

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES



Parma
Climate Neutral
2030

Climate City Contract

2030 Climate Neutrality Action Plan



Comune di Parma





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1 Introduction

Introduction

The Action Plan of the city of Parma contains a detailed analysis of the strategies and actions necessary to achieve climate neutrality by 2030.

The document, to be considered as a live and continuously updated tool in future years, was drawn up in full synergy with the NetZeroCity guidelines and in particular with the Action Plan guideline <https://netzerocities.app/resource -2910>.

The document therefore follows the logical approach suggested by NZC whose main cornerstones are:

- 1) Measurable, communicable and verifiable climate action planning starting from a baseline inventory of greenhouse gas emissions. The actions, collected and planned, are divided by **sector** – following the subdivision suggested by NZC – by **typology** – e.g. measurable, guidelines, governance, behavioural - and described not only from the point of view of their direct impact on the reduction of climate-changing emissions but also taking into consideration the indirect impacts (ref. NZC Impact Pathways model). Where possible, the necessary investment was associated with each action, the details of which are given in the Investment Plan document.
- 2) Adoption of a strategic approach, based on NZC's Theory of Change, which puts social innovation and innovative governance models, including multi-level ones, first, as enabling factors for the entire territory's path towards climate neutrality.
- 3) Involvement of all local actors both internal and external to the municipal administration. Citizens, private companies, subsidiaries, trade associations, research institutions and universities, hospitals, the banking sector, etc (non-exhaustive list) are involved in the process of co-creation of the action and investment plan, reinforcing their commitment with the signing of the Climate Contract.

The Action Plan is the result of a constant and continuous involvement of the internal ecosystem of the city, an integral part of the Mission. Actions, strategies, challenges, barriers, guidelines and indicators have been identified and carried forward in the analyses in an integrated way. After identifying the sectors most exposed to emissions thanks to the SECAP monitoring (without neglecting the other sectors), we proceeded on the one hand to collect actions by stimulating external and internal stakeholders, and on the other to refine strategies and governance within the Municipality to facilitate the abatement of barriers over time, meet the challenges and increasingly stimulate the whole territory for a just transition to zero emissions. The core of the activities were the implemented social innovation and active citizenship measures. The multi-level governance, created ad hoc and strengthened in some cases in its existing relationships, is of great importance. The large number of municipal resolutions connected to Net Zero City and the entire internal structure that has been set up demonstrate the strong involvement of the Municipality of Parma and its ability to actively and proactively influence the entire territory.

The interconnection with the other two components of the Climate City Contract, namely the Investment Plan and the Commitment, is therefore clear: the three documents are not separate but consequential, and reinforce each other. If the Action Plan illustrates, for example, the portfolio of actions and the strategies put in place for climate neutrality, dividing them by sectors and introducing the quantification of the reduction of emissions, in the Investment Plan we will find greater detail from the financial-economical point of view of the individual investments and the "total cost" of climate neutrality. What is collected in these two documents is presented in the form of a contract in the



Commitment where the stakeholders formally undertake with the Mayor and the city to carry out the selected actions.

The starting point of the Action Plan is the SECAP 2021 Monitoring document, elaborated thanks to the support of the Territorial Agency for Energy and Sustainability of Parma (ATES), a document that suggests the reference baseline for the path towards climate. **The reference year taken for the CCC** - which according to the NZC guidelines must be no earlier than 2018 and which, in the case of the Municipality of Parma, corresponds to the year of the updated SECAP monitoring inventory - is **2019**.

The total CO_{2eq} emissions values in the 2019 SECAP monitoring, i.e. the Monitoring Emission Inventory (MEI SECAP 2019) are equal to 981,864 tCO₂. In order to define the Baseline of CCC emissions (hereinafter BEI CCC) it is necessary to add to the MEI SECAP 2019 what was not then accounted for in terms of, for example, missing sectors¹. We therefore arrive at a definitive BEI CCC of **1,126,647 tCO_{2eq}**. This value is defined as **the amount of emissions to be reduced to achieve climate neutrality**. A part of these emissions, and exactly 43.9% (equal to 494,418.4 tCO_{2eq}), can be reduced in 2030 thanks to actions considered within the SECAP. The remaining value will have to be reduced thanks to specific actions identified in this Action Plan.

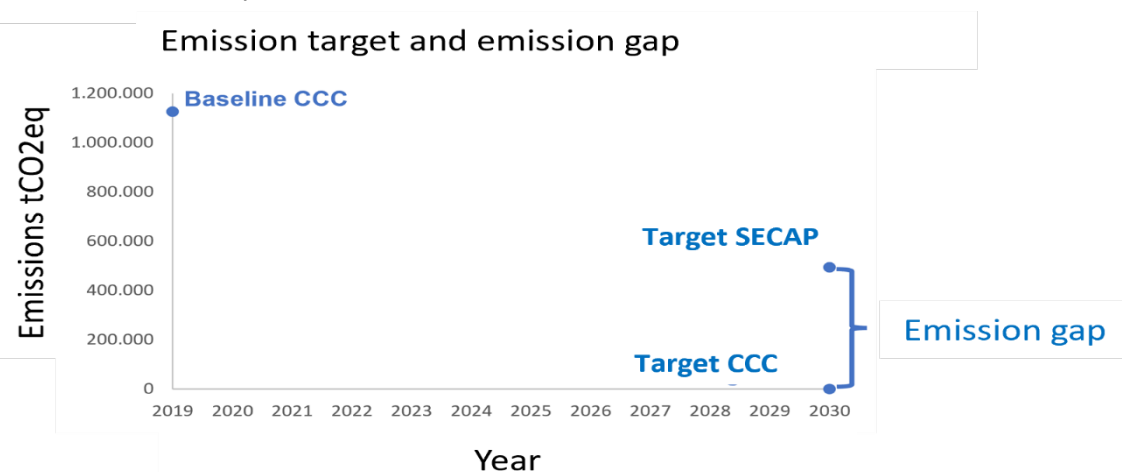


Figure 1. Target and emission gap by 2030

In drafting the document, the Municipality of Parma received support from the Agency for Sustainable Energy and Development (AESS) for the elaboration and drafting of the documents, for the phase of gathering and analysing the data, for the structuring of internal governance and the activation of the local ecosystem, according to the methods that will be described in detail in chapter 2.1 and in line with the lines of action expressed by NCZ.

¹ A detailed description of the PAESC data is in Form A-1 of this document.



Figure 2 Main steps for drafting the Action Plan

The boundary of the CCC for the city of Parma is the municipal territory. Therefore, **there are no exclusion areas.**



2 Work process

Work process

2.1 The Climate Transition Map of the Municipality of Parma

Following the NZC methodology (<https://netzerocities.app/ClimateTransitionMap>), the work phases planned and carried out for the implementation of the path towards climate neutrality are presented below. The image and tables below were taken from the NZC's Climate Transition Map.

