-changing emissions in the territory, in line with the reduction targets set at international, European and national level:
- the SECAP includes 116 actions for territorial mitigation and adaptation to climate change;
- on 19 January 2022, the Municipality of Padova, in the person of the Mayor, expressed its interest in participating in the Climate Neutral and Smart Cities Mission initiative;
- on 29 April 2022, the European Commission announced the list of 100 cities in Europe that will test innovative solutions and decarbonisation strategies to achieve climate neutrality by 2030, and the Municipality of Padova is among them;

- the strategy of the SECAP will be reworked and strengthened in the so-called Climate City Contract, a strategic document in which to indicate the actions planned to achieve climate neutrality that the cities of the Mission are invited to elaborate by the European Commission;

CONSIDERED THAT:

- the activation of partnerships between the public and private sectors is a fundamental lever for promoting the sustainable development of the territory and achieving the ambitious goal of climate neutrality by 2030;
- the partnership will take concrete form through the signing of a Climate Agreement, in which each of the parties involved will commit to implementing actions and policies to reduce energy consumption and climate-changing emissions and will identify areas for mutual collaboration, to the benefit of local communities and the territory;
- the Agreement will be included in the Climate City Contract, a document of a strategic nature and shared with local stakeholders, which will outline Padova's strategy in achieving climate neutrality by 2030;

ALL OF THE ABOVE:

The Municipality of Padova, with registered office in Via del Municipio 1, 35122 Padova, Tax Code 00644060287, legally represented by the Mayor pro tempore Sergio Giordani;

AND

Name and information about the stakeholder

AGREE AS FOLLOWS:

Art. 1 - Aims

The present Agreement defines and articulates the modalities of collaboration between the Municipality of Padova and the underwriters for the design of new actions, pursued autonomously or in partnership, that have an impact on the municipal territory and that are aimed at the reduction of climate-altering emissions and/or at the adaptation of the city to extreme climatic events.
The Agreement is part of the Climate City Contract that outlines the strategy of the Padova territory in the achievement of climate neutrality by 2030, within the Mission ‘Climate Neutral and Smart Cities’.

Art. 2 - Commitments of the Municipality of Padova

The Municipality of Padova commits itself to:

- coordinate the activities that will be implemented on its territory with the other subscribing subjects;
- to include the agreed actions in the Climate City Contract, a document that will be approved by the European Commission and that will receive a quality certification ‘Mission Label’, which aims at unlocking synergies with other EU funding programmes and with further financial resources;
- publicise the Agreement and the commitments undertaken in it, through communication campaigns;

- give visibility to the actions implemented thanks to the Agreement at all territorial scales (local, regional, national, European) and by exploiting the networks of which the Municipality is a member (Net Zero Cities, Covenant of Mayors, Agenda 21, etc.);
- supporting the formation of partnerships with other local, national and international realities, also with the aim of presenting joint projects to obtain funding for the implementation of the Climate City Contract;
- identify synergies with other programmes and initiatives managed by the Municipality of Padova (by way of example and not limited to: the programme for planting trees or supporting the activation of energy communities);
- periodically inform the subscribers on the status of implementation of the Climate City Contract and on the results obtained under this Agreement.

Art. 3 - Undertakings by the underwriter

The subscribing party undertakes to:

- sign and implement the commitments indicated in Annex 1 to this Agreement, which constitutes an integral part thereof;
- finance (with its own funds or with external financing) the commitments indicated in Annex 1 to this Agreement, which constitutes an integral part thereof;
- identify further actions for the achievement of climate neutrality, to be indicated in Annex 2, which require additional resources or the activation of collaborations and/or agreements with other subjects;
- provide information annually on the commitments pursued;
- publicise the Agreement and the commitments undertaken in it;
- to collaborate in the dissemination of initiatives promoted by the Municipality of Padova relevant to the issues dealt with in this Agreement.

Art. 4 - Timing

This Agreement shall be valid until 31.12.2030, the deadline for the implementation of the Climate City Contract, except for the monitoring of the implemented actions and possible extensions of the Mission '100 Climate Neutral and Smart Cities'.

The Agreement may be renewed according to modalities to be established between the parties.

Art. 5 - Amendments and supplements

The parties agree that this Agreement may be amended and supplemented by signing a supplementary deed. Amendments to the contents of Annexes 1 and 2 may, however, be agreed between the parties on the occasion of the annual monitoring of the Climate City Contract, without this entailing an integration of the Agreement.

Art. 6 - Withdrawal

The Parties may withdraw from this Agreement with good reason by means of a registered letter with acknowledgement of receipt or PEC to be sent to the other Party with at least 30 days' notice. The withdrawal shall be exercised in such a way as not to cause prejudice to the other Party.

Art. 7 - General Provisions

The Parties reciprocally declare that they are informed that the data provided or in any case collected as a consequence of and in the course of the execution of this Climate Agreement, shall be treated exclusively for the purposes of this Agreement and/or for statistical purposes, with exclusive treatment

of the data in anonymous form, through communication to public entities, should they request it for the pursuit of their own institutional purposes, as well as to private entities, should the purpose of the request be compatible with the institutional purposes of the Municipality.

7 Appendix 1: Individual / Cluster Signatory Commitments (to be added before submitting the Climate City Contract

ALLEGATO 1

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	**Bike to work**
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Incentivo chilometrico di 0,25 €/km ai dipendenti che decidono di usare la bicicletta per lo spostamento casa-lavoro, registrando il tragitto con apposita App e rendicontandolo al Mobility manager.
	Data di inizio e fine attività	01/03/2024-31/12/2024 Rinnovabile
Implementazione	Ufficio responsabile dell'implementazione	Benessere organizzativo, Area Giuridica e Organizzativa
	Modalità di implementazione	Proposta del Mobility manager nell'ambito degli interventi attuativi del PSCL
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Dipendenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	//
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	//
	Numero di beneficiari potenziali per anno **	Variabile n. adesioni per Padova: 30 nel 2022, 46 nel 2023, su circa 180 dip. potenziali
	[Azioni di adattamento] Pericolo climatico mitigato *	

	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	-3,6 t/anno a livello comunale nel 2022, in elaborazione 2023
	Costi di implementazione (Capex)	2.224 €/2021, 5.593 €/2022, in elaborazione 2023, per il 2024 stimati 10.000 € a livello regionale
	Costi operativi (Opex)	Stima 7.000 € per acquisizione sw di registrazione automatica dei percorsi dall'App individuata con gara (a livello regionale)
Definizione dell'azione	Nome dell'azione	**Abbonamenti annuali TPL**
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Incentivo di una mensilità gratuita ai dipendenti che decidono di usare il Trasporto Pubblico Locale per lo spostamento casa-lavoro, sottoscrivendo un abbonamento annuale in convenzione con il Mobility manager, o in autonomia (con giustificativi)
	Data di inizio e fine attività	01/01/2024-31/12/2024 Rinnovabile
Implementazione	Ufficio responsabile dell'implementazione	Benessere organizzativo, Area Giuridica e Organizzativa
	Modalità di implementazione	Proposta del Mobility manager nell'ambito degli interventi attuativi del PSCL
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Dipendenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	//

	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	//
	Numero di beneficiari potenziali per anno **	Variabile n. adesioni per Padova: 9 nel 2021, 16 nel 2022, 25 nel 2023
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	-4,3 t/anno a livello comunale nel 2021, -7,2 t/anno nel 2022, in elaborazione 2023
	Costi di implementazione (Capex)	1,213 €/2021, 1,431 €/2022, in elaborazione 2023, per il 2024 stimati 5.000 € a livello regionale
	Costi operativi (Opex)	

* se applicabile

** se stimabile

ALLEGATO 2

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	**Parcheggi per biciclette**
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Installazione parcheggi per biciclette (rastrelliere o bike box) ad uso di una sede con dichiarate criticità di spazi condominiali, per i dipendenti aderenti al Bike to work, proposta dal Mobility manager nell'ambito degli interventi attuativi del PSCL
	Data di inizio e fine attività ipotizzata	01/03/2024-31/12/2024 Rinnovabile
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Spazi, finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	Non stimabile
	Stima costi di implementazione (Capex)	20.000 €

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Comune di Padova ed altri soggetti pb/pv con sedi nelle vicinanze
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

ALLEGATO 1 - FOGLIO 1 DI 2

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Efficientamento energetico Residenza S. Chiara
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Efficientamento energetico RSA S. Chiara con capacità di 480 p.l. per non-autosufficienti. Rivestimento superfici opache con cappotto isolante e sostituzione infissi. Installazione impianto fotovoltaico di potenza pari a 150-200 kWp.
	Data di inizio e fine attività	2024- 2025
Implementazione	Ufficio responsabile dell'implementazione	Servizio Gestione Patrimonio Immobiliare Fondazione OIC Onlus
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Ospiti RSA, Fondazione OIC
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	In corso di stima nell'ambito della progettazione
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	In corso di stima nell'ambito della progettazione
	Numero di beneficiari potenziali per anno **	480 ospiti RSA
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	In corso di stima nell'ambito della progettazione
	Costi di implementazione (Capex)	Tot € 16.000.000,00 IVA e spese comprese
	Costi operativi (Opex)	
	Fonte del finanziamento	Fondi propri Fondazione OIC - Crediti Fiscali Superbonus 110%

* se applicabile

** se stimabile

ALLEGATO 1 - FOGLIO 2 DI 2

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Implementazione di impianti fotovoltaici
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Sviluppo di una serie di impianti fotovoltaici per produzione in autoconsumo sulle coperture (circa 3.000 mq) e su parcheggi (con pensiline - circa 3.000 mq). Per un totale di circa 600 + 600 kWp
	Data di inizio e fine attività	2025-2030
Implementazione	Ufficio responsabile dell'implementazione	Servizio Gestione Patrimonio Immobiliare Fondazione OIC Onlus
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Ospiti RSA, Fondazione OIC
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	720 + 720 MWh/anno
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	720 + 720 MWh/anno
	Numero di beneficiari potenziali per anno **	Circa 900 utenti del complesso "Civitas Vitae Angelo Ferro"
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	900 tCO_2 eq/anno
	Costi di implementazione (Capex)	Tot € 4.500.000,00 IVA e spese comprese
	Costi operativi (Opex)	Circa 10.000 €/anno
	Fonte del finanziamento	Intervento attuabile solo a fronte di finanziamenti a fondo perduto e/o agevolati

* se applicabile

** se stimabile

ALLEGATO 2 - FOGLIO 1 DI 2

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	Istituzione di una CER nel territorio della cabina primaria Guizza-Paltana
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Realizzazione di impianti fotovoltaici diffusi sulle coperture di edifici pubblici/privati. Il complesso OIC fungerebbe da principale autoconsumatore garantendo una stabilità massima del fabbisogno energetico.
	Data di inizio e fine attività ipotizzata	2025-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Coinvolgimento soggetti pubblici e privati per partecipazione alla CER con messa a disposizione delle coperture per installazione impianti fotovoltaici
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	Da definire
	Stima costi di implementazione (Capex)	Da definire

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Comune di Padova (coperture di scuole e impianti sportivi), Diocesi di Padova (coperture di chiese, centri parrocchiali, scuole).
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

ALLEGATO 2 - FOGLIO 2 DI 2

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	Implementazione di impianti geotermici a bassa entalpia
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Realizzazione di un campo di sonde geotermiche a bassa entalpia (15-20 °C), a profondità di 100-150 m distribuite nelle aree verdi del complesso, per pompe di calore di climatizzazione estiva ad alto rendimento e per riscaldamento invernale. Per azzerare gli attuali consumi di gas (700.000 Smc/anno) sarebbe necessario un impianto di 3,5 MWp.
	Data di inizio e fine attività ipotizzata	2028-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Coinvolgimento del comune di Padova (per la messa a disposizione delle aree del parco della Mela Rossa). Possibile contributo scientifico del centro universitario LEVI CASES per gli aspetti di geotermia. Eventuale partecipazione di HSE (gruppo Hera) per gli aspetti impiantistici, anche in qualità di ESCo
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	Nell'ipotesi di ridurre del 50% gli attuali consumi di gas: 685 tCO_2 Azzerando i consumi di gas: 1.370 tCO_2
	Stima costi di implementazione (Capex)	Da definire

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Comune di Padova; Università di Padova - Centro Levi Cases
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Elettrificazione mobilità privata: installazione collonine elettriche
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Installazione presso nostre filiali di Camin, Mandria e Padovauno
	Data di inizio e fine attività	inizio 2024 - termine 2026
Implementazione	Ufficio responsabile dell'implementazione	Economato, immobili e logistica
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Residenti e persone in transito nel territorio del Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	12.000 euro
	Fonte del finanziamento	in proprio BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Elettrificazione mobilità privata: prodotti finanziamento per acquisto veicoli elettrici
	Tipologia	Supporto finanziario
	Ambito d'intervento	Trasporti
	Descrizione	Prodotto Mutuo efficienza ESG impresa e Mutuo innova ESG Privati - Plafond totale di 2,5 milioni di euro
	Data di inizio e fine attività	inizio 2024 - termine 2026
Implementazione	Ufficio responsabile dell'implementazione	Marketing operativo
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Privati e Imprese residenti/operanti nel Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	2.560 euro
	Fonte del finanziamento	in proprio BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Rinnovamento profondo patrimonio edilizio privato: prodotti di finanziamento
	Tipologia	Supporto finanziario
	Ambito d'intervento	Edilizia civile
	Descrizione	Prodotto Mutuo rigenera ESG impresa - Mutuo innova ESG privati e Mutuo efficienza ESG imprese e privati - Plafond complessivo pari a 4 milioni di euro
	Data di inizio e fine attività	inizio 2024 - termine 2026
Implementazione	Ufficio responsabile dell'implementazione	Marketing operativo
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Privati e imprese residenti/operanti nel comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	4.100 euro
	Fonte del finanziamento	Fondi propri BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Promozione fonti rinnovabili: prodotto finanziamento privati per impianti fotovoltaici
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Prodotto mutuo efficienza ESG privati - Plafond 1 milione
	Data di inizio e fine attività	
Implementazione	Ufficio responsabile dell'implementazione	Marketing operativo
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	Privati residenti nel Comune di Padova
	Beneficiari dell'azione	
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	1.025 euro
	Fonte del finanziamento	in proprio BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Attuazione politiche adattamento ai cambiamenti climatici: area verde
	Tipologia	Supporto finanziario
	Ambito d'intervento	Forestazione
	Descrizione	Area verde Via San Crispino
	Data di inizio e fine attività	inizio 2024 - termine 2026
Implementazione	Ufficio responsabile dell'implementazione	Economato, immobili e logistica
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Residenti del Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	25.000 euro
	Costi operativi (Opex)	
	Fonte del finanziamento	Fondi propri BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Attuazione politiche per adattamento ai cambiamenti climatici: Formazione assegnatari orti urbani
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Agricoltura
	Descrizione	Percorsi formativi a favore di coloro che saranno assegnatari orti urbani, allargabili anche ai Soci della BCC residenti nel comune di Padova.
	Data di inizio e fine attività	inizio 2025 - termine 2030
Implementazione	Ufficio responsabile dell'implementazione	Specialista ESG
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Cittadini assegnatari e Soci della BCC del Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	10.000 euro
	Costi operativi (Opex)	
	Fonte del finanziamento	Fondi propri BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Master plan per area industriale: prodotti finanziamanto favore imprese
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Supporto finanziario per transizione digitale, elettrificazione dei processi produttivi, soluzioni innovative, sviluppo filiere green, riuso riciclo e recupeocon prodotti e plafond dedicati stimati 13 milioni di euro
	Data di inizio e fine attività	inizio 2024 - termine 2027
Implementazione	Ufficio responsabile dell'implementazione	marketing operativo
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Imprese che operano area industriale di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	13.315 euro
	Fonte del finanziamento	Fondi propri BCC Veneta

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Masterplan per area industriale: convegni rivolti alle imprese
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Convegni sul tema della transizione digitale, elettrificazione dei processi produttivi, soluzioni innovative, sviluppo filiere green
	Data di inizio e fine attività	inizio 2024 - termine 2027
Implementazione	Ufficio responsabile dell'implementazione	marketing operativo
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Imprese residenti/operanti nel Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	15.000 euro
	Fonte del finanziamento	Fondi propri BCC Veneta

* se applicabile
** se stimabile

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Promozione fonti rinnovabili: Comunità energetiche
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Ruolo della BCC nello sviluppo delle CER
	Data di inizio e fine attività ipotizzata	inizio 2024-termine 2027
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Supporto da parte della Capogruppo GBCI che ha già avviato specifico Gruppo di lavoro.
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Stima costi di implementazione (Capex)	

* se applicabile
** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	No
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	No

DEFINIZIONE AZIONI
Varisco Srl (Part of Atlas Copco Group - FAM Code ITH)

Definizione dell'azione	Nome dell'azione	Science Based Targets - Riduzione CO2 KPI
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	L'azione si inserisce all'interno del Progetto di adesione del Gruppo Atlas Copco ai Science Based Target. Per ogni dettaglio si rimanda al Portale SBT (https://sciencebasedtargets.org/). Il Gruppo ha definito dei targets da raggiungere entro la scadenza del 2030 per ogni Ambito (definitit Scope 1-Scope 2-Scope 3) associati misurabili KPI: - Tonnellate di CO2 emesse in ambito 1 & 2 (Energia e veicoli); Riduzione del 46% entro il 2030 (calcolo su base 2019) - Tonnellate di CO2 emesse in ambito 3 (trapsorti e viaggi aerei); Riduzione del 28% entro il 2030 (calcolo su base 2019) Altro KPI singificativo per l'ambito Scope 3 relativo ai prodotti all'interno del loro ciclo di vita è il seguente: - % di Nuovi progetti di sviluppio prodotti con riduzione della quantità di CO2 nel ciclo di vita inferiore alla gamma precedente; 100% entro il 2030 (calcolo su base 2019). Il focus sui primi due KPI è il seguente: Riduzione della CO2 emessa dalle utilities a servitù dello stabilimento e dai prodotti utilizzatati e consumati nel processo produttivo, pertanto l'ambito delle azioni è incentrato sulla riduzione dei consumi di Gas Naturale, Energia Elettrica, Carburanti e Trasporti. L'azione oltre ad essere mirata sull'ottimizzazione dei consumi in se (è stata effettuata un analisi energentica per definire i punti di miglioramento) prevende anche l'installazione di un impianto fotovoltaico di 265 kWp pari ad una copertura di circa il 70% del consumo con conseguente emissione di CO2 (per la parte residua verrà utilizzata energia eletttrica coperta da GO come da Direttiva 2009/28/CE), l'installazione di una nuovo impianto di riscaldamento (prevista una riduzione del consumo del 25%) l'introduzione del carburante HVO in sostituzione del Diesel (prevista una riduzione del 80% di emissione di CO2, sensibilizzazione nei confronti della catena di fornitura ad utilizzare carburanti alternativi (HVO per trasporti via gomma o SAF per trasporti via aerea) o mezzi elettrici ma solo se alimentati da enegia rinnovabile. Tale requisito per i trasportatori diverrà nel prossimo futuro requisito vincolante per la qualifica degli stessi ma ad oggi non sono previste scadenze temporali. In merito al terzo KPI relativo ai prodotti le nuova gamme prevedono oltre a migliormento dell'efficienza con riduzione dei consumi e di CO2 prodotta nel ciclo di vita, l'introduzione di macchine compatibili con l'HVO e di macchine fully electric. Ad oggi non sono definiti target di riduzione ma solo la quantià di prodotti nuovi con riduzione di CO2 comparata sulla gamma
	Data di inizio e fine attività	Dal 2023 - Fine prevista al 2030 (Valutazione risultati su targets)
	Ufficio responsabile dell'implementazione	SHEQ - Qualità Ambiente Sicurezza e Sostenibilità

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Un modello di evento sostenibile in linea con le policy di sostenibilità dell'Università di Padova: verso la certificazione ISO 20121:2012
	Tipologia	Comunicazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	L'Università di Padova, nell'ambito delle sue attività istituzionali di Terza Missione, organizza centinaia di eventi all'anno tra cui seminari, conferenze, incontri, rassegne e spettacoli promossi sia dall'Amministrazione centrale che dai 32 Dipartimenti e 15 Centri. Nel 2022, anno dell'Ottocentenario, solo il palinsesto Universa, costituito da manifestazioni quali il festival Risvegli all'Orto Botanico, le iniziative di "Science for all" dedicate alla divulgazione scientifica e altri eventi istituzionali quali le Nobel lectures, ha registrato oltre 200.000 presenze. Diverse sono state le iniziative messe in campo negli anni per ridurre l'impatto ambientale degli eventi di Ateneo, soprattutto a livello di Amministrazione centrale, in linea con gli impegni definiti nella Carta degli Impegni di sostenibilità 2018-2022. Tra questi: - la drastica riduzione dei prodotti a stampa (programmi di sala, locandine, flyer), prediligendo segnaletica riutilizzabile e, laddove necessario stampare, utilizzando carte certificate FSC o ottenute dagli scarti di lavorazioni alimentari o altre; - l'attenta scelta dei gadget, laddove previsti, prediligendo merchandising prodotto responsabilmente e non marchiandolo con l'anno di riferimento in modo da poterlo riproporre in altre occasioni; - l'eliminazione della plastica monouso, utilizzando bottigliette e bicchieri di vetro, carta o materiali biodegradabili. Con la Carta degli Impegni di sostenibilità 2023-2027 ci si è posti l'obiettivo di mettere a sistema queste e altre buone pratiche attraverso l'adozione e implementazione di un modello certificabile per l'organizzazione degli eventi in linea con le policy di sostenibilità. Nel 2023 è stata condotta quindi un'analisi di fattibilità con l'obiettivo di valutare la conformità delle attuali pratiche adottate nell'organizzazione di eventi alle linee guida contenute nella norma ISO 21121:2012 "Event sustainability management systems" e le pratiche da integrare per allinearsi allo standard. Oggetto dell'analisi è stata l'Inaugurazione dell'anno accademico, l'evento che per complessità, rilevanza, numero di processi e persone coinvolte rappresenta il caso studio più completo e costituirà il caso "pilota" dal quale verrà avviato il processo di certificazione. L'Ateneo quindi procederà dapprima con il conseguimento della certificazione sul singolo evento dell'Inaugurazione dell'anno accademico per poi elaborare un modello applicabile da tutte le strutture e uffici di Ateneo per l'organizzazione di eventi, dal più semplice al più complesso. Questa esperienza sarà inoltre condivisa nell'ambito del Protocollo d'Intesa tra la Regione Veneto, ARPAV e Unioncamere Veneto, siglato nel 2019. Nel 2024 il Tavolo Tecnico ha scelto quale tema da approfondire la sostenibilità degli eventi. E' prevista entro il 2024 la redazione di un documento guida con il contributo di tutti i partner che sarà a disposizione di enti e realtà del territorio.
	Data di inizio e fine attività	Le attività di studio e indagine preliminari sono state svolte nel periodo compreso fra agosto e ottobre 2023; lo sviluppo del sistema di gestione degli eventi sostenibili con applicazione all'evento pilota (inaugurazione dell'anno accademico) avverrà entro il 2024. Il modello gestionale verrà poi adottato per tutti gli eventi futuri dell'Ateneo, sulla base delle linee guida redatte con l'obiettivo di fornire un supporto per l'adozione delle pratiche di sostenibilità nell'organizzazione degli eventi anche da parte delle strutture decentrate.
Implementazione	Ufficio responsabile dell'implementazione	L'azione verrà adottata dagli uffici dell'Area Comunicazione e Marketing con il supporto del CESQA - Centro Studi Qualità Ambiente del Dipartimento di Ingegneria Civile, Edile e Ambientale dell'Università di Padova.
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Strutture dell'Amministrazione Centrale e strutture decentrate dell'Ateneo; enti certificatori
	Beneficiari dell'azione	I beneficiari dell'azione saranno non solo tutte le persone che parteciperanno agli eventi organizzati dall'Ateneo, ma anche la comunità universitaria che avrà a disposizione un modello organizzativo al quale riferirsi per organizzare eventi sostenibili. Inoltre, la condivisione dell'esperienza di Ateneo in questo campo nell'ambito del Protocollo d'intesa sul GPP della Regione Veneto consentirà a molte istituzioni di disporre di una buona pratica sul tema.
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	NON APPLICABILE
	Costi di implementazione (Capex)	12.000 euro

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	SOSTITUZIONE SERRAMENTI
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede l'esecuzione di interventi di sostituzione dei serramenti in vari edifici dell'Ateneo con serramenti di nuova generazione a ridotta dispersione termica in grado di migliorare il comfort termico dei locali sia durante la stagione invernale che estiva. L'obiettivo è ottenere una trasmittanza del serramento inferiore a 1,30 W/m2K, limite massimo previsto per la zona climatica E, per l'accesso all'incentivo Conto Termico (limite di legge 1,40 W/m2K).
	Data di inizio e fine attività	2022-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Ufficio Facility ed Energy Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n.a.
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	30.000 Smc
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	82
	Costi di implementazione (Capex)	3.000.000 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	ISOLAMENTO TERMICO COPERTURE
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede la realizzazione di interventi di isolamento termico delle coperture, prevalentemente piane in vari edifici dell'Ateneo. Negli edifici oggetto di intervento di rifacimento dell'impermeabilizzazione della copertura, ove tecnicamente fattibile, sarà prevista l'ulteriore posa di materiali termici isolanti al fine di ridurre ulteriormente la dispersione. L'obiettivo è ottenere una trasmittanza della copertura inferiore a 0,20 W/m2K, limite massimo previsto per la zona climatica E per l'accesso all'incentivo Conto Termico (limite di legge 0,24 W/m2K).
	Data di inizio e fine attività	2022-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Ufficio Facility ed Energy Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n.a.
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	15.000 Smc
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	41
	Costi di implementazione (Capex)	1.800.000 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1

Definizione dell'azione	Nome dell'azione	SOSTITUZIONE CORPI ILLUMINANTI
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede il miglioramento nell'efficienza dei sistemi per l'illuminazione interni e delle pertinenze esterne di vari edifici dell'Ateneo tramite la sostituzione dei corpi illuminanti (plafoniere e lampade) con modelli a LED, il contestuale adeguamento dell'impianto elettrico e l'installazione di sistemi di controllo e regolazione. L'obiettivo è ottenere una riduzione superiore al 50% della potenza installata.
	Data di inizio e fine attività	2021-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Ufficio Facility ed Energy Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n/a
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	140.000 kWh
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	66
	Costi di implementazione (Capex)	1.500.000,00 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	SOSTITUZIONE GRUPPI CONTINUITA'
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede la sostituzione di gruppi di continuità (UPS) di edificio o a servizio di laboratori di ricerca, normalmente attivi H24 7/7, con modelli ad elevata efficienza e il contestuale adeguamento degli impianti di distribuzione elettrica permettendo una riduzione dei consumi propri di circa il 5%. La sostituzione dei sistemi obsoleti o poco efficienti proseguirà insieme alla sostituzione di soccorritori a servizio degli impianti di illuminazione di emergenza e di alimentazione delle cabine di media tensione.
	Data di inizio e fine attività	2019-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Ufficio Facility ed Energy Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n/a
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	200.000 kWh
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	94
	Costi di implementazione (Capex)	400.000 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1

Definizione dell'azione	Nome dell'azione	OTTIMIZZAZIONE GESTIONE AULE DIDATTICHE
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede diverse misure volte ad ottimizzare la gestione degli impianti di climatizzazione, termici e frigoriferi, e delle Centrali di Trattamento Aria (CTA) delle aule, quali: 1. Installazione di sistemi di controllo dell'accensione degli impianti di climatizzazione e delle CTA delle aule che permettano l'attivazione e lo spegnimento direttamente in loco dalla portineria o dall'ufficio tecnico della struttura in funzione dello stato di occupazione. 2. Installazione o eventuale rifacimento dei sistemi di termoregolazione delle CTA basato sulle condizioni ambientali (temperatura, umidità e concentrazione di CO2) 3. Installazione di elettropompe a velocità variabile e di valvole di by- pass differenziali al fine di regolare il funzionamento degli impianti in funzione dei reali fabbisogni;
	Data di inizio e fine attività	2022-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Ufficio Facility ed Energy Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n/a
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	200.000 kWh
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	95
	Costi di implementazione (Capex)	In fase di progettazione