Build a strong mandate

Build a strong mandate	Within city government	Set up / strengthen the internal team
		Mobilise resources and capacity
	Within the local ecosystem	Develop a multi-actor Transition team
		Build new collaborative governance structures and networks
	With the other government levels	Strengthen buy-in
		Clarify mutual commitments

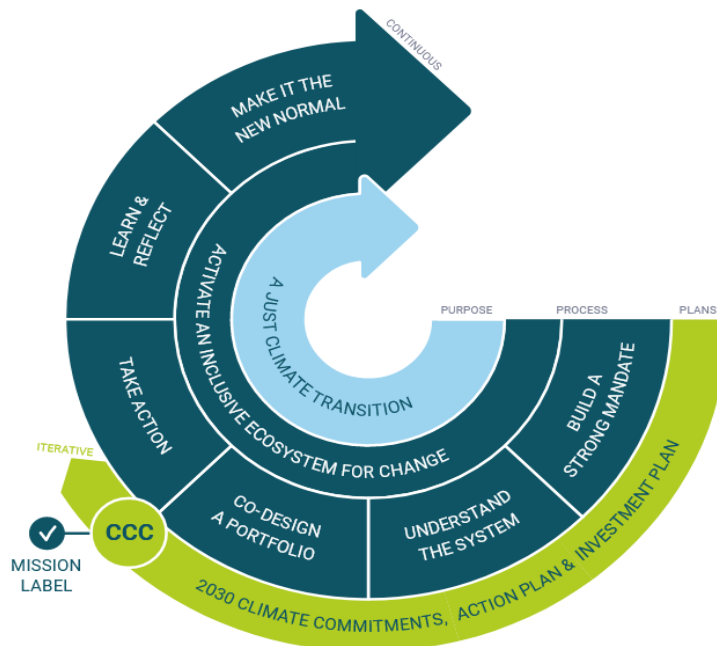


Figure 3 Transition map



The construction of a solid mandate for the transition to zero emissions by 2030 depends on the involvement of the entire territory. Many actors, both internal and external to the Municipality, have been involved in the process. The first step taken by the Municipality of Parma was the establishment of the Transition Team.

The Transition Team:

Resolution n. GC-2022-362 of 28/09/2022 defines the governance of the Mission within the municipal administration, made up of a political **Steering Committee** composed of the Councillors responsible for the issues most involved in the Mission, and by a technical working group including representatives of 7 Sectors of the Municipality with the necessary skills to define the commitments and the action portfolio of the Administration.

Specifically, the working group is coordinated by the General Management Department and is made up of representatives from the following sectors: Public Works, Territorial Planning and Development, Digital Transition, Mobility and Transport, Maintenance and Facility Management, Ecological Transition.

The working group corresponds with the Transition team within the Municipality.

The Municipality of Parma also made use of the external support of the NetZeroCities Platform and AESS.

NetZeroCities experts provided support in the envisioning phase in order to understand the overall logic of the transition towards climate neutrality, in particular in the activation and understanding of the development process of the Transition Team and of the overall local ecosystem

AESS, the Agency for Energy and Sustainable Development, fractional in-house of the Municipality of Parma, has been given the task of supporting the implementation of the Action and Investment plan, including all those actions necessary for drafting the documents such as, for example, one-to-one meetings with internal and external stakeholders, collection of the portfolio of actions and their analysis in terms of emissions reduction and investments needed, identification of barriers and opportunities for the transition to zero emissions, identification of governance lines and overall planning, also in terms of strategy, for climate neutrality, analysis of impact pathways. The list is not exhaustive.

The overall ecosystem:

The ecosystem of the City is represented by the Transition team and by the other actors of the city: citizens, the public and private sector, trade associations, the world of research and education who have been involved by the Transition Team in various modalities such as in workshops and thematic tables.

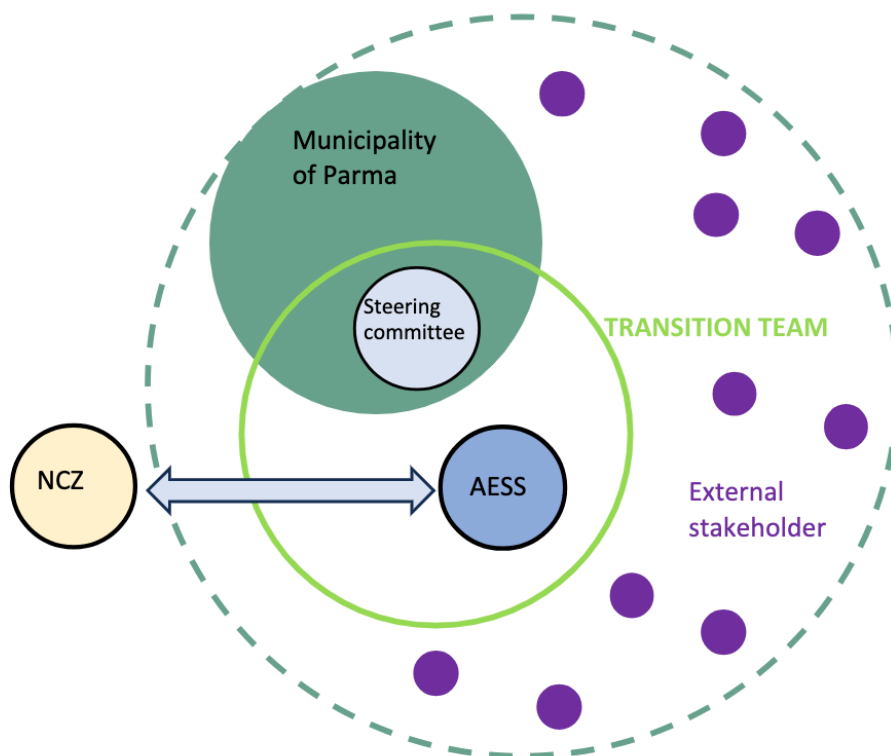


Figure 4 The overall ecosystem

It is only thanks to the ecosystem of the city and the interaction with the other institutions at a regional and national level (e.g. RER, MASE, etc.) that it has been possible to draw up this plan.