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	OTTIMIZZAZIONE DATA CENTER
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede che l'Area Servizi Informatici e telematici (ASIT) governi il processo di razionalizzazione dei numerosi Data Center presenti in più edifici dell'Ateneo prevedendone la condivisione, l'accorpamento dei servizi IT e l'aumento del livello TIER dell'infrastruttura ai sensi dello standard TIA 942 contribuendo la riduzione dei fabbisogni energetici derivanti dall'alimentazione dei sistemi informatici e del loro raffreddamento.
	Data di inizio e fine attività	2024-2030
Implementazione	Ufficio responsabile dell'implementazione	Università degli Studi di Padova – Area ASIT
	Modalità di implementazione	Acquisto di beni o servizi
	Beneficiari dell'azione	Utenti Ateneo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n/a
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	200.000 kWh
	Numero di beneficiari potenziali per anno **	80.000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	94
	Costi di implementazione (Capex)	in fase di stima
	Costi operativi (Opex)	in fase di stima

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_Allegato 2

Definizione dell'azione	Nome dell'azione	SVILUPPO PROPOSTE PARTENARIATO PUBBLICO-PRIVATO
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'azione prevede lo sviluppo di proposte di Partenariato Pubblico-Privato (PPP) per la realizzazione di interventi di riqualificazione energetica di interi complessi e aree. Il PPP, disciplinato dall'art. 180 del codice dei contratti pubblici è una forma di cooperazione tra soggetti pubblici e privati, con l'obiettivo di finanziare la riqualificazione del patrimonio edile/impiantistico a carico dell'operatore economico proponente, che si assume il rischio di impresa, tramite la concessione, a fronte di un canone annuale, che remunera la gestione operativa, la manutenzione delle infrastrutture e la fornitura dei vettori energetici e di una compartecipazione pubblica alla spesa non superiore al 50%. La riqualificazione tecnologica è a carico del proponente comprensiva di adeguamento normativo, funzionale e di risparmio energetico. L'intervento prevede, inoltre, il ricorso a sistemi di generazione di energia elettrica da fonte rinnovabile ed interventi strutturali sugli edifici. Le aree ed i complessi che saranno oggetto di richiesta di una proposta di partenariato sono oggetto di valutazione.
	Data di inizio e fine attività ipotizzata	2024-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Collaborazione con società tipo ESCO, studi di progettazione e supporto legale
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Adeguamento tecnico
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Cambio parco luci da alogeno a LED palcoscenico e faretti palcoscenico
	Data di inizio e fine attività	gennaio 2025 - dicembre 2027
Implementazione	Ufficio responsabile dell'implementazione	direzione generale
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	non applicabile
	Beneficiari dell'azione	Dipendenti del TSV, artisti coinvolti
Impatto e costo	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	553kg/anno
	Costi di implementazione (Capex)	20000
	Costi operativi (Opex)	20000
	Fonte del finanziamento	Fonti interne / Fondi locali / FESR

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Magazzino digitale condiviso / progetto STAGEGO
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Il progetto STAGEGO si propone di rafforzare lo sviluppo economico sostenibile dei soggetti teatrali dell'area interessata attraverso l'efficientamento di pratiche di stoccaggio e gestione dei magazzini del patrimonio tessile di due importanti player dell'ambito spettacolo: il Teatro Stabile del Veneto - Teatro Nazionale e il Teatro Nazionale Sloveno di Nova Gorica. I due partner possiedono infatti un grande patrimonio tessile, che conta complessivamente di circa 16500 pezzi, la cui gestione non è organizzata al meglio. I costumi non sono ben catalogati, non esiste un criterio condiviso nella loro archiviazione, non c'è una gestione generale della loro manutenzione e complessivamente manca una reale consapevolezza di ciò che è veramente in possesso dei teatri. Per questo motivo, TSV ed SNGNG con il progetto STAGEGO intendono creare un magazzino digitale condiviso, che li porti a individuare una metodologia di archiviazione e catalogazione che risponda alle loro esigenze produttive e che, soprattutto, permetta loro di condividere il patrimonio tessile a seconda delle necessità, applicando il principio di economia circolare.
	Data di inizio e fine attività	ottobre 2024
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	finanziamento Intereg Italia-Slovenia
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	N/A
	Stima costi di implementaz	tot progetto 150.000€ (91.000€ TSV)

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Altri teatri

Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Adesione a Theatre Green Book
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Il network European Theatre si sta impegnando attivamente a diventare una rete di teatri a emissioni zero entro il 2030, come stabilito nel Codice d'Azione per la Sostenibilità di ETC. Un passo significativo in questo percorso verso la sostenibilità è la creazione dell'ETC Theatre Green Book, una collaborazione tra ETC, Renew Culture e la rinomata iniziativa "Theatre Green Book". L'ETC Theatre Green Book è una nuova versione dello strumento per guidare i teatri, passo dopo passo, verso emissioni nette zero – nelle loro produzioni, edifici e operazioni.I teatri membri del network sono direttamente coinvolti. Dal 2025, con l'ingresso nel network, il TSV si auspica di diventare uno dei teatri in cui applicare le linee guida pubblicate. Sarebbe utile, con il Comune di Padova, immaginare un edificio più green, come da linee guida pubblicate qui: https://theatregreenbook.com/wp-content/uploads/2021/11/GREEN-BOOK-2_00_beta.pdf, rendere le produzioni più sostenibili: https://theatregreenbook.com/wp-content/uploads/2021/03/THEATRE-GREEN-BOOK-ONE_beta1.pdf e i processi: https://theatregreenbook.com/wp-content/uploads/2022/02/GREEN-BOOK-3_01_Beta.pdf
	Data di inizio e fine attività ipotizzata	gennaio 2025 - dicembre 2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Inserimento di TSV in network ETC + risorse economiche

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Comune di Padova, enti che si occupano di mobilità, logistica e trasporti, enti che si occupino di efficientamento di edifici
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Transizione 5.0 - sensibilizzazione imprese alle opportunità per l'efficientamento energetico
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Iniziative di dissemination dedicate alle imprese produttive, volte a facilitare l'accesso alle opportunità tecnologiche e finanziarie per l'efficientamento energetico. A iniziare dalle misure "transizione 5.0", si organizzeranno in collaborazione con CCIAA di Padova iniziative volte a stimolare l'adozione delle nuove tecnologie anche facilitate dalla finanza agevolata, da parte delle imprese produttive del territorio.
	Data di inizio e fine attività	01.06.2024 - 31.12.2030
Implementazione	Ufficio responsabile dell'implementazione	Direzione
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	CCIAA di Padova
	Beneficiari dell'azione	Imprese produttive
Costo	Costi di implementazione (Capex)	nessuno
	Costi operativi (Opex)	60.000€
	Fonte del finanziamento	risorse proprie o finanziate ministeriali / europee

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Progetto +PADOVAxCHANGE, parte dell'iniziativa europea Scalable Cities
	Tipologia	Ricerca e sviluppo
	Ambito d'intervento	Edilizia industriale
	Descrizione	Il progetto +PADOVAxCHANGE è stato approvato all'interno dell'iniziativa europea Scalable Cities. Tale progetto ha come obiettivo quello di sviluppare, in collaborazione con il Comune di Padova e gli stakehoplders coinvolti, un Digital Twin (DT) di una parte della Zona Industriale di Padova per creare una roadmap verso obiettivi non solo a zero emissioni di carbonio, ma anche Positive Energy District. Il DT sarà creato, validato e utilizzato per simulare scenari futuri che prevedono la creazione di una rete di teleriscaldamento (utilizzando ad esempio il calore di scarto dell'inceneritore), l'aumento della produzione di energia da fonti rinnovabili (fotovoltaico) e lo sviluppo di comunità energetiche. Il Comune di Padova potrà così sfruttare le simulazioni energetiche per valutare diversi scenari di decarbonizzazione e sviluppare un piano di transizione per l'energia pulita.
	Data di inizio e fine attività	Da gennaio a dicembre 2024
Implementazione	Ufficio responsabile dell'implementazione	Divisione Innovation di R2M Solution
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Varisco, Lundbeck, Italchimica, Interporto, Peroni
	Beneficiari dell'azione	Aziende della Zona Industriale di Padova e Comune di Padova
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	Numero di beneficiari potenziali per anno **	5-10
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	50000 €
	Fonte del finanziamento	Finanziamento europeo

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	UN NUOVO PARCO IN OGNI COMUNE
	Tipologia	Adattamento
	Ambito d'intervento	Forestazione
	Descrizione	Il progetto si propone di realizzare delle nuove aree verdi, su suolo comunale, attraverso la messa a dimora di piante autoctone, effettuata con l'ausilio di cooperative sociali specializzate e con il coinvolgimento attivo delle scuole. Lo scopo è di avviare un progetto volto a sensibilizzare la cittadinanza sui temi ambientali e sulle piccole azioni concrete che si possono realizzare per migliorare la qualità dell'aria, attraverso la partecipazione fattiva dei ragazzi che potrebbero, assieme ad una cooperativa sociale, "adottare" degli alberi ed imparare a prendersene cura.
	Data di inizio e fine attività	2024-2025 con possibilità di ripetere il progetto negli anni successivi
Implementazione	Ufficio responsabile dell'implementazione	Servizio Agricoltura-Ambiente
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	Comuni della Provincia di Padova
Impatto e Costo	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	100.000€
	Fonte del finanziamento	Provincia di Padova + multiutilities Etra, acque venete e acergas aps

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Carbon Neutral Padova CMP
	Tipologia	Adattamento
	Ambito d'intervento	Edilizia industriale
	Descrizione	Interventi principali: - realizzazione di un impianto Fotovoltaico da 808Kw; - sostituzione delle caldaie a gas con installazione di impianti a pompa di calore di tipo geotermico dimensionata anche in funzione delle nuove necessità di climatizzare i nuovi spazi); - aggiornamento del sistema di Building Management System (BMS) sia in termini HW che SW e sua evoluzione; - sostituzione corpi illuminanti attuali con lampade a LED (950 pz); - attività sull'involucro edilizio; - riqualificazione paesaggistica del sito.
	Data di inizio e fine attività	revamping impianti 01/01/2022 - 31/12/2023 fotovoltaico 01/01/2022 - 31/12/2023 integrazione fotovoltaico 01/01/2022 - 31/12/2024
Implementazione	Ufficio responsabile dell'implementazione	IMMOBILIARE
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	1,5 Gwh/anno da Fotovoltaico
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Eliminato vettore Gas a favore di Pompa di Calore con geotermia, smc risparmiati oltre 200.000 smc/anno
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	1066 TonCO2/anno
	Costi di implementazione (Capex)	5 mln€
	Fonte del finanziamento	budget interno Poste Italiane

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Smart Building - Monitaraggio ambientale
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia industriale
	Descrizione	Installazione di un sistema di supervisione unico in grado di gestire in termini di Building ed Energy Management System, in maniera integrata e strutturata gli edifici coinvolti nel progetto. Le installazioni comprendono l'acquisizione di dati di misura di energia e valori ambientali (temperatura, umidità, luminosità, CO2).
	Data di inizio e fine attività	Periodo 2022-2023
Implementazione	Ufficio responsabile dell'implementazione	IMMOBILIARE
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n/a
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	24 installazioni eseguite su UP di piccole dimensioni con un risparmio di circa 41.000 kWh
	Costi di implementazione (Capex)	Investimento di circa 47k €
	Fonte del finanziamento	Budget interno Poste Italiane

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	SET-POINT DINAMICO GENERATORE DI VAPORE DI STABILIMENTO
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Il generatore di Vapore veniva gestito con set point di lavoro costante. In questo modo, veniva constantemente prodotta una certa quantità di vapore, utilizzata poi nei processi di stabilimento. Tuttavia, accadeva che non sempre tutto questo vapore/energia era utlizzata subito, e quindi capitava che questo vapore, in attesa di essere consumato, tendesse a raffreddarsi, ed avesse necessità di essere nuovamente riscaldato. Grazie all'utilizzo della tecnologia, ed in particolar modo dell'automazione e delle reti di telecomunicazioni, adesso è possibile conoscere anche a qualche km di distanza, in che stato si tova un determinato processo, e quindi se e quando avrà bisogno di vapore/energia. Sfruttando questa informazione, si regola il funzionamento del generatore di vapore, che produce il vapore solo quando è necessario, perchè c'è un processo che lo richiede, e nella quantità corretta, senza eccessi. In questo modo si ottimizza l'intero processo e la stessa rete di distribuzione vapore di stabilimento.
	Data di inizio e fine attività	Il processo è attivo da Maggio 2023.
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Tecnico Stab. di Padova - Direzione Generale Birra Peroni Italia
	Modalità di implementazione	Acquisto di beni o servizi
Impatto e costo	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	160.000 sm3 di CH4
	[Azioni di adattamento] Pericolo climatico mitigato *	Precipitazioni estreme
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	336
	Costi di implementazione (Capex)	20.000 €

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Nuova Alimentazioe Aria Torre Silos-Spinta Polveri, con ottimizzazione diametri e riduzione pedite di carico - Ottimizzazione Scarico Trebbie
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Riduzione della perdita di carico dal collettore generale all'utenza con un bypass DN150. Nuovo serbatoio buffer per evitare il consumo elevato di 500 m3/h per 3 minuti e mandare in crisi la distribuzione aria totale dello stabilimento. Riduzione dei tempi di spinta da 8 minuti a 3 minuti con dosaggio polveri nel buffer del mais
	Data di inizio e fine attività	Fine attività entro dicembre 2024
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Tecnico Stab. di Padova - Direzione Generale Birra Peroni Italia
	Modalità di implementazione	Acquisto di beni o servizi
	Beneficiari dell'azione	- Stabilimento Padova, Comunità locali
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n.a.
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	70 MWh risparmiati / anno
	Numero di beneficiari potenziali per anno **	Comunità Padova
	[Azioni di adattamento] Pericolo climatico mitigato *	Precipitazioni estreme
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	21,5 tCO2 non emesse / anno
	Costi di implementazione (Capex)	20.000 €

DEFINIZIONE AZIONI POSSIBILI_allegato 2

Definizione dell'azione	Nome dell'azione	Recupero Calore da altre realtà della Z.I.P.
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Potenziali progetti per il recupero del calore dalle altre realtà della Z.I.P, attualmente "costrette" a disperdere nell'ambiente, perché in eccesso al loro processo (es. termovalorizzatore). Il calore recuperato, potrebbe essere utilizzato all'interno del processo produttivo del birrificio per una considerevole riduzione delle emissioni di Scopo 1.
	Data di inizio e fine attività ipotizzata	2025 - 2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Partner per sostenere l'investimento, infrastruttura e permessi, impianti dedicati.
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	650 (dipendendo da progetto specifico stima potrebbe aumentare)
	Stima costi di implementazione (Capex)	Da valutare dipendendo tipologia progetto

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Possibili industrie / partner con rilevanti potenzialità di cessione cascami termici.
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Decarbonizzazione Passaggio Saggin 6 - Padova
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Intervento di riqualificazione energetica degli impianti di climatizzazione e ventilazione meccanica del civico 6 di Passaggio Saggin, parte del condominio Wolf Building, sito presso il Centro Direzionale de La Cittadella. Si prevede la sostituzione integrale dell'esistente impianto di climatizzazione ad acqua con chillers e caldaie a gas a favore di un impianto ad espansione diretta con pompe di calore per la climatizzazione estiva ed invernale. Verranno inoltre sostituita l'unità di trattamento aria a favore di unità di nuova generazione con recuperatori di calore. L'impianto è progettato per climatizzare in maniera indipendente ogni piano dell'immobile ed è ottimizzato mediante l'installazione di un sistema BMS per adattare l'erogazione alle condizioni climatiche interne ed esterne agli ambienti. L'intervento pertanto consente di: eliminare il gas spostando tutta la climatizzazione su vettore elettrico con decarbonizzazione del sito; riduzione dei consumi di energia primaria mediante uso di macchine di climatizzazione molto efficienti (idonee al conto termico), recupero del calore, ottimizzazione mediante BMS. La fornitura di energia avverrà mediante energia con certificato di origine verde.
	Data di inizio e fine attività	Maggio 2024 - fine anno 2024
Implementazione	Ulteriori stakeholder coinvolti	Proprietà, conduttori degli immobili, società di ingegneria e società di realizzazione e manutenzione
	Beneficiari dell'azione	conduttori dell'immobile e proprietà
	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	0
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Si stima siano stati sostituiti circa 10.000 smc/anno di gas metano (stima elaborata su un consumo medio annuo rispetto alla classe energetica dell'edificio perchè privi di consumi storici antecedenti all'intervento di riqualificazione a causa della presenza di spazi sfitti); Si stima una riduzione del consumo di energia elettrica rispetto al precedente impianto di circa 5000 kWh/anno

Impatto & costo	Numero di beneficiari potenziali per anno **	circa 80 persone presenti mediamente nell'immobile
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	17,92
	Costi di implementazione (Capex)	150.000,00 €
	Costi operativi (Opex)	2.000,00 €
	Fonte del finanziamento	mista bancaria/equity

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Decarbonizzazione Corso Stati Uniti 14 bis
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Intervento di riqualificazione energetica degli impianti di climatizzazione e ventilazione mecanica del complesso direzionale di Corso Stati Uniti 14 bis, costituito da 4 corpi di fabbrica di cui tre oggetto di intervento. Il quarto immobile è a destinazione mista uffici - magazzino. Si prevede la sostituzione integrale dell'esistente impianto centralizzato ad acqua con chillers e caldaie a gas a favore di un impianto ad espansione diretta con pompe di calore per la climatizzazione estiva ed invernale. Verranno inoltre sostituite le unità di trattamento aria a favore di unità di nuova generazione con recuperatori di calore e realizzati nuovi canali di ripresa. L'impianto è progettato per climatizzare in maniera indipendente ogni singolo pianodegli edifici ed è ottimizzato mediante l'installazione di un sistema BMS per adattare l'erogazione alle condizioni climatiche interne ed esterne agli ambienti. Al fine di abbassare il fabbisogno energetico, si provvede inoltre a sostituire tutti i corpi illuminanti fluorescenti con corpi led. L'intervento pertanto consente di: eliminare il gas spostando tutta la climatizzazione su vettore elettrico con decarbonizzazione del sito; riduzione dei consumi di energia primaria mediante uso di macchine di climatizzazione molto efficienti (idonee al conto energia), recupero del calore, ottimizzazione mediante BMS e relamping led. La fornitura di energia avvine mediante energai con certificato di origine verde. Si è ipotizzata la realizzazione di un impianto fotovoltaico in sito ma al momento non è stata deliberata.
	Data di inizio e fine attività	ottobre 2024 - fine anno 2025
Implementazione	Ulteriori stakeholder coinvolti	Prorpietà, conduttori degli immobili, società di ingegneria e società di realizzazione
	Beneficiari dell'azione	conduttori dell'immobile e proprietà
	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	0

Impatto & costo	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	72.500 smc di gas metano sostituiti; riduzione dei consumi di energia pari a 132.569 kWh; passati da gas metano + energia a sola energia elettrica generata da impianti da fornte rinnovabile con certificato di origine
	Numero di beneficiari potenziali per anno **	circa 600 persone presenti nell'immobile
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	147,59
	Costi di implementazione (Capex)	1245000
	Costi operativi (Opex)	da 55000/anno ante intervento a 5000/anno post intervento
	Fonte del finanziamento	mista bancaria/equity

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	ddg snc - Net Center - Polo Immobiliare e culturale Sostenibile
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Modiche delle infrastrutture neurali dell'edificio con utilizzo dell' intelligenza artificiale per la gestione dei rifiuti, delle acque , del cibo, del verde con stakeholder di filiera locale . Installazione di tre impianti di energia rinnovabile (pannelli fotovoltaici) di potenza complessiva pari a 827 Kwh che si sono costituiti in nella CER-NET il 17 maggio 2024 con regolare statuto e regolamento di attuazione e contratto per la fornitura di energia elettrica al 100% verde con la società Hera spa - Detta comunità energetica ha anche lo scopo di consentire agli utenti all'interno dell'area di competenza della cabina primaria di distribuzione di accedervi così da agevolare il superamento della c.d. povertà energetica, oltre ad accogliere ogni edificio che desideri farne parte. I soci fondatori sono soggetti di diritto privato.
	Data di inizio e fine attività	gennaio 2023 - maggio 2024
Implementazione	Ufficio responsabile dell'implementazione	DDG snc - Andrea Garbo - Amministratore
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Tutta la filiera dei fornitori del complesso immobiliare con raggiungimento della qualifica di sostenibilità entro il 2025
	Beneficiari dell'azione	ambiente - cittadini - ospiti e fruitori del complesso immobiliare - ogni singola azienda insediata nel complesso net che potrà valorizzarsi attraverso il percorso di sostenibilità - Il complesso stesso come struttura e oggetto architettonico.
	[Azioni di mitigazione] Energia rinnovabile generata - MW/anno *	kWh 904.000

Impatto & costo	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Energia risparmiata 1.000.000 di kWh ovvero 361.600 kg di CO_2 non immessa nell'aria
	Numero di beneficiari potenziali per anno **	800 persone in 125 aziende
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	161,43 tep/anno
	Costi di implementazione (Capex)	2.100.000,00 euro
	Costi operativi (Opex)	56.000 euro
	Fonte del finanziamento	fondi propri

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Aria Compressa
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Demolizione compressori esistenti e installazione di nuova unità sotto inverter e ad alto risparmio energetico in modo da efficientare il processo di produzione e distribuzione dell'aria compressa all'interno dello stabilimento
	Data di inizio e fine attività	2025
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 110 [MWh/y]
	Numero di beneficiari potenziali per anno **	n.a.
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	35 [tCO2eq/anno]
	Costi di implementazione (Capex)	150.000,00 €

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Fotovoltaico in situ
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Installazione di 4 isole fotovoltaico per produzione interna di energia elettrica ad autoconsumo
	Data di inizio e fine attività	2024
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	500 [MWh/y]
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Δ (ante-post) = 500 [MWh/y]
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	160 [tCO2eq/anno]
	Costi di implementazione (Capex)	100.000,00 €

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Nuovo Chiller -20°C
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Ai fini produttivi è richiesta la produzione e conseguente distribuzione di acqua glicolata come vettore termico di frigorie. Tale liquido viene raffreddato attraverso un impianto di chillers ad ammoniaca che risulta avere delle performance migliorabili. il progetto prevede quindi la sostituzione dell'attuale chiller ad ammoniaca con unità a COP migliore in modo da ridurre il consumo energetico a parità di performance della macchina. la nuova macchina continuerà ad avere come fluido refrigerante R717 (ammonaica) a GWP trascurabile
	Data di inizio e fine attività	2026-2027
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	n.a.
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 220 [MWh/annui]
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	70 [tCO2eq/anno]
	Costi di implementazione (Capex)	300.000,00 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Generazione distribuita olio diatermico a 250 °C
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Attualmente è previsto un riscaldamento centralizzato dell'olio diatermico, il quale viene distribuito all'interno dello stabilimento. L'obiettivo di tale progetto è quello di delocalizzare il riscaldamento (generazione) dell'olio diatermico all'interno dei principali reparti utilizzatori, andando quindi a creare delle isole dedicate. in questo modo sarà possibile accendere solo il reparto che presenta domanda di questo fluido termovettore. Si prevede quindi l'installaizone di nr. 3 skid di generazione olio diatermico a servizio, ciascuno, del reparto 13, 3B e 02, con una temperatura da raggiungere intorno ai 250°C
	Data di inizio e fine attività	2027
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 100 [MWh/y]
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	30 [tCO2eq/anno]
	Costi di implementazione (Capex)	200.000,00 €

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Recupero Termico compressore
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	installazione di un sistema di valorizzazione del calore recuperato dai nuovi compressori (già predisposti con scambiatorie di calore) attraverso la creazioe di un circuito dell'acqua sanitaria. tale circuito andrà a servire le attuali utenze gestite con caldaia di tipo domestico (spogliatoi) o termoconvettore (riscaldamento officina). le restanti calorie non utilizzato al punto d'uso verranno scambiate al flusso in ingresso al degasatore in modo da ridurre il consumo di vapore per riscaldare l'acqua in alimento alle caldaie.
	Data di inizio e fine attività	2026
Implementazione	Ufficio responsabile dell'implementazione	Servizi Tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 22 [MWh/y]
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	7 [tCO2eq/anno]
	Costi di implementazione (Capex)	150.000,00 €

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Relamping
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	attività di sostituzione dei corpi illuminanti con unità a maggior risparmio energetico a parità di prestazioni. Le aree coinvolte saranno: aree esterne, reparto produttivo R02 (zona atex), Magazzino e Officina. il tutto verrà corredato con uno studio illuminotecnico per valutare l'eventuale necessità di aggiungere o togliere corpi illuminanti per rispettare le condizioni richieste dall'ambiente di lavoro.
	Data di inizio e fine attività	2026
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante- post) = 30 [MWh/y]
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	10 [tCO2eq/anno]
	Costi di implementazione (Capex)	200.000,00 €

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Revamping HVAC Reparto 05
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Upgrade hardware/software dei sistemi di supervisione degli impianti di trattamento aria (HVAC) a servizio del R05 in modo da ottimizzare il consumo energetico delle macchine (energivore)
	Data di inizio e fine attività	2027
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 20 [MWh/y]
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	6 [tCO2eq/anno]
	Costi di implementazione (Capex)	200.000,00 €

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Riqualificazione Reparto Biologico - nuova Osmosi Inversa
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Sostituzione dell'unità di trattamento finale di osmosi inversa (attualmente costitutia da due unità in serie) con una nuova unità ad alta efficienza energetica
	Data di inizio e fine attività	2026
Implementazione	Ufficio responsabile dell'implementazione	servizi tecnici
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	n.a.
	Beneficiari dell'azione	LuPI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il	Δ (ante-post) = 520 [MWh/y]
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	170 [tCO2eq/anno]
	Costi di implementazione (Capex)	400.000,00 €

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Produzione ed accumulo di energia elettrica da impianti fotovoltaici
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Produzione di energia elettrica da impianto fotovoltaico di 668 kwp e ottimizzazione dello stoccaggio dell'energia non usata immediatamente nelle attività di movimentazione . Accumulo elettrochimico da 1,5 Mwh per abbattere i prelievi da rete Enel richiesti dalle gru a portale.
	Data di inizio e fine attività	gennaio 2023-gennaio 2025
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Tecnico
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Interporto Spa
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	780
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	670 Mwh
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	201
	Costi di implementazione (Capex)	1.560.000 €
	Costi operativi (Opex)	15.000 €/anno

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Promozione di un servizio di diagnosi per l'efficienza energetica degli stabilimenti industriali
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	le imprese un servizio strutturato di diagnosi energetica per individuare quali siano le inefficienza dei processi industriali, partendo dall'analisi dei consumi (fotografia dello stato di partenza) per individuare i margini di ottimizzazione e di riduzione dei consumi di energia in ottica di decarbonizzazione. Saranno misurate le emissioni di CO2 prima e dopo l'intervento di ottimizzazione, dando quindi modo di inserire nel conteggio della riduzione di emissioni del Comune di Padova la riduzione delle emissioni industriali
	Data di inizio e fine attività	giugno 2024- dicembre 2030
Implementazione	Ufficio responsabile dell'implementazione	Area politiche industriali energia e sostenibilità di Confindustria Veneto Est
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	Imprese e tecnici dell'energia di Forema
	Beneficiari dell'azione	Comune di Padova per la contabilizzazione delle emissioni di CO2
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	da quantificare a seguito degli interventi di ottimizzazione
	Numero di beneficiari potenziali per anno **	Imprese associate operative nel Comune di Padova (335 in totale): circa 50 imprese/anno