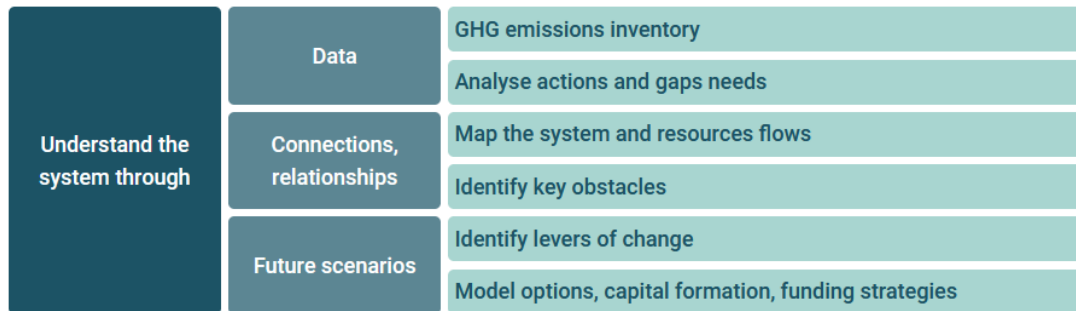
The involvement of the ecosystem:

In order to involve and activate the entire ecosystem, the Municipality of Parma has carried out the following macro steps:

- Public launch of the Parma Climate Neutral 2030 initiative (December 2022)
- Workshops aimed at internal sectors and investee companies of the Municipality of Parma (February-March 2023)
- Workshops with external local actors (March - June 2023)
- One-to-one meetings with internal sectors (May – June 2023)
- One-to-one insights with external stakeholders (April – June 2023)



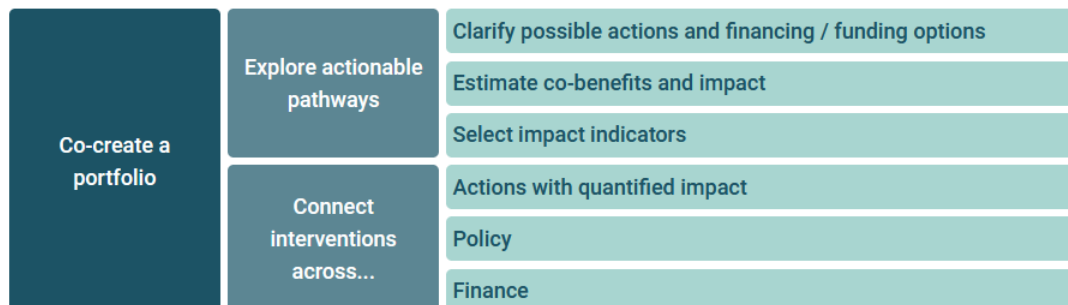
Understand the system through



To carry out the second step of the Transition Map, "understand the system", we also worked together with ATES in order to find the points of contact between the monitoring of the SECAP and the CCC.

The technical activities related to the identification of the baseline, the calculation of the emission gap, the identification of possible scenarios for climate neutrality, the analysis of possible innovative governance models, the identification of levers and barriers, were carried out by AESS in close collaboration with the Municipality of Parma.

Co-create a portfolio



The co-creation of the actions portfolio, as mentioned above, was carried out with the overall ecosystem.

The Municipality of Parma has activated a co-planning process with the stakeholders in order to create collaborative networks and identify actions and investments. Indeed, one of the objectives of the 100 Cities Mission is to stimulate multilevel and multi-sectorial collaboration, stimulating public and private investments for climate neutrality.

The co-planning process made it possible to involve around 40 representatives of public bodies, private companies, research bodies and local associations, which represent the local ecosystem, to obtain a joint definition of commitments, functions and investments at the local level, co-plan the actions to be implemented to achieve the objective with a short, medium and long term time horizon.

In addition to face-to-face meetings, in order to compile the city's portfolio of actions, all external stakeholders were given an action collection questionnaire that allowed to gather the main data required in the Action Plan. The actions collected were then included in the Action Plan in the different tables of the NZC model.



2.2 The sustainability of the Action Plan to 2030

September 2023 establishes the date of the first delivery of the CCC of the City of Parma to the European Commission via the NZC platform.

Since, as also explained to all the parties involved in the contract, the Mission to achieve climate neutrality is a real path towards 2030, it is of fundamental importance that the work carried out for the drafting of the first CCC is considered as an initial milestone for the achievement of the 2030 goals.

Both the Action and the Investment Plan will be constantly updated in future years, continuing to involve not only the signatory stakeholders but also trying to widen the audience of local players as much as possible. In fact, on the one hand, another set of 30 local realities (business and associations) have already been identified to broaden the audience of stakeholders to be involved in the process of the Parma Climate Neutral 2030 initiative, on the other hand a communication strategy has been developed for the direct involvement of citizens in the choices for climate neutrality.

In future years, the involvement of external stakeholders will be increasingly stronger, also in order to create more and more synergies between all the players in Parma; this cooperation will be aimed to foster the co-creation of the portfolio and to create an overall ecosystem capable to face the barriers and opportunities towards climate neutrality. The stakeholder base will also be expanded. Trade associations, non-profit sector and trade unions have already been identified to be involved in the near future.

It is expected that the resolutions and guidelines of the Municipality of Parma, connected to the CCC and illustrated below, will see more and more actions for neutrality in future years, not only within the Municipality but also outside it.

The Steering Committee of the Municipality, a key element of the Transition Team, will continue its work of dialogue and continuous updating, involving the internal sectors of the Municipality which have already actively contributed to the identification of actions and strategies for neutrality and further extending it to others sectors that initially have participated on a simple occasional basis. This will broaden the pool of change makers within the Administration and make structural the changes for neutrality at the governance level.

The future acts of the Municipality Council and Administrative Board (see A-2), linked to the reduction of emissions, will continue to have a direct reference to the Mission.

To make local-level efforts more effective, multi-level governance is a key element of the process; this aspect too will therefore be strengthened over the next few years. At the regional level, the relationship already started with the Emilia-Romagna Region on the Mission will be of fundamental importance. In fact, the Emilia-Romagna Region has in turn begun a journey towards zero emissions and moments of discussion and collaboration have already been part of this first year. In the following years, the working tables and specific meetings related to climate issues will continue.

The working tables and agreements with national and regional authorities - see for example the *Memorandum of Understanding between the 9 cities and the Ministry of Infrastructure and Sustainable Mobility* described in A2.2 - launched in this year of the beginning of the path towards neutrality, will continue until 2030 in line with the path of the Mission.



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Similarly, in this launch year of the Mission, the 9 Italian cities have organised themselves in an informal network to carry forward common issues in a synergistic way, such as, for example, the transition towards electrification and the consequent need to strengthen the infrastructure of the electricity grid. Also this path and the participation in the related tables will not see an interruption with the delivery of the first CCC. Furthermore, thanks to the Let'sGOv Pilot Project, of which the Municipality of Parma is a partner together with the other Italian cities selected for the mission, AESS, the University of Bologna and the Energy Center, it will be possible to understand how to best set up the work of engagement, data collection and innovative financial models to facilitate energy transition in the years to come. Within Let'sGOv, and in particular working in the thematic clusters "engagement", "data", and "finance", specific toolkits will in fact be drawn up to support the 9 cities in future data collection, the continuous involvement of the actors useful to reach the Mission goals and the definition of new financial instruments to achieve climate neutrality by 2030.