Impatto & costo	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	5% medio delle emissioni ci CO2 anno per azienda
	Fonte del finanziamento	BUDGET INTERNO Confindustria

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	GREEN ROUTINE
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Azione promozionale e volontaria a partire dal basso per promuovere un'attenzione ai consumi, un uso più copnsapevole del proprio ufficio, delle attrezzature dei materiali di consumo, nonché l'attuare una serie di comportamenti per avere più cura del proprio posto di lavoro.
	Data di inizio e fine attività	gennaio 2023_in corso
Implementazione	Ufficio responsabile dell'implementazione	Direzione aziendale con supporto ufficio Ambiente e sicurezza di Confartigianato Imprese Padova e UPA Servizi spa
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Riduzione tempi di permanenza in sede, miglioramento del benessere, riduzione complessiva dei consumi termici ed energetici
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	18 MWh elettrici (le due sedi di Confartigianato hanno il valore termico condominiale) risparmiati nel 2023 (-16% dei consumi) rispetto all'anno precedente, che combinato con il miglioramento delle condizioni di mercato ha prodotto un risparmio di euro 28.000 (-50% anno precedente)
	Numero di beneficiari potenziali per anno **	70
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	zero

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	SMART WORKING
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Chiusura definitiva delle due sedi di Confartigianato Padova nella giornata di venerdì con organizzazione di lavoro in modalità smart working
	Data di inizio e fine attività	gennaio 2023 ad oggi
Implementazione	Ufficio responsabile dell'implementazione	Direzione aziendale con supporto ufficio Ambiente e sicurezza di Confartigianato Imprese Padova e UPA Servizi spa
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	70 lavoratori dipendenti del sistema associativo di Confartigianato
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	2.367 KW di elettricità risparmiata
	Numero di beneficiari potenziali per anno **	70
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	0,7311 tonn. Di risparmio
	Costi di implementazione (Capex)	zero

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	ESG Padova: Verso una Industria Responsabile e Sostenibile
	Tipologia	Comunicazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	- Sensibilizzazione dell'industria padovana in temi ESG; Promuovere l'adozione di certificazioni e standard internazionali riconosciuti nel campo ESG; sessioni informative su come ottenere e mantenere queste certificazioni, verranno evidenziati i benefici che possono portare alle aziende in termini di reputazione e accesso a finanziamenti. - Osservazione e monitoraggio degli investimenti 5.0 sul territorio per riduzione dei consumi energetici; sensibilizzazione sulle tematiche legate all'efficienza energetica e alla sostenibilità. Coinvolgimento delle imprese associate nell'adozione di comportamenti più responsabili in termini di consumo energetico creando una cultura del risparmio energetico sul territorio.
	Data di inizio e fine attività	2024 - 2030
Implementazione e Costo	Beneficiari dell'azione	Piccole e medie imprese
	Costi operativi (Opex)	€4.500
	Fonte del finanziamento	Budget Interno

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Sostituzione serramenti e fan coil
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia industriale
	Descrizione	Abbiamo previsto la sostituzione per la sede di Padova di tutti i serramenti esterni ed i fan coil degli uffici. Complessivamente saranno sostituiti 305 serramenti e 360 fan coil. Da progetto si prevede il miglioramento di due classi come prestazione energetica del fabbricato (da classe E a classe C). L'intervento riguarda circa 8.000 mq di uffici con 490 postazioni di lavoro
	Data di inizio e fine attività	Marzo 2024 - Dicembre 2024
Implementazione	Ufficio responsabile dell'implementazione	Direzione Tecnologie - Servizi Tecnici per Immobili e Impianti
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Dipendenti InfoCamere
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	Non Applicabile
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	200.000 kWh/anno
	Numero di beneficiari potenziali per anno **	500
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	1700000 €
	Costi operativi (Opex)	invariati
	Fonte del finanziamento	fondi propri

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Sostituzione di Climatizzatori di precisione nel Data Center
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Abbiamo previsto la sostituzione degli apparati per la climatizzazione del Data Center. Al momento abbiamo ancora 12 climatizzatpori di precisione di vecchia generazione installati nel 2002 che prevediamo di sostituire progressivamente entro il primo semestre 2026
	Data di inizio e fine attività	aprile 2024 - giugno 2026
Implementazione	Ufficio responsabile dell'implementazione	Direzione Tecnologie - Servizi Tecnici per Immobili e Impianti
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	280.000 kWh/anno
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	500000 €
	Costi operativi (Opex)	invariati
	Fonte del finanziamento	Fondi propri

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Messa a disposizione di colonnine ricarica elettrica auto e bici per dipendenti InfoCamere
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Abbiamo previsto di lasciare a disposizione per i dipendenti InfoCamere dei punti di ricarica per auto e bici elettriche presso la sede di Padova. Nel parcheggio interno ci sono 12 colonnine di ricarica auto con potenza sino a 22kW e 8 punti di ricarica bici/monopattini
	Data di inizio e fine attività	aprile 2024 - dicembre 2030
Implementazione	Ufficio responsabile dell'implementazione	Direzione Tecnologie - Servizi Tecnici per Immobili e Impianti
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	dipendenti InfoCamere
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	20.000 kWh/anno
	Numero di beneficiari potenziali per anno **	24 auto e 16 mezzi a due ruote ricaricabili per ogni giorno lavorativo
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	
	Costi operativi (Opex)	4.600 €/anno
	Fonte del finanziamento	Fondi propri

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Sostituzione lampade fluorescenti con nuove lampade a LED
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia industriale
	Descrizione	Presso la sede di Padova abbiamo ancora quasi tutti gli ambienti illuminati con lampade a fluorescenza e prevediamo entro il 2030 di aggiornare l'impianto di illuminazione con nuove pampade a LED. Complessivamente sono circa 950 nuove lampade a LED da installare su 6 piani di uffici e sale riunioni
	Data di inizio e fine attività	Gennaio 2025 - Dicembre 2030
Implementazione	Ufficio responsabile dell'implementazione	Direzione Tecnologie - Servizi Tecnici per Immobili e Impianti
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	500 dipendenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	72.000 kWh/anno
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	500 lavoratori
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	95000 €
	Costi operativi (Opex)	
	Fonte del finanziamento	fondi propri

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Edilizia Sostenibile e Sicura
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	CNA ha aderito 13 anni fa a network CasaClima, il quale si prefigge l'obiettivo di promuovere l'adozione di modelli, tecniche e materiali innovativi per la realizzazione di edifici a basso impatto ambientale. Attraverso questa iniziativa, abbiamo organizzato attività formative, seminari e visite guidate per le nostre imprese, attualmente arricchite da un progetto finanziato dal Fondo Sociale Europeo. Allo stesso modo, sei anni fa, è nato un network interno a CNA, "Edilizia+", che conta circa trenta imprese impegnate in un protocollo di sostenibilità che abbraccia l'attenzione all'ambiente, al cliente e alla sicurezza sul lavoro. L'impegno è di continuare a promuovere con momenti formativi e informativi le imprese che operano sul territorio, i cittadini e i soggetti pubblici, allargando la rete di soggetti che operano in armonia con il Network CasaClima e con il gruppo di Edilizia+. CNA continuerà inoltre, sul solco di quanto descritto, la sua collaborazione con il Comune di Padova all'interno dello "sportello energia".
	Data di inizio e fine attività	2024-2030
Implementazione	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Comune di Padova
	Beneficiari dell'azione	Imprese del "sistema casa" (edilizia, impiantistica); cittadini
Costo	Costi operativi (Opex)	Personale impiegato e costi di gestione attività: 80mila euro

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Energia rinnovabile
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	CNA Padova e Rovigo e CNA Nazionale credono molto e hanno organizzato attività formative, informative e tecniche sui temi dell'utilizzo di energie rinnovabili, fra cui CER e Gruppi di autoconsumo. L'impegno è quello di continuare a promuovere queste modalità di consumo di energia, con l'obiettivo di individuare sia i soggetti che potranno prendere parte a nuovi gruppi di consumo collettivo di energia, sia di individuare gli operatori del settore adatti all'installazione degli appositi pannelli fotovoltaici. CNA continuerà inoltre, sul solco di quanto descritto, la sua collaborazione con il Comune di Padova all'interno dello "Tavolo CERS" per la realizzazione di nuove Comunità energetiche nel territorio.
	Data di inizio e fine attività	2024-2030
Implementazione	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Imprese del "sistema casa" (edilizia, impiantistica); cittadini
Costo	Costi operativi (Opex)	Personale impiegato e costi di gestione: 25mila euro

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Sostenibilità in azienda
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Ci impegneremo a realizzare dei percorsi informativi e formativi, dedicati alle imprese che operano nella produzione, dedicati al tema della sostenibilità in azienda: innovazione in ottica green e 5.0, carbon print, bilancio di sostenibilità. L'obiettivo è di sensibilizzare il maggior numero di imprese sull'importanza di ridurre il proprio impatto emissivo e di mettere in campo azioni compensative (es. piantumazione alberi).
	Data di inizio e fine attività	2024-2026
Implementazione	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Imprese della produzione
Costi	Costi operativi (Opex)	Personale impiegato e costi di gestione: 20 mila euro

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Cherry ESG Circle
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Il servizio Cherry ESG circle è la soluzione di finanziamento per le imprese a supporto di investimenti in ambito ESG che ha come obiettivo la creazione di un circolo virtuoso non solo dal punto di vista finanziario ma anche ambientale, sociale e di governance. Richiedendo un finanziamento ESG l'azienda ha la possibilità di beneficiare gratuitamente di 2 assessment sullo stato ESG della propria impresa. A fronte di un miglior punteggio sulla seconda valutazione la Banca offre condizioni agevolate sulla stipula di un eventuale secondo finanziamento con finalità ESG. Plafond 10mln. periodo 2023-2030 - importo minimo 100k - max 1mln. per singola controparte.
	Data di inizio e fine attività	Settembre 2023 – in corso
Implementazione	Ufficio responsabile dell'implementazione	Direzione Commerciale
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	Partner tecnico in grado di misurare lo stato ESG del cliente e proporre soluzioni di ottimizzazione
	Beneficiari dell'azione	PMI del territorio. Nel corso nel 2023 erogato 1mln.
Costo	Costi di implementazione (Capex)	Eur 105.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Finanziamento PMI
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Finanziamento con finalità green con garanzia MCC o SACE. Durata massima 8 anni. Spese di istruttoria: 1% comprensivo dell'eventuale costo della garanzia MCC - Tasso Euribor3mesi + 2 % comprensivo dell'eventuale costo della garanzia SACE.
	Data di inizio e fine attività	2024-2030
Implementazione	Ufficio responsabile dell'implementazione	Corporate Banking
	Modalità di implementazione	Supporto economico a terzi
	Ulteriori stakeholder coinvolti	Comune di Padova
	Beneficiari dell'azione	Comunità
Impatto e costo	Numero di beneficiari potenziali per anno **	Plafond di 10 milioni
	Costi di implementazione (Capex)	Eur 105.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Green Fleet
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Progressiva elettrificazione del parco auto aziendale. A partire dal 2023 la Banca adotta una car poilcy che impone l'utilizzo di auto aziendali ibride e/o elettriche. Si prevede, entro il prossimo triennio di raggiungere percentuali di applicazione superiori al 50%.
	Data di inizio e fine attività	Gennaio 2023 - Dicembre 2027
Implementazione	Ufficio responsabile dell'implementazione	Facility Management
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	Società di leasing e noleggio
	Beneficiari dell'azione	Dipendenti Banca
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	dal 2024 gli uffici di direzione presso il net center di Padova, sono alimentati per circa 1/3 dall'energia autoprodotta dai pannelli fotovoltaici condominiali, la rimanente energia elettrica fornita dalla rete è per il 38% verde, ma dal mese di agosto sarà al 100% verde. Il parco auto aziendale composto da diverse auto ibride e 5 full electric, utilizza tale energia per buona parte delle ricariche elettriche effettuate su Padova.
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Sostituzione del combustibile fossile con utilizzo di energie alternative
	Numero di beneficiari potenziali per anno **	50
	Costi di implementazione (Capex)	Eur 10.000
	Costi operativi (Opex)	dati non disponibili

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	New Cherry HQ
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia industriale
	Descrizione	Realizzazione del nuovo HQ di Cherry Bank, riqualificando e ampliando le capacità ricettive del territorio fornendo un servizio alla comunità finanziaria padovana.
	Data di inizio e fine attività	Gennaio 2023 - Dicembre 2025
Implementazione	Ufficio responsabile dell'implementazione	Facility Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	Comune di Padova, Imprese appaltanti, fornitori
	Beneficiari dell'azione	Comunità Padova / dipendenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	Dal 2026 si prevede di trasferire gli uffici di direzione nella nuova sede la cui costruzione partirà entro il corrente anno. L'immobile sarà dotato di un impianto fotovoltaico che potrà soddisfare indicativamente il 60% del fabbisogno energetico dello stabile.
	Numero di beneficiari potenziali per anno **	1000
	Costi di implementazione (Capex)	Eur 10.000.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Piantumazione alberi
	Tipologia	Mitigazione
	Ambito d'intervento	Forestazione
	Descrizione	Nell'ambito delle attività di riqualificazione del nuovo HQ della Banca, si provvederà a potenziare la copertura arborea della città realizzando un parco urbano
	Data di inizio e fine attività	Gennaio 2023 - Dicembre 2025
Implementazione	Ufficio responsabile dell'implementazione	Facility Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	Comune di Padova
	Beneficiari dell'azione	Comunità
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di adattamento] Pericolo climatico mitigato *	Ondate di calore
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	Eur 20.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	NS4nZEBs
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	progetto europeo finanziato dal programma europeo Life per rafforzare le competenze dei tecnici e degli installatori verso edifici nZEB
	Data di inizio e fine attività	1-9-2023 / 31-8-2026
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Progetti di sviluppo del territorio – Camera di Commercio Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	enti di formazione, associazioni imprenditoriali, comune di Padova, università, asvess
	Beneficiari dell'azione	installatori, imprese, professionisti, enti di formazione
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	tbd
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	tbd
	Numero di beneficiari potenziali per anno **	50
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	tbd
	Costi di implementazione (Capex)	130000
	Costi operativi (Opex)	102600