3 Part A – Current status of climate action

3.1 Form A-1 Baseline GHG Emissions Inventory

The baseline below refers to the following documents:

- Monitoring of the Sustainable Energy and Climate Action Plan (SECAP) of the Municipality of Parma of June 2023, which updates the Monitoring Emission Inventory as of 2019, drawn up by ATES PARMA, Energy and Sustainability Territorial Agency.
- Greenhouse Gas Report of the Province of Parma for the year 2019, drawn up by the University of Parma, Department of Chemical, Life and Environmental Sustainability Sciences and by the University of Siena, Department of Physical Earth and Environmental Sciences, containing the estimated emissions in the AFOLU and WASTE sectors, for the territory of the Municipality of Parma.

Furthermore, AESS developed some additions in order to complete the emission framework in accordance with the indications of the "Infokit for cities" document.

Note that table A-1.1, in order to contain all the energy carriers considered, has been split and therefore consists of two tables A-1.1.a relating to Scope 1 emissions and table A-1.1.b relating to scope 1, scope 2 and scope 3 emissions.

A-1.1.a: Final energy consumption by sector						
Year of reference	2019					
Unit of measure	MWh/year					
	SCOPE 1					
BUILDINGS	1,644,577.69	189,236.00	63,650.00	1,534.00	6,592.00	-
Fuel/energy carrier used	Methane	District heating heat	GPL	Burning oil	Diesel	Gasoline
TRANSPORTS	103,172.00	-	64,889.00	-	461,495.97	302,131.00
Fuel/energy carrier used	Methane	District heating heat	GPL	Burning oil	Diesel	Gasoline
WASTE	72,338.31				Consumption of the vehicles used for waste management is counted under transport	Consumption of the vehicles used for waste management is counted under transport
Fuel/energy carrier used	Methane				Diesel	Gasoline
IPPU INDUSTRIAL PROCESSES AND USE OF PRODUCTS						
Fuel/energy carrier used						
AFOLU AGRICULTURE, FORESTS AND OTHER LAND USE						
Fuel/energy carrier used						



A-1.1.b: Final energy use by source sectors						
Year of reference	2019					
Unit of measure	MWh/year					
	SCOPE 1			SCOPE 2	SCOPE 3	TOTAL
BUILDINGS	6,076.00	55,145.00		1,089,295.16		3,056,105.85
Fuel/energy carrier used	Thermal solar	Biomass	Biofuels	Electric energy		
TRANSPORTS	-	-	68,462.00	9,510.40		1,009,660.37
Fuel/energy carrier used	Thermal solar	Biomass	Biofuels	Electric energy		
WASTE				31,992.84		104,331.15
Fuel/energy carrier used				Electric energy		
IPPU INDUSTRIAL PROCESSES AND USE OF PRODUCTS						
Fuel/energy carrier used						
AFOLU AGRICULTURE, FORESTS AND OTHER LAND USE						
Fuel/energy carrier used						

A-1.2: Applied emission factors						
For calculation in tons of gas or MWh of primary energy						
Method used: IPCC						
Primary energy/energy source	Carbon dioxide (tCO ₂ eq)	Methane (CH ₄)	Nitrogen Oxide (N ₂ O)	Fluorinated gases (Hydrofluorocarbons and perfluorocarbons)	Sulphur hexafluoride (SF ₆)	Nitrogen trifluoride (NF ₃)
Electric energy [MWh]	0.282
Methane gas [MWh]	0.202					
Diesel [MWh]	0.268					
Automotive diesel ² [MWh]	0.2843					
Gasoline [MWh]	0.250					
Gasoline for motor vehicles ² [MWh]	0.2575					
LPG [MWh]	0.227					
Heat from DH ³ [MWh]	0.072					

² As indicated by the JRC guidelines in the context of the Covenant of Mayors campaign, for diesel and gasoline for motor vehicles the emission factors are to be considered increased by 3% compared to those used for stationary energy.

³ the emission factor indicated is the result of the weighted average of the emission factors of two district heating networks: a) DH of the University Campus fuelled by methane gas FE:0.255 tCO₂eq/MWh (the only DH network considered in the MEI 2019 in the PAESC monitoring) with a heat production of 9,841 MWh in 2019; b) City District



Burning oil [MWh]	0.268					
Biomass [MWh]	0.018					
Thermal solar [MWh]	0					
Biofuels [MWh]	0					
CH4 [ton]	27.2					
N2O[ton]	272.9					
F-gas						

A-1.3: Activities by sector						
Year of reference	2019					
Unit of measure	tgas					
	SCOPE 1			SCOPE 3		TOTAL
BUILDINGS						
Activity						
TRANSPORTS						
Activity						
WASTE	0.05	1.82	-	273.89	9.08	284.85
Activity	Wastewater management t CH4	Wastewater management t N2O		Composting / Landfill / Organic Stabilisation CH4	Composting / Organic Stabilisation N2O	
IPPU INDUSTRIAL PROCESSES AND USE OF PRODUCTS	22,338					
Activity	Miscellaneous					
AFOLU AGRICULTURE, FORESTS AND OTHER LAND USE	4674.09	101.59	272,61			5048,29
Activity	Enteric fermentation and manure management t CH4	Manure management and direct and indirect emissions from the soil N2O	Emissions from Urea as a CO ₂ fertilizer			

NOTES:

All the values entered in table A-1.3 are taken from the document "Greenhouse Gas Report of the Province of Parma for the year 2019", except for the IPPU sector. The document, in fact, estimates the contribution of the industry for the production of glass, a plant that is subject to the Emission Trading System and therefore has not been considered in this context. Furthermore, at the moment the variations in the carbon stock have not been included, even if quantified in the same document, and equal to -9921.64 tCO₂, in order to be able to better evaluate the variations due to the possible expansion of buildings.

Heating, fuelled by waste and 30% by methane gas, managed by IREN Spa FE: 0.64 tCO₂eq/MWh (see page 28 of the monitoring which reports the total and distributed heat produced although it is not included in the MEI) with a heat production in 2019 of 179,395 MWh.



On the other hand, as regards the IPPU sector, net of the glass production ETS plant, the emissions linked to the pharmaceutical industry sector were considered, which, thanks to the information retrieved from discussions with stakeholders, is estimated at 22,338 tCO_{2eq}, as the sum of process emissions and refrigerant gas (F-gas). The company used DEFRA and IEA factors to calculate these emissions.

A-1.4: Greenhouse gas emissions by sector				
Year of reference	2019			
Unit of measure	tCO_{2eq}/year			
	Scope 1	Scope 2	Scope 3	Total
BUILDINGS	363,510.01	306,806.46		670,316.47
TRANSPORTS	242,121.07	2,678.66		244,799.73
WASTE	15,111.82	9010.97	9,928.76	34,051.55
IPPU INDUSTRIAL PROCESSES AND USE OF PRODUCTS	22,338.00			22,338.00
AFOLU AGRICULTURE, FORESTS AND OTHER LAND USE	155,141.68			155,141.68
Total	798,222.58	318,496.09	9,928.76	1,126,647.43



A-1.5: Charts and diagrams

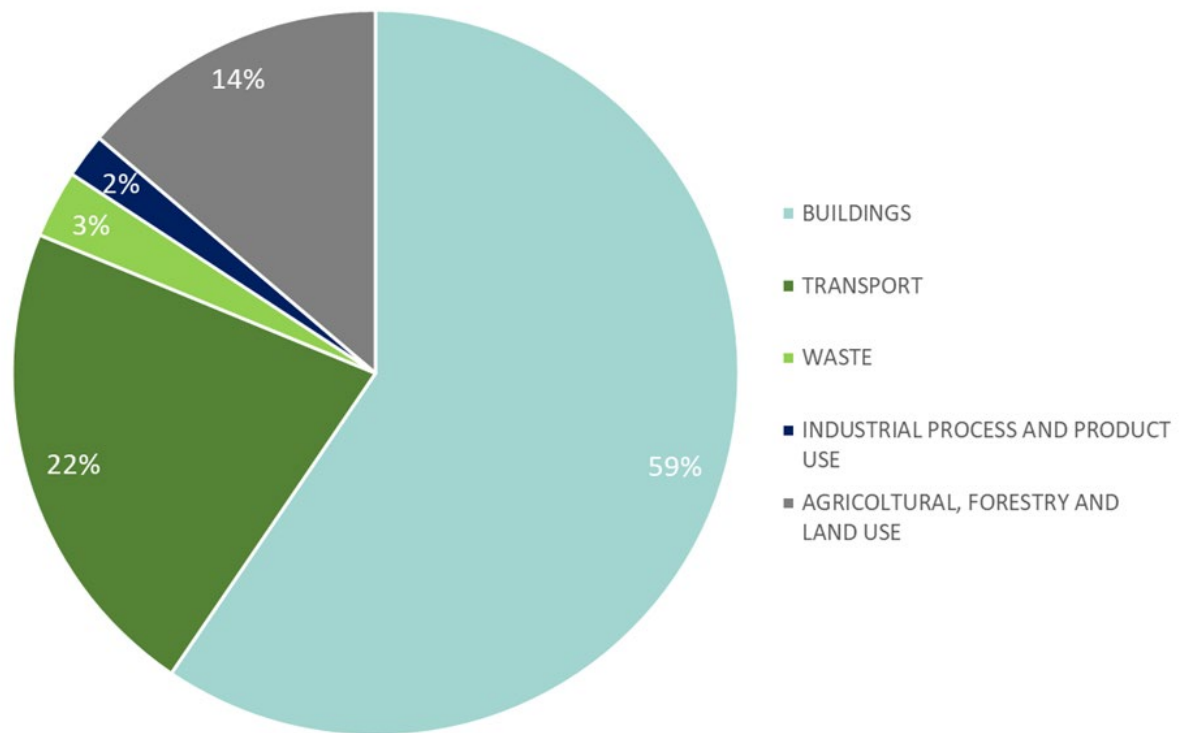


Figure 5 Distribution of emissions in 2019 by sector



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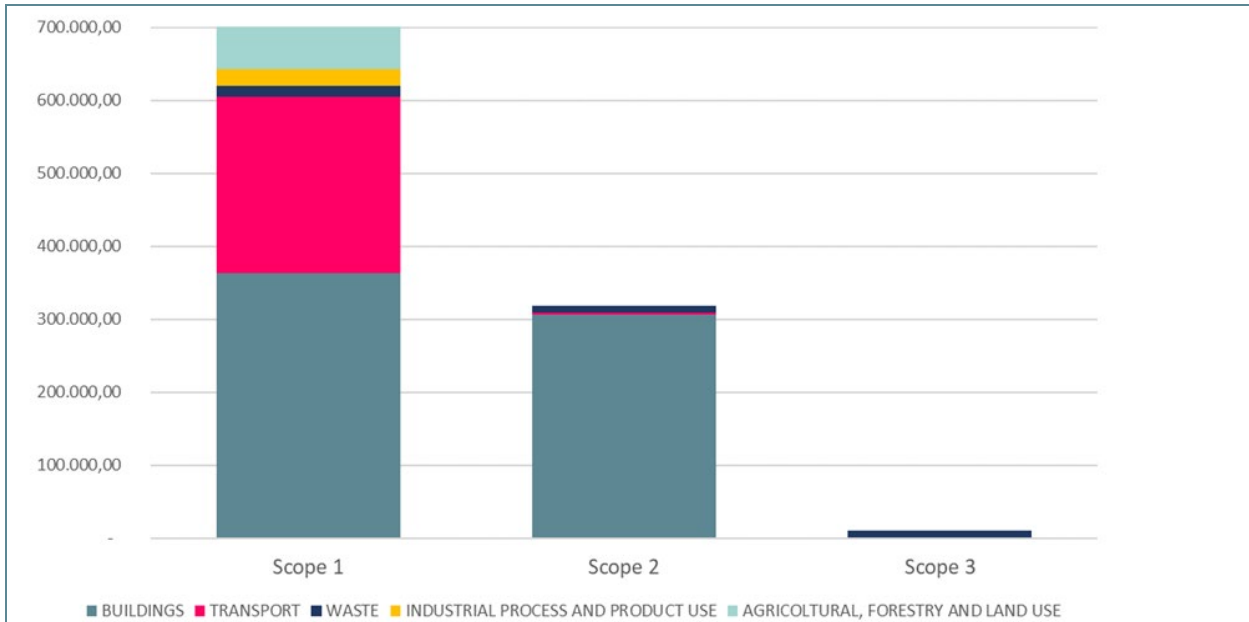