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Cirevalc
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Politiche per il cibo
	Descrizione	progetto europeo finanziato dal programma Interreg Central Europe per promuovere una riduzione dei rifiuti nella filiera agroalimentareererterLife per rafforzare le competenze dei tecnici e degli installatori verso edifici nZEBI
	Data di inizio e fine attività	1-5-2023 / 30-4-2026
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Progetti di sviluppo del territorio – Camera di Commercio Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	enti di formazione, associazioni imprenditoriali, comune di Padova, università, asvess
	Beneficiari dell'azione	PMI della filiera agroalimentare
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	60
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	tbd
	Costi di implementazione (Capex)	300000
	Costi operativi (Opex)	287760

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Cradle-ALP
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	progetto europeo finanziato dal programma Interreg Alpine Space per promuovere l'economia circolare
	Data di inizio e fine attività	1-11-2022 / 31-10-2025
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Progetti di sviluppo del territorio – Camera di Commercio Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	associazioni imprenditoriali, comune di Padova, università, regione del veneto
	Beneficiari dell'azione	imprese e professionisti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	tbd
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	tbd
	Numero di beneficiari potenziali per anno **	60
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	tbd
	Costi di implementazione (Capex)	330000
	Costi operativi (Opex)	308500

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Costituzione CERS Padova
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Costituzione CERS
	Data di inizio e fine attività ipotizzata	
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Stima costi di implementazione (Capex)	

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	sì
Se sì, indica di seguito con chi	Comune di Padova e altri stakeholders
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Verso la sostenibilità - rinnovo parco rotabile
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Il piano di rinnovo del parco mezzi circolante di Busitalia Veneto Spa prevede, entro il 2030, la sostituzione dei più obsoleti mezzi in circolazione con autobus con alimentazione elettrica, ibridi e metano di recente tecnologia e la completa elettrificazione di alcuni depositi per la ricarica dei bus elettrici
	Data di inizio e fine attività	01/01/2024 - 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Busitalia Veneto Spa
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	Comune di Padova
	Beneficiari dell'azione	Busitalia Veneto Spa
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	640
	Costi di implementazione (Capex)	€ 2.701.640,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_allegato 2		
Definizione dell'azione	Nome dell'azione	Verso la sostenibilità - completo rinnovo parco rotabile
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Ulteriore ammodernamento del parco autobus in caso di disponibilità di nuove fonti di finanziamento pubbliche con l'obiettivo di conseguire la totale decarbonizzazione del parco bus urbano e/o attivare la sperimentazione di fonti di alimentazione alternative completamente eco-sostenibili
	Data di inizio e fine attività ipotizzata	2026-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	finanziamenti

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	altre aziende e soggetti industriali interessati
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	Mobilità sostenibile - riduzione impatto spostamenti casa lavoro
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Dal 2022 è attivo un accordo tra Banca Etica e i dipendenti per poter lavorare in modo agile (smart working) in modo continuativo per un massimo di 15 gg al mese. Questo ha portato ad una riduzione di CO2 dovuta ai trasporti degli spostamenti casa lavoro di: - nel 2022 > 152 tonnellate di CO2 evitate - nel 2023 > 137 tonnellate di CO2 evitate Possiamo ipotizzare una media, per i prossimi anni, di circa 145 tonnelate di CO2 evitate/anno. La banca riconosce il rimborso di un mese di abbonamento sui trasporto pubblico per chi ne usufruisce per almeno 6 mesi. La banca, in sede centrale, per incentivare il trasporto green, ha 2 colonnine per la ricarica di auto elettiche riservate ai dipendenti (servizio gratuito) e 1 colonnina fronte stazione centrale a disposizione dei cittadini (a pagamento).
	Data di inizio e fine attività	In corso-fino al 2030.
Implementazione	Ufficio responsabile dell'implementazione	Sviluppo e gestione risorse umane + ufficio logistica
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	cittadini
	Beneficiari dell'azione	dipendenti della sede centrale e della filiale di Banca Etica (120 persone)
Impatto e costo	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	una media di 145 tonnellate annue di CO2 evitata - ricarica su colonnine elettriche 5 tonnellate annue di CO2 evitate
	Numero di beneficiari potenziali per anno **	120 dipendenti + cittadini
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	145 anno
	Costi di implementazione (Capex)	Zero per lo smart working 10.000 €/anno per le colonnine
	Costi operativi (Opex)	residuali

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	Fornitura energia da fonti rinnovabili
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	fornitura energetica green certificata attraverso la coop E' Nostra
	Data di inizio e fine attività	In corso-fino al 2030
Implementazione	Ufficio responsabile dell'implementazione	Ufficio tecnico logistico
	Modalità di implementazione	Acquisto di beni o servizi
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	risparmiante 130 tonnellate annue di CO2 con fornitura esclusiva di energia da fonti rinnovabili
	Costi di implementazione (Capex)	residuali
	Costi operativi (Opex)	€ 105.000 per fornitura energia alla sede centrale e alla filiale di Padova

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	Eventi verso l'impatto zero
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Riduzione dell'impatto ambientale degli eventi e compensazione delle emissioni inevitabili
	Data di inizio e fine attività	Inizio: 26 e 27 febbraio 2024 (evento 1) , 8 marzo (evento 2)
Implementazione	Ufficio responsabile dell'implementazione	Impatto e VSA
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	ETIFOR
	Beneficiari dell'azione	Ambiente
Impatto & costo	[Azioni di mitigazione] CO_2 compensata tramite operazioni di salvaguardia della flora e impianto alberi	265,5 t
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	
	Costi di implementazione (Capex)	residuali
	Costi operativi (Opex)	6.675,00 euro

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	Installazione nuovo tetto fotovoltaico
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	installazione di pannelli fotovoltaici su immobile in corso di ristrutturazione per una potenza installata di 50 kwh
	Data di inizio e fine attività	1.1.2025-31.12.2025
Implementazione	Ufficio responsabile dell'implementazione	Ufficio tecnico logistico
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	cittadinanza
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	50kwh
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	stima di 60.000 kw/anno di produzione
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	28 tonnellate di CO2 /anno
	Costi di implementazione (Capex)	euro 125.000
	Costi operativi (Opex)	residuali

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_Allegato 1		
Definizione dell'azione	Nome dell'azione	Pacchetti Finanziari Padova 2030
	Tipologia	Supporto finanziario
	Ambito d'intervento	Edilizia civile
	Descrizione	Banca Etica metterà a disposizione: - dei cittadini (persone fisiche) appositi conti correnti, finanziamenti e possibilità di risparmio e investimento; - delle organizzazioni (imprese, associazioni, ETS,Cooperative..) appositi conti correnti, finanziamenti, servizi di accompagnamento tecnico e finanziario alla creazione di CER e la possibilità di aderire alla fornitura di energia elettrica rinnovabile Energia èNostra per clienti e soci Banca Etica; - delle persone giuridiche appositi prodotti e finanziamenti per il settore energia efficientamento energetico. Maggiori dettagli sono forniti nel modulo descrittivo.
	Data di inizio e fine attività	2024-2030
	Modalità di implementazione	Supporto economico a terzi
	Beneficiari dell'azione	cittadini, imprese, persone giuridiche
Costi	Costi di implementazione (Capex)	in fase di definizione

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_Allegato 2

Definizione dell'azione	Nome dell'azione	Comunità Energetiche Rinnovabili
	Tipologia	Supporto finanziario
	Ambito d'intervento	Edilizia civile
	Descrizione	Banca Etica è pronta a progettare, in collaborazione con il Comune di Padova, l'avvio di una o più Comunità Energetiche Rinnovabili, sia come intallazione, sia come finanziamento con appositi prodotti dedicati. Si tratta anche di un progetto educativo e di disseminazione di interesse della cittadinanza e di promozione di misure di contrasto alla povertà.
	Data di inizio e fine attività ipotizzata	2025
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Chiarimento sulla normativa, infrastrutture (tetti)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Stima costi di implementazione (Capex)	

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_Allegato 2		
Definizione dell'azione	Nome dell'azione	Nuovi impianti fotovoltaici (su tetti altrui) di proprietà di Banca Etica
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Realizzazione di impianti fotovoltaici su proprietà altrui. Nel 2024 verranno realizzati 2 impianti da 100 kwh. Negli anni successivi si procederà alla realizzazione di altri 6 impianti per equiparare la produzione al consumo di tutta la banca. Potenza totale installata pari a 800 kwh
	Data di inizio e fine attività ipotizzata	1.09.24 - 31.12.2025
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Attualmente Banca Etica sta reperendo superfici disponibili per l'installazione
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	Nel 2025, con gli impianti da 200 kw in produzione da fine 2024, verranno risparmiate 116 tonnellate di CO2/annue
	Stima costi di implementazione (Capex)	euro 550.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	Educazione alla sostenibilità ambientale
	Tipologia	Incontri con la cittadinanza
	Ambito d'intervento	Formazione e promozione scientifica
		TEMI DA AFFRONTARE: ambiente urbano e relazione con i servizi ecosistemici forniti dalla natura; Effetti epidemiologici dell'innalzamento delle temperature; Ecologia domestica; Il cambiamento del clima e la biodiversità: effetti.
	Data di inizio e fine attività	1/1/2023 al 31/12/2025
Implementazione	Ufficio responsabile dell'implementazione	segreteria ABV
	Modalità di implementazione	passeggiata guidata; presentazione di libri; seminari
	Ulteriori stakeholder coinvolti	/
	Beneficiari dell'azione	cittadini
Costi	Costi di implementazione (Capex)	1500€

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	CER ASCOM PADOVA
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'obiettivo dell'intervento è la creazione di una CER con governance di ASCOM Padova, realizzata in collaborazione con un partner di gestione energetica, che preveda, attraverso steps successivi, di ampliare il raggio di azione coinvolgendo progressivamente comuni della provincia, aziende associate e non per la parte sia di messa a disposizione di superfici fotovoltaiche che come consumatori, sia di privati cittadini quali consumatori.
	Data di inizio e fine attività	Da maggio 2024 al 2030
Implementazione	Ufficio responsabile dell'implementazione	AREA SINDACALE ASCOM PADOVA
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	COMUNI PROVINCIA DI PADOVA
	Beneficiari dell'azione	COMUNI PROVINCIA DI PADOVA/AZIENDE ASSOCIATE ASCOM PADOVA/ CITTADINI
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	da definire
	Costi di implementazione (Capex)	spese amministrative di costituzione (da definire)
	Costi operativi (Opex)	Da definire

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	SPORTELLO IMPRENDIGREEN
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Con questa iniziativa ASCOM PADOVA vuole premiare i comportamenti ambientalmente virtuosi grazie all'assegnazione di un marchio, che verrà rilasciato all'impresa o all'associazione che avrà raggiunto una soglia minima di punteggio. Per effettuare questo tipo di valutazione Confcommercio si è affidata alla Scuola Universitaria Superiore Sant'Anna di Pisa che attribuirà il marchio Imprendigreen secondo tre diversi livelli di eccellenza (tre, quattro e cinque stelle) in relazione alla diversa intensità dell'impegno ambientale di ogni azienda. All'Ascom, proprio per favorire l'acquisizione del marchio da parte delle imprese, è stato istituito uno specifico "Sportello Imprendigreen. L'obiettivo di questa iniziativa è quello di sensibilizzare le nostre imprese ed i loro clienti e premiare l'impegno ambientale del terziario di mercato, favorendo occasioni di crescita e di sviluppo, rendendo le stesse imprese protagoniste della transizione ecologica, che rappresenta un'opportunità e una sfida da vincere prima di tutto partendo dal territorio.
	Data di inizio e fine attività	2023- 2030
Implementazione	Ufficio responsabile dell'implementazione	SPORTELLO IMPRENDIGREEN ASCOM PADOVA Dr.ssa silvia Mason 049/8209762 email: silvia.mason@ascompd.com
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	AZIENDE ASSOCIATE ASCOM PADOVA
Costo	Costi operativi (Opex)	1000€ all'anno

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Comunicare le buone prassi
	Tipologia	Comunicazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Trattasi di attività di comunicazione e sensibilizzazione rivolta alle imprese di somministrazione di alimenti e bevande: bar, ristoranti, pizzerie, pasticcerie, ecc. sulle tematiche del risparmio energetico, del riuso degli scarti di lavorazione, dell'economia circolare
	Data di inizio e fine attività	01/01/2024 - 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Segreteria APPE
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Titolari delle imprese di somministrazione di alimenti e bevande
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	N/A
	Costi di implementazione (Capex)	stimati in circa 1.000 euro/anno (costo del personale addetto alle azioni di comunicazione)
	Costi operativi (Opex)	Vedasi sopra

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_Allegato 2		
Definizione dell'azione	Nome dell'azione	I pubblici esercizi a servizio dell'utenza
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'iniziativa prevede la possibilità per i pubblici esercizi che siano dotati di area esterna privata, di collocare colonnine di ricarica per bici e monopattini elettrici, favorendo così la mobilità dolce
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Agevolazioni burocratiche (permessi, ecc.) e incentivi economici (contributi a fondo perduto)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Stima costi di implementazione (Capex)	10.000 euro (per circa 12 installazioni)

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI-allegato 2

Definizione dell'azione	Nome dell'azione	Condizionamento dei locali pubblici
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	L'iniziativa prevede la possibilità per i pubblici esercizi di sostituire i mezzi di condizionamento attualmente in uso (riscaldamento a metano e impianto di climatizzazione), con altri a minore impatto ambientale quali le pompe di calore ad alta efficienza
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Incentivi economici (contributi a fondo perduto)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Stima costi di implementazione (Capex)	300.000 euro (per circa 20/25 nuovi impianti)

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_allegato 2

Definizione dell'azione	Nome dell'azione	Economia circolare per i pubblici esercizi
	Tipologia	Mitigazione
	Ambito d'intervento	Politiche per il cibo
	Descrizione	L'iniziativa prevede la possibilità per i pubblici esercizi di dotarsi ed utilizzare contenitori riutilizzabili da utilizzare nel servizio per asporto alla propria clientela. Potrebbero essere realizzati contenitori in materiale adatto per poter essere consegnati ai clienti e riutilizzati più volte.
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Incentivi economici (contributi a fondo perduto)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Stima costi di implementazione (Capex)	30.000 euro (per circa 50 pubblici esercizi)

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_allegato 2

Definizione dell'azione	Nome dell'azione	Sostituzione dei mezzi di trasporto dei pubblici esercizi
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	L'iniziativa prevede la possibilità per i pubblici esercizi di sostituire i mezzi di trasporto attualmente in uso, con altri a zero impatto ambientale (elettrici) quali cargo-bike, furgoni elettrici, auto elettriche
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Incentivi economici (contributi a fondo perduto)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Stima costi di implementazione (Capex)	200.000 euro (per circa 20 nuovi acquisti)

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_allegato 2

Definizione dell'azione	Nome dell'azione	Riqualificazione energetica dei pubblici esercizi
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	L'iniziativa prevede la possibilità per i pubblici esercizi di sostituire i serramenti della propria attività (finestre, porte, vetrine) con altri a minore dispersione termica
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Incentivi economici (contributi a fondo perduto)
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	n/a
	Stima costi di implementazione (Capex)	200.000 euro (per circa 12 installazioni)

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	ANACI PADOVA Sostenibile
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Formazione ed educazione certificata da soggetti terzi e abilitati in Sostenibilità degli edifici, degli Amministratori di Immobili iscritti alla Associazione ANACI Padova al fine di sostenere il programma di neutralità del Comune di Padova - Impostazione di un modello formativo atto a dare maggiore professionalità al singolo amministratore affinchè le sue azioni portino a delibere volte alla sostenibilità ambientale dell'edificio.
	Data di inizio e fine attività	9 ottobre 2024 - in continuità
Implementazione	Ufficio responsabile dell'implementazione	Centro Studi Anaci Padova - Direttore Andrea Garbo
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Tutti i Comuni della Provincia di Padova
	Beneficiari dell'azione	cittadinanza
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	Numero di beneficiari potenziali per anno **	106
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Costi di implementazione (Capex)	100.000,00 euro
	Costi operativi (Opex)	30.000,00 euro/anno
	Fonte del finanziamento	fondi propri

* se applicabile
** se stimabile

Alfredo Gambato - Presidente Anaci Veneto
Andrea Garbo - Direttore Centro Studi Anaci Padova

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Delibere condominiali sostenibili
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Assemblee condominiali con argomenti posti all'ordine del giorno aventi come obiettivo la neutralità climatica al fine di portare almeno il 30% degli edifici amministrati a concorrere verso la scadenza del 2030 di cui al progetto CCC
	Data di inizio e fine attività ipotizzata	01/01/2025 - 31/12/2029
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n/a
	Stima costi di implementazione (Capex)	1.000.000,00 / anno per 4 anni

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Università - Banche - CNA - ANCE
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Retesolida
	Tipologia	Mitigazione
	Ambito d'intervento	Politiche per il cibo
	Descrizione	Implementazione e gestione di attività di recupero di eccedenze alimentari e non solo, al fine del loro riutilizzo a scopi solidaristici. Recupero da filiere della ristorazione collettiva, grande distribuzione organizzata, produzione e trasformazione alimentare, organizzazioni dei produttori agricoli.
	Data di inizio e fine attività	dal 2009, senza termine definito
Implementazione	Ufficio responsabile dell'implementazione	
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Comune di Padova, Diocesi, Rete di enti no profit, rete dei donatori.
	Beneficiari dell'azione	persone indigenti tramite la rete di associazioni beneficiarie.
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	450t/anno CO2 non sprecata (prodotti recuperati); 80t/anno di co2 salvata per non smaltimento)
	Numero di beneficiari potenziali per anno **	9000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	530
	Costi di implementazione (Capex)	15000 €/anno
	Costi operativi (Opex)	40000 €/anno

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Retesolida - evoluzione
	Tipologia	Mitigazione
	Ambito d'intervento	Politiche per il cibo
	Descrizione	L'attività di retesolida è per sua natura azione di collaborazione e messa in rete delle risorse del territorio. L'evoluzione del progetto passa per l'allargamento della platea dei donatori e dei beneficiari, ma anche dalla promozione di processi e politiche che garantiscano la sostenbilità delle attività di recupero, la formazione della cittadinanza e il consolidamento di buone prassi.
	Data di inizio e fine attività ipotizzata	2024-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Fondi per sostenere le attività di coordinamento, spazi per poter eventualmente estendere lo scope del recupero, fondi che possano sostenere le attività delle realtà di volpontariato che gestiscono le donazioni.
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	Potenziale raddoppio di quanto oggi stimato, circa 1000t/anno
	Stima costi di implementazione (Capex)	200000€

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	maap, cciaa, interporto, associazioni di categoria, realtà produttive
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Riqualificazione sede aziendale "Corso Stati Uniti"
	Tipologia	Adattamento
	Ambito d'intervento	Edilizia civile
	Descrizione	Ristrutturazione e riqualificazione della sede esistente, compresa realizzazione di un impianto di Trigenerazione con rete di distribuzione a servizio delle palazzine della Sede di Corso Stati Uniti a Padova
	Data inizio e fine attività	ott 2023 - dic 2025
Implementazione	Ufficio responsabile dell'implementazione	Facility Management
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Dipendenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	316,708 TEP
	Numero di beneficiari potenziali per anno **	150
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	225
	Costi di implementazione (Capex)	20.000.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Valorizzazione e recupero di materia
	Tipologia	Adattamento
	Ambito d'intervento	Gestione dei rifiuti
	Descrizione	Potenziamento ed efficientamento del sistema di raccolta differenziata grazie a rinnovo mezzi e contenitori, creazione di un nuovo centro di raccolta e realizzazione di un impianto di selezione dei rifiuti differenziati
	Data inizio e fine attività	gen 2024 - dic 2027
Implementazione	Ufficio responsabile dell'implementazione	Direzione Servizi Ambientali
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Beneficiari dell'azione	Cittadini
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	36 TEP
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	96
	Costi di implementazione (Capex)	15.420.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Razionalizzazione ed efficientamento del sistema di distribuzione acqua e depurazione dei reflui
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Interventi di efficientamento energetico presso gli impianti industriali di pompaggio dell'acqua potabile e di trattamento dei reflui, e di riduzione delle perdite idriche anche grazie a strumenti tecnologici a distanza
	Data di inizio e fine attività	gen 2023 - dic 2027
Implementazione	Ufficio responsabile dell'implementazione	Direzione Reti
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	122,402 TEP
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	11.695
	Costi di implementazione (Capex)	30.383.000

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	Interventi edili e impiantistici su edifici pubblici e privati
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Riqualificazione energetica di edifici pubblici e privati (condomini); gli interventi prevedono l'installazione di pannelli fotovoltatici per la produzione di energia elettrica da fonti rinnovabili su scuole, edifici pubblici e privati e l'efficientamento energetico degli edifici (pubblici e privati) tramite la sostituzione degli impianti tecnologici di riscaldamento/raffrescamento e il miglioramento dell'isolamento termico. Sono compresi gli interventi di riqualificazione degli immobili ATER
	Data di inizio e fine attività	gen 2023 - dic 2024
Implementazione	Ufficio responsabile dell'implementazione	Hera Servizi Energia
	Modalità di implementazione	Realizzazione di interventi fisici sul territorio
	Ulteriori stakeholder coinvolti	
	Beneficiari dell'azione	Inquilini dei condomini riqualificati + utenti degli edifici pubblici riqualificati
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	351
	Numero di beneficiari potenziali per anno **	3000
	Stima della riduzione delle emissioni di gas serra (totale) - tCO_2 eq/anno	801
	Costi di implementazione (Capex)	0

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	Produzione energia elettrica da fotovoltaico
	Tipologia	Mitigazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Installazione impianto fotovoltaico su Palazzina G "ex Gallo Legnami" Sede Corso Stati Uniti Padova nell'ambito del progetto di riqualificazione della sede aziendale
	Data di inizio e fine attività ipotiz	2026-2028
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale...)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	411
	Stima costi di implementazione (	1.200.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Produzione energia elettrica da fotovoltaico
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Realizzazione di un parco fotovoltaico da 32MW sulla discarica "Roncajette" (Ponte San Nicolò) per valorizzare le superfici verdi
	Data di inizio e fine attività ipotizzata	2025-2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	17.600
	Stima costi di implementazione (Capex)	22.000.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Flotta elettrica raccolta rifiuti
	Tipologia	Mitigazione
	Ambito d'intervento	Gestione dei rifiuti
	Descrizione	Sostituzione dei mezzi adibiti alla raccolta rifiuti e allo spazzamento stradale con mezzi elettrici (sia motore trazione che motore attrezzatura) e relativa infrastrutturazione per la ricarica. Il progetto prevede i seguenti mezzi: 12 Autocarri con vaschetta dotati di attrezzatura voltacontenitore (65k€/cad.); 6 spazzatrici stradali piccole (400€/cad.); 2 spazzatrici stradali grandi (600k€/cad.). Totale 4.380k€ (solo mezzi), cui aggiungere 500k€ per l'infrastruttura di ricarica
	Data di inizio e fine attività ipotizzata	2025-2028
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	100
	Stima costi di implementazione (Capex)	4.880.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Efficientamento energetico dell'area metropolitana
	Tipologia	Mitigazione
	Ambito d'intervento	Illuminazione pubblica
	Descrizione	Riqualificazione energetica del parco impiantistico con rinnovo punti luce a LED (circa 19.000 PL) e adeguamento infrastrutturale, redazione PICIL - Piano dell'Illuminazione per il Contenimento dell'Inquinamento Luminoso
	Data di inizio e fine attività ipotizzata	2025-2027
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	7.105
	Stima costi di implementazione (Capex)	30.000.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	Colonnine e sistemi di ricarica dei veicolo
	Tipologia	Mitigazione
	Ambito d'intervento	Trasporti
	Descrizione	Installazione di hub di ricarica con infrastrutture a potenza elevata e installazione di infrastrutture di ricarica in aree residenziali
	Data di inizio e fine attività ipotizzata	2025-2027
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	0,2 ton CO2/anno per veicolo
	Stima costi di implementazione (Capex)	475.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	Contenitori intelligenti
	Tipologia	Mitigazione
	Ambito d'intervento	Gestione dei rifiuti
	Descrizione	Sostituzione dei contenitori per la raccolta rifiuti con contenitori intelligenti in grado di ottimizzare la raccolta attraverso l'utilizzo di contenitori ad accesso controllato, con identificazione del conferitore, finalizzati all'incremento del tasso di raccolta differenziata e della qualità del rifiuto differenziato conferito e raccolto. Nel Comune di Padova è prevista la sostituzione di 1.800 contenitri carica laterale da 3.200 litri delle frazioni indifferenziata, carta, plastica e vetro. Nei comuni di Albignasego, Noventa e Saccolongo è prevista la digitalizzazione del servizio, ovvero l'assegnazione alle utenze di contenitori per la raccolta della frazione indifferenziata dei rifiuti che, dotati di sistemi di riconoscimento degli svuotamenti basati sulla tecnologia RFID UHF, consentano la rilevazione puntuale dei conferimenti.
	Data di inizio e fine attività ipotizzata	2024-2027
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	n.d.
	Stima costi di implementazione (Capex)	4.980.000

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	1117 SRL - STARTUP
	Tipologia	Ricerca e sviluppo
	Ambito d'intervento	Edilizia civile
	Descrizione	Creazione e sviluppo di algoritmi su base AI per la raccolta di tutti i dati di funzionamento, manutenzione, accessibilità, frequentazione, consumi energetici, immissioni di CO2 , consumi di suolo, consumi di materiali emissioni luminose, impatto architettonico , inestetismi degli edifici in condominio al fine di poter consentire al building manager di far decidere o decidere quali migliori progetti di investimento per l'edificio amministrato con approccio sostenibile e non di mera azione fine a se stessa . In tal senso dare valorizzazione e consapevolezza alla proprietà della valorizzazione del bene posseduto a qualsiasi titolo.
	Data di inizio e fine attività	gennaio 2024 - dicembre 2026
Implementazione	Ufficio responsabile dell'implementazione	Anna Garbo e Maria Vittoria Martelli
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	banche - università - associazioni di categoria - avvocati contrattualisti
	Beneficiari dell'azione	fondi - property manager - building manager - pubbliche amministrazioni
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MW/anno *	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	Costi di implementazione (Capex)	2,000,000,00 euro
	Costi operativi (Opex)	250.000 euro / anno
	Fonte del finanziamento	fondi europei - finanziamenti diretti

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	ddg snc - 1117 - beni comuni sostenibili
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Creazione di un modello di formazione e cultura applicabile a tutti gli edifici in condominio non nuovi e di qualsisasi tipologia così da rendere il patrimonio amministrato sostenibile verso l'ambiente attraendo il mondo bancario a finanziare il progetto rispetto a soggetti perfettamente solvibili nel tempo vista la loro solidarietà obbligata . Attivazione per il superamento degli ostacoli giuridici imposti al condominio con azioni sul legislatore pee conformarsi al nuovo obiettivo di neutralità climatica . Portare i gestori di immobili ad adottare le azioni di suasion necessari alla transizione nei tempi dovuti dal mutamento ambientale. Rilasco di algoritmi brevettati per attuale la gestione sostenibile dei beni comuni con conseguente valorizzazioni sia dei medesimi che delle unità immobiliari lo connesse. Formazione degli stakeholder della filiera e conseguimento di incarichi e appalti connessi.
	Data di inizio e fine attività ipotizzata	
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	finanziamento
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	2.000.000 kg CO2/anno
	Stima costi di implementazione (Capex)	2.000.000 di euro

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONE 1		
Definizione dell'azione	Nome dell'azione	**Cambio Parco Macchine Stampaggio Materie Plastiche**
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	L'intervento di efficientamento energetico prevede la sostituzione di 5 linee di soffiaggio estrusione materiale plastico caratterizzate da macchine tradizionali a sistemi oleodinamici, con 3 linee di produzione ad elevata efficienza caratterizzate da macchine con sistemi full electric.
	Data di inizio e fine attività	Inizio Agosto 2024 - Fine Dicembre 2024
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Produzione
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	Italchimica srl
	Beneficiari dell'azione	Italchimica srl
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	148 MWh annui risparmiati
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	3.300.000 €
	Costi operativi (Opex)	Non vi è un impatto sui costi operativi, anzi dovremmo avere un beneficio in termini di ore uomo di 60.000 € annui