Figure 6 Breakdown of 2019 emissions by Scope and by sector

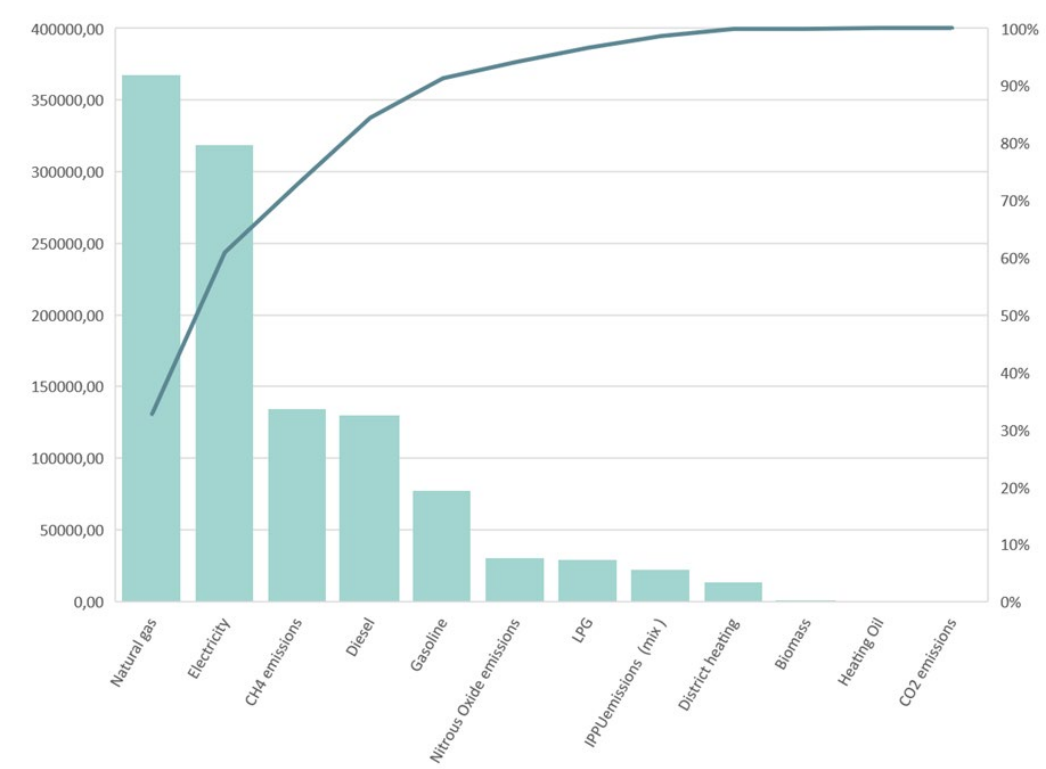
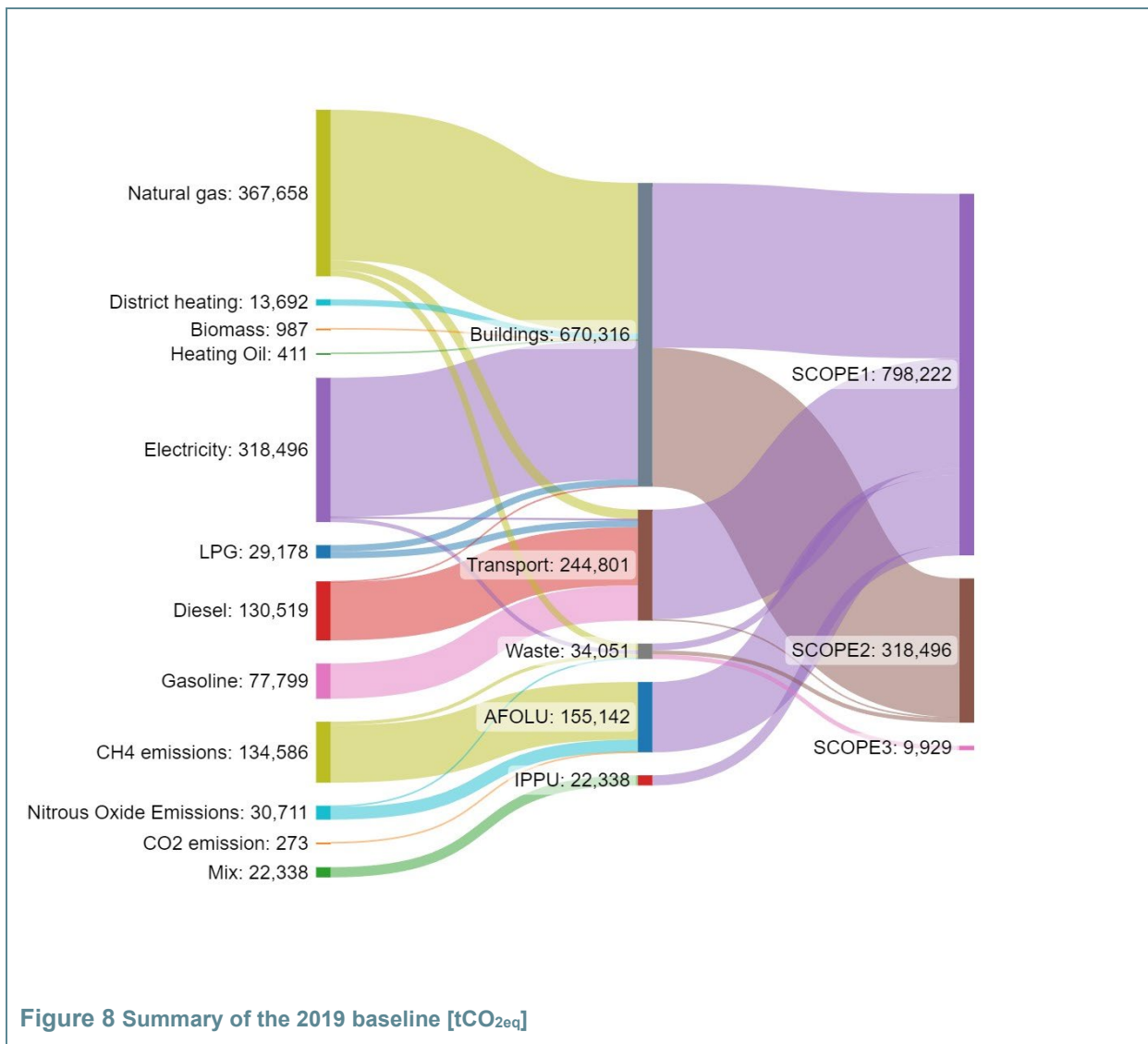


Figure 7 2019 emissions breakdown by energy carrier/emission gas



A-1.6: Description and analysis of the GHG emissions baseline inventory

The baseline developed for this document refers to the following documents:

- Monitoring of the Sustainable Energy and Climate Action Plan (SECAP) of the Municipality of Parma of June 2023, which updates the Monitoring Emission Inventory as of 2019, drawn up by ATESS PARMA, Energy and Sustainability Territorial Agency;
- Greenhouse Gas Report of the Province of Parma for the year 2019, drawn up by the University of Parma, Department of Chemical, Life and Environmental Sustainability Sciences and by the University of Siena, Department of Physical Earth and Environmental Sciences, as regards the estimated emissions in the AFOLU and WASTE sectors, for the territory of the Municipality of Parma.

Furthermore, for some sectors ATESS carried out some further elaborations in order to integrate the available data.



Differences between Monitoring 2019 emissions inventory and CCC baseline

As regards **the end uses of energy**, the consumption data in MWh contained in the 2019 emission inventory template developed as part of the SECAP Monitoring were used.

For the calculation of the baseline of this CCC, the following differences are highlighted with respect to what was elaborated in the 2019 Secap monitoring:

1. The IPCC emission factors in tCO₂eq/MWh proposed by the Covenant of Mayor Office (COMo), in ANNEX 1 – Fuel Emission Factors Database, were applied to consumption in MWh. In fact, it should be noted that the methodology of the SECAP and related monitoring referred instead to the emission factors relating to the standard IPCC for CO₂ only.
2. For electricity consumption, the national emission factor for 2019 was used, equal to 0.282 tCO₂eq/MWh; in the SECAP monitoring instead, in accordance with the methodology proposed by the COMo, the emission factor used was equal to 0.342 tCO₂/MWh obtained as a recalculation of the regional emission factor in 2004 (SECAP baseline) taking into account the production of electricity at local level.

Moreover, the following additions were made to the final energy consumption considered in the monitoring inventory:

- a) Heat from district heating: heat from the city district heating network managed by IREN Spa was added, fuelled by waste and 30% by methane gas. Additional heat: 179.395 MWh as of 2019.
- b) Electricity and diesel consumption of the railway in the transport sector: the electric consumption of the railway section which insists on the Municipality of Parma has been estimated, organised on four different lines: Milan-Bologna section (electrified), Parma - La Spezia section (electrified), Parma – Brescia (diesel) and Parma – Suzzara section (diesel). Overall, the consumption of 80 trips/day on the Milan-Bologna section and 60 on the section was estimated for a total electricity consumption of 2,179 MWh/year. On the other hand, as regards the diesel sections, consumption was estimated at 788.18 MWh of diesel. Both quantities were considered additional to LPT consumption.

Additional sectors taken from the Greenhouse Gas Report of the Province of Parma for the year 2019

The data used in the CCC baseline from the Greenhouse Gas Balance of the Province of Parma for the year 2019 refer to the Waste sector and the AFOLU sector. Namely:

- a) Direct emissions of CH₄ and N₂O from the Waste sector. They have been divided into Scope 1 (management of waste water, as the 4 purification plants that serve the city are located within the city limits) and Scope 3 (composting, landfill and organic stabilisation, as these processing phases take place in plants located outside the Municipality of Parma).
- b) Direct emissions of CH₄, of CO₂ and N₂O from the AFOLU sector. All the emissions estimated in Scope 1 were considered, as they are produced by the farms present in the Municipality. In particular, the emissions deriving from enteric fermentation, manure management, use of urea as fertilizer, direct and indirect emissions of N₂O from the soil were considered, instead the estimate of the negative change in CO₂ emissions «change in the CO₂ stock of the soil » was omitted, postponing the assessment of the absorption potential of the various natural ecosystems to a later stage.

As far as the IPPU sector is concerned, the Greenhouse Gas Inventory of the Province of Parma for the year 2019 estimates the contribution of the production plant belonging to the glass and crystal



industry sector located in the city. However, it appears to be included in the ETS system and therefore to be excluded from the present baseline.

The IPPU sector instead includes the direct emissions of the pharmaceutical plant located in the Municipality of Parma.

Baseline results

The baseline of the Parma CCC in 2019 was quantified at 1,126,647 tCO_{2eq}.

The general framework presents the majority of emissions, around 71%, in Scope 1 emissions generated directly within the municipal boundaries. Scope 2, on the other hand, covers 28% of emissions and is populated solely by the final uses of electricity. Instead, as regards Scope 3, equal to only 1% of total emissions, it exclusively includes emissions from the "Waste" sector as regards a small portion of waste sent to the Monte Ardone landfill, in the Municipality of Fornovo (in the province of Parma), the composting phases, and organic stabilisation. Wastewater management, on the other hand, takes place in city purifiers located within the municipal boundaries.

It should be noted that at the moment the emissions inventory considered does not include emissions from vehicular traffic outside Parma but produced by vehicles registered in the Municipality.

As regards the sectors, however, most of the emissions (about 670,316 tCO_{2eq}) are included in the "Buildings" category. It corresponds in fact to the Stationary Energy sector, which together with the Transport sector cover, except in some cases, the emissions of the 2019 inventory of the SECAP monitoring.

In the "buildings" sector, most of the emissions are attributable to the industrial and residential sectors.

BASELINE - 2019 EMISSIONS	tCO _{2eq}	%
BUILDINGS: public	11.380	1%
BUILDINGS: tertiary	151.904	13%
BUILDINGS: residential	254.394	23%
BUILDINGS: industry	252.639	22%
BUILDINGS	670.316	59%
TRASPORT: municipal fleet	282	0%
TRASPORT: public transport	15.259	1%
TRASPORT: private and commercial transport	229.259	20%
TRANSPORT	244.800	22%
WASTE	34.052	3%
IPPU	22.338	2%
AFOLU	155.142	14%
TOTAL	1.126.647	100%

Secondly, the AFOLU, Agriculture, Forestry and other Land Uses sectors, with approximately 155,000 tCO_{2eq}, and the Transport sector, with approximately 133,000 tCO_{2eq}, are those that include the majority of emissions. Followed by the Waste sector with around 34,000 tCO_{2eq}, and the IPPU sector with around 22,000 tCO_{2eq}.

The results of the SECAP monitoring not only illustrate the baseline from which to start for the CCC but also identify the sectors of reference and to act more on to achieve climate neutrality by 2030.

The "buildings" and transport sectors are those with the highest percentage of emissions in the area. Without neglecting AFOLU, IPPU and waste, the plans, strategies and all-round governance of the Municipality have concentrated and will concentrate, in these years of the Mission process, on facilitating the reduction of emissions on the territory from these two sectors.



3.2 Module A-2 Analysis of existing policies and strategies

For several years the Municipality of Parma has introduced a series of policies aimed at reducing emissions and climate-altering gases which have in fact made it possible to apply for the European EGCA - Green Capital Award 2022 in 2019. It can be said that the process began in 2005 with the Municipal Energy Plan, a document which provided an estimate of the main energy consumption in the city area. This estimate was the fundamental yardstick for joining the Covenant of Mayors, which requires the quantification of emissions corresponding to energy consumption.

In 2019, the Municipality adhered to the New Covenant of Mayors for Climate and Energy, which involves a significant change compared to the previous initiative: by joining the Covenant, the signatory is no longer limited to intervening only in the energy sector, but to implement actions related to adaptation to the most extreme climatic events, such as flood risk, heat waves and droughts. Unlike previous plans, the Climate City Contract required a 360° involvement of the entire city ecosystem which includes public and private stakeholders, administration sectors, investee companies, who collaborated by sharing actions underway or to be implemented on the municipal area.

The preparation of the plan was an opportunity to align all the main municipal planning documents that could have an impact on local climate-changing emissions such as, for example, the Sustainable Urban Mobility Plan (SUMP) and the General Urban Plan (PUG).

To give an overall picture of the work that underlies the compilation of this document, both at local, regional and national levels, a list of the policies, regulations, strategies and plans that have contributed and all is presented below. Today they contribute directly to the drafting of the CCC (Table A 2.1). The objective of this document is not the mere collection of pre-existing strategies but the need to create even greater synergies between central and local administrations for an ever stronger multi-level governance, necessary for the achievement of the climate neutrality objective.