* se applicabile
** se stimabile

DEFINIZIONE AZIONE 2		
Definizione dell'azione	Nome dell'azione	**Acquisto Energia Verde**
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Piano di acquisto di Energia da fonte rinnovabile. Primo target intermedio: copertura di almeno il 10% del fabbisogno energetico dello stabilimento produttivo entro il 2025.
	Data di inizio e fine attività	Inizio Gennaio 2024
Implementazione	Ufficio responsabile dell'implementazione	Uff. sostenibilità
	Modalità di implementazione	Acquisto di beni o servizi
	Ulteriori stakeholder coinvolti	Uff. Acquisti, Uff. Ambiente, Uff. Produzione
	Beneficiari dell'azione	Italchimica srl (stabilimento)
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	
	Numero di beneficiari potenziali per anno **	
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	In fase di definizione
	Costi operativi (Opex)	In fase di definizione

* se applicabile
** se stimabile

DEFINIZIONE AZIONI POSSIBILI		
Definizione dell'azione	Nome dell'azione	Comunità energetica nella zona industriale di Padova
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	Creare un progetto (con il coordinamento del Comune) di sinergia con le attività industriali e commerciali e gli enti territoriali locali per la condivisione dell'energia prodotta da fonti rinnovabili.
	Data di inizio e fine attività	Inizio Gennaio 2025 - Fine Dicembre 2028.
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Sostenibilità
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Italchimica srl e beneficiari della energia di rete
	Beneficiari dell'azione	Italchimica srl e beneficiari della energia di rete
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	Potenziale copertura del fabbisogno della comunità
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	Potenziale sostituzione dell'attuale energia da fonti non rinnovabili utilizzata dalla Comunità per coprire parte o la totalità del fabbisogno
	Numero di beneficiari potenziali per anno **	N.A
	[Azioni di adattamento] Pericolo climatico mitigato *	N.A
	[Azioni di adattamento] Effetto atteso *	N.A
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	Potenziale riduzione o azzeramento dello scope 2 della Comunità + potenziale riduzione dello scope 1 legato alla possibile conversione del parco auto della comunità di ibrido o elettrico.
	Costi di implementazione (Capex)	Non ancora quantificabile
	Costi operativi (Opex)	Non ancora quantificabile

* se applicabile
** se stimabile

DEFINIZIONE AZIONI_allegato 1

Definizione dell'azione	Nome dell'azione	Campagna di comunicazione
	Tipologia	Comunicazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno del piano di comunicazione del Centro Servizio Volontariato di Padova e Rovigo saranno realizzate specifiche azioni comunicative sui temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale delle attività associative, con particolare riferimento alle attività che gli Enti del Terzo Settore possono implementare per contrastare il cambiamento climatico. Le azioni comprenderanno una comunicazione coordinata, invio di newsletter specifiche, campagne sui principali social network, utilizzo del sito internet istituzionale, campagne sui principali mezzi di informazione territoriale.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Comunicazione – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Soci e volontari delle associazioni, cittadini
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	15000
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	€ 70.000,00
	Costi operativi (Opex)	

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Co-progettazioni con gli ETS
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno dei percorsi di co-progettazione del Centro Servizio Volontariato di Padova e Rovigo saranno realizzati specifici percorsi sui temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale delle attività associative, con particolare riferimento alle attività che gli Enti del Terzo Settore possono implementare per contrastare il cambiamento climatico. L'analisi dei bisogni da cui partiranno i percorsi di co-progettazione farà riferimento ai dati contenuti nel PAESC e nella cornice del City contract.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Progettazione – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Soci e volontari delle associazioni
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	100
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	
	Costi di implementazione (Capex)	€ 100.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Campagne di crowdfunding
	Tipologia	Supporto finanziario
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno del piano di implementazione delle campagne di raccolta fondi a favore degli ETS del territorio, promosso dal Centro Servizio Volontariato di Padova e Rovigo, saranno riservate specifiche azioni a supporto di progetti dedicati ai temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale delle attività associative, con particolare riferimento alle attività che gli Enti del Terzo Settore possono implementare per contrastare il cambiamento climatico. Per la realizzazione delle attività verrà messa a disposizione la piattaforma gratuita di crowdfunding sviluppata dal CSV.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Fundraising – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Soci e volontari delle associazioni
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	10
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	€ 50.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Kit per la sostenibilità ambientale
	Tipologia	Comunicazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno dell'area riservata del sito internet del Centro Servizio Volontariato di Padova e Rovigo saranno resi disponibili materiali informativi rivolti a tutte le associazioni del Comune di Padova sui temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale delle attività associative.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Comunicazione – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Asvess
	Beneficiari dell'azione	Soci e volontari delle associazioni
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	100
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	€ 5.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Progetti di Servizio Civile Universale
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno dei progetti di Servizio Civile Universale promossi dal Centro Servizio Volontariato di Padova e Rovigo, saranno riservate specifiche azioni formative/educative dedicate ai temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale. Specifiche azioni progettuali dedicate al contrasto dei cambiamenti climatici verranno inserite all'interno dei progetti di Servizio Civile per coinvolgere in maniera attiva i volontari e le organizzazioni ospitanti.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Servizio Civile Universale – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Operatori volontari di Servizio Civile Universale e loro Enti di accoglienza
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	50
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	€ 35.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Scuola di volontariato e legame sociale
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno della Scuola di volontariato e legame sociale del Centro Servizio Volontariato di Padova e Rovigo verranno realizzati alcuni corsi formativi rivolti a tutte le associazioni del Comune di Padova sui temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale delle attività associative.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Formazione – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Asvess
	Beneficiari dell'azione	Soci e volontari delle associazioni
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	100
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	€ 21.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI_allegato 1		
Definizione dell'azione	Nome dell'azione	Laboratori nelle scuole
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Altro (specificare nel campo descrizione)
	Descrizione	All'interno dei laboratori nelle scuole per la promozione della cittadinanza attiva e del volontariato, promosso dal Centro Servizio Volontariato di Padova e Rovigo, saranno riservate specifiche azioni formative/educative dedicate ai temi della sostenibilità ambientale e delle misure attuabili per la mitigazione dell'impatto ambientale.
	Data di inizio e fine attività	15/01/2024 – 31/12/2030
Implementazione	Ufficio responsabile dell'implementazione	Area Promozione del volontariato – CSV di Padova e Rovigo
	Modalità di implementazione	Organizzazione attività
	Beneficiari dell'azione	Studenti delle scuole secondarie di primo e secondo grado
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	N/A
	Numero di beneficiari potenziali per anno **	1500
	[Azioni di adattamento] Effetto atteso *	Riduzione dell'impatto atteso
	Costi di implementazione (Capex)	€ 70.000,00

* se applicabile

** se stimabile

DEFINIZIONE AZIONI POSSIBILI_allegato 2

Definizione dell'azione	Nome dell'azione	Promozione delle Comunità Energetiche Rinnovabili e Solidali
	Tipologia	Mitigazione
	Ambito d'intervento	Altro (dettagliare nel campo descrizione)
	Descrizione	Il Centro Servizio Volontariato intende promuovere la costituzione di Comunità Energetiche Rinnovabili e Solidali attraverso il supporto formativo e consulenziale e la fornitura di documenti e materiali utili, accompagnando in particolare la costituzione delle CERS in forma di Ente del Terzo Settore
	Data di inizio e fine attività ipotizzata	15/01/2024 – 31/12/2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Know how specifico sugli elementi tecnici
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	N/A
	Stima costi di implementazione (Capex)	€ 30.000,00

* se applicabile

** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	Tutti i componenti del Tavolo comunale dedicato al tema e le CERS nascenti sul territorio
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	**Sensibilizzazione per il risparmio energetico**
	Tipologia	Comunicazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Promozione di eventi e partecipazione a tavoli tecnici con focus e suppporto per utilizzo fonti rinnovabili e tecnologie sostenibili
	Data di inizio e fine attività	inizio maggio 2022 - fine 31-12-2030
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Enti di ricerca, esperti del settore
	Beneficiari dell'azione	Imprese associate, vari
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	/
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	/
	Costi operativi (Opex)	3.000 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	**Progetto UNIZeb**
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Promozione delle attività del Laboratorio permanente per la sperimentazione delle nuove tecnologie per il risparmio energetico.
	Data di inizio e fine attività	Inizio 2015 - fine 2030
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Scuola Edile Padova - Università di Padova - Imprese private
	Beneficiari dell'azione	Studenti
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	variabile
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	/
	Costi operativi (Opex)	3.000 €

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	**DHICube**
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Promozione del Polo di Innovazione con portale e servizi per imprese e pubbliche amministrazioni per la promozione della digitalizzazione per un ambiente costruito verde, sicuro e socialmente responsabile. Accesso a tecnologie digitali innovative per l'intera filiera delle costruzioni. Individuazione delle necessità di competenze digitali avanzate finalizzato ad un utilizzo autonomo e consapevole delle tecnologie innovative offerte dall'attuale mercato. Sviluppo di reti ed ecosistemi d'innovazione.
	Data di inizio e fine attività	Inizio 1-12-2022 - fine 1-12-2025
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	ANCE Nazionale (coordinamento) Federcostruzioni; ITC - CNR; Ente Nazionale per il Microcredito; Officine Innovazione S.r.l.; Politecnico di Milano – DABC; SMILE-DIHSMILE-DIH; STAM S.r.l.; STRESS - Distretto Tecnologico Costruzioni Sostenibili; Un. Studi di Brescia – DICATAM, DII; Un. Studi di Napoli Federico II; UN. Politecnica delle Marche – DIISM, DII, DICEA
	Beneficiari dell'azione	Piccole e medie imprese, pubblica amministrazione, professionisti e produttori di materiali.
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	/
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	3.000 €
	Costi operativi (Opex)	/

* se applicabile

** se stimabile

DEFINIZIONE AZIONI

Definizione dell'azione	Nome dell'azione	**Decarbonizzazione del settore delle costruzioni**
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Promozione delle "Linee guida per la decarbonizzazione del settore delle costruzioni", una analisi approfondita del contesto nazionale, europeo e internazionale, con un focus sulle principali sorgenti di emissioni di Co2 del settore delle costruzioni. Promozione e assistenza per compilazione del tool operativo che consente a tutte le imprese di calcolare la propria impronta carbonica, tracciarne la proiezione inerziale e quindi delineare la strategia NET zero.
	Data di inizio e fine attività	Inizio 4-05-2023
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Ance Nazionale
	Beneficiari dell'azione	Imprese associate
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	/
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	3.000 €
	Costi operativi (Opex)	/

* se applicabile
** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	**"Il portale di cantiere" Check - Software gratuito**
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia civile
	Descrizione	Promozione del software gratuito Check per supportare le Imprese nella gestione del cantiere mediante la digitalizzazione e l'accesso da remoto.
	Data di inizio e fine attività	Inizio ottobre 2023
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Ance Nazionale
	Beneficiari dell'azione	Imprese, professionisti, Committenze
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	/
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	3.000 €
	Costi operativi (Opex)	/

* se applicabile

** se stimabile

DEFINIZIONE AZIONI		
Definizione dell'azione	Nome dell'azione	**Economia circolare - Recupero e riciclo dei rifiuti**
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Gestione dei rifiuti
	Descrizione	Promozione del progetto pilota per il recupero e riciclo del packaging in carta utilizzato in cantiere, iniziativa per lo sviluppo di pratiche di economia circolare per la crescita della sostenibilità dell'attività delle imprese edili. Promozione del progetto sperimentale per la raccolta ed il riciclo di materiali in PVC da cantiere edile mediante convenzione con le associazioni della filiera italiana del PVC.
	Data di inizio e fine attività	Inizio ottobre 2023
Implementazione	Ufficio responsabile dell'implementazione	Ufficio Appalti Ance Padova
	Modalità di implementazione	Organizzazione attività
	Ulteriori stakeholder coinvolti	Ance Veneto - PVC Forum Italia
	Beneficiari dell'azione	Imprese, filiera per il riciclo
Impatto & costo	[Azioni di mitigazione] Energia rinnovabile generata - MWh/anno *	/
	[Azioni di mitigazione] Energia risparmiata/sostituita - MWh o smc o tonnellate/anno (in caso di sostituzione specificare il tipo di combustibile sostituito e il nuovo utilizzato) *	/
	Numero di beneficiari potenziali per anno **	/
	[Azioni di adattamento] Pericolo climatico mitigato *	
	[Azioni di adattamento] Effetto atteso *	
	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Costi di implementazione (Capex)	3.000 €
	Costi operativi (Opex)	/

* se applicabile
** se stimabile

DEFINIZIONE AZIONI POSSIBILI

Definizione dell'azione	Nome dell'azione	COMUNITA' ENERGETICHE RINNOVABILI (CER)
	Tipologia	Formazione ed educazione
	Ambito d'intervento	Edilizia industriale
	Descrizione	Promozione delle CER tra le imprese associate ad Ance Padova, informazione, assistenza per il coordinamento con altri soggetti coinvolti
	Data di inizio e fine attività ipotizzata	Inizio 2023 fine 2030
Implementazione	Elementi mancanti per la realizzazione dell'azione (es. spazi, finanziamento, collaborazioni, vetture, personale..)	Finanziamento, collaborazioni
Impatto & costo	Stima della riduzione delle emissioni di gas serra (totale) - tCO2 eq/anno	/
	Stima costi di implementazione (Capex)	3.000 €

* se applicabile
** se stimabile

NETWORKING

Sei interessato ad entrare in contatto con altri stakeholder del territorio per l'attuazione di questa misura?	Sì
Se sì, indica di seguito con chi	soggetti promotori e interessati CER
Vorresti entrare in contatto con realtà simili alla tua a livello nazionale o europeo, per scambiare buone pratiche relative alla misura pianificata?	Sì