Table A 2.2. instead shows **the most recent policies and strategies in which the Municipality of Parma is even more directly involved. These policies and strategies are a key integral part of the City's strategy towards neutrality** as will be further explained in Part B of this document.

Note: for easier reading of the document, table A-2.3 Emission Gap has been moved to Part B of this document.

A-2.1: List of relevant policies, strategies & regulations			
Type	Level	Name & Title	Description
Local	plan	PUMS (Urban Plan of Sustainable Mobility)	It is a strategic long-term planning tool (10 years) capable of including both infrastructural and accompanying measures relating to demand management and mobility regulation. The development of the SUMP is envisaged in implementation of article 22 of law 340/2000 - Urban mobility plans - and is subjected to "Strategic Environmental Assessment" (SEA).
Local	Plan	General plan of urban traffic (PGTU)	It is one of the short-term (two-year) implementation tools of the Sustainable Urban Mobility Plan. In more detail, it provides an indication of the



			<p>action topics of the plan, selecting from:</p> <ul style="list-style-type: none"> - interventions on the transport offer; - interventions on the demand for mobility. <p>Due to the articulated presence of planning and programming tools in the sector, the PGTU is able to provide an updated picture of the actions in progress and to provide indications with respect to the implementation of measures and actions that will develop in the short-medium term.</p>
Local	Plan	Sustainable Energy and Climate Action plan (SECAP)	The Sustainable Energy and Climate Action Plan is a document drawn up by municipalities signing up to the Covenant of Mayors to demonstrate how the municipality intends to achieve its CO ₂ emission reduction targets.
Local	Plan	General Urban Plan (PUG)	Planning tool with reference to the entire municipal area, to outline the structural invariance and the strategic choices of urban planning and development within its competence, oriented towards the regeneration of the urbanised area, the reduction of land consumption and the environmental and territorial sustainability of uses and transformations.
Local	Regulation	Urban Planning Regulations (RUE)	It is the tool that contains the rules relating to construction activities, physical and functional transformation and conservation of building works, including the hygiene rules of building interest, as well as the discipline of architectural and urban planning elements, green spaces and other elements that characterise the urban environment.
Local	Plan	Municipal Structural Plan (PSC)	It is the general urban planning tool, with regard to the entire municipal territory through which strategic choices are outlined.
Local	Plan	Municipal Operational Plan (POC)	It is the urban planning tool that identifies and regulates the interventions for the protection and enhancement, organisation and transformation of the territory to be implemented over a five-year period. The POC mainly contains: the delimitation, the urban layout, the intended uses, the building indexes; the methods of implementation of the transformation interventions, as well as those of conservation, the definition of the territorial endowments to be created or redeveloped, the identification and regulation of the social housing interventions, the location of the public services and the works of public interest.
Local	Plan	Home Work Travel Plan (PSCL)	Analyses the employee mobility habits in order to identify problems, the causes that generate them and possible solutions in order to increase their



			well-being and at the same time create environmental sustainability.
Regional	Strategy	Mitigation and adaptation strategy for climate change of the Emilia-Romagna Region	The document contains an in-depth assessment of the regional emission framework and future and ongoing climate change scenarios and a sectoral analysis of the main regional vulnerabilities. In line with the Memorandum of Understanding, signed by the region in 2015 and which commits it to an 80% reduction of its emissions by 2050, the aforementioned Strategy was defined to begin a process of awareness, integration and strengthening of regional policies for mitigation and adaptation that will go far beyond what the European Commission is asking us.
Regional	Strategy	Pact for Job and Climate	In 2020, at the end of a participatory process among institutions, economic and social representatives, the Emilia-Romagna Region signed the Pact for Job and Climate with 55 signatories: local authorities, trade unions, businesses (industry, crafts, commerce, cooperation), the four regional universities (Bologna, Modena and Reggio Emilia, Ferrara, Parma), the regional education office, environmental associations (Legambiente, Zero Waste Municipalities Network), the third sector and voluntary work, professions, chambers of commerce and banks (Abi). The objective of the Pact is to relaunch regional planning towards the SDG objectives including the fight against inequalities, the ecological transition, the reduction of climate-changing emissions, working dignity, digital innovation, gender equality, requalification, efficiency and safety of buildings.
Local	Strategy	Regional energy plan (PER)	The Regional Energy Plan - approved with Legislative Assembly Resolution no. 111 of 1st March 2017 - establishes the strategy and objectives of the Emilia-Romagna Region for climate and energy up to 2030 on the subject of strengthening the green economy, energy savings and efficiency, the development of renewable energies, interventions on transport, research, innovation and training. In particular, the Plan adopts the European objectives for 2020, 2030 and 2050 in terms of climate and energy as a driver of development of the regional economy.
Local	Strategy	Regional integrated air plan (PAIR)	During 2021, Emilia-Romagna Region began the planning process that will lead to the approval of the new Regional Integrated Air Plan (PAIR 2030). The goal is to reduce air pollution and improve air quality.



Regional	Strategy	Regional strategy Agenda 2030 for Sustainable Development	<p>The strategy was approved in November 2021 by the Emilia-Romagna Region. In this way, the 17 objectives of the United Nations Agenda have been internalised at a territorial level, in the belief that the new regional development paradigm must be based on sustainability, in its inseparable components – environmental, social, economic and institutional. The goal is on the one hand to contribute, together with local communities, to the implementation of the global action program for people, the planet and prosperity. On the other hand, in full coherence with the Pact for Job and the Climate, to face enormous challenges such as the demographic crisis, the digital transition and the fight against inequalities and the climate emergency - to generate new quality jobs, reduce economic, social, environmental and territorial divisions and achieve full gender equality, accompanying Emilia-Romagna in the ecological and digital transition.</p>
Regional	Strategy	Integrated Regional Transport Plan	<p>The regional law n. 30 of 1998 (General regulation of regional and local public transport) identifies the Prit (Integrated Regional Transport Plan) as the main planning tool with which the Region establishes guidelines and directives for regional mobility policies and fixes the main interventions and priority actions to be pursued in the various fields of intervention.</p>
Regional	Programming	Regional program of the European Regional Development Fund 2021-2027	<p>The Emilia-Romagna Regional Operational Program (OP) is the programming document that defines the strategy and interventions for the use of the resources assigned to the Region by the European Regional Development Fund (ERDF), within the framework of the Cohesion Policy. Through the ERDF, the objective is to strengthen the economic, social and territorial cohesion of the European Union and reduce the development gap between its regions, with 5 strategic objectives for 2021-2027: a smarter, greener Europe, more connected, more social, closer to citizens.</p>
National	Plan	Climate Change Adaptation Plan (PNACC)	<p>In order to implement the National Strategy for Adaptation to Climate Change (SNAC), approved by Directorial Decree no. 86 of 16 June 2015 by the Ministry of the Environment and the Protection of the Territory and the Sea, the elaboration of the National Adaptation Plan (PNACC) was started. The goal is to offer a guidance tool for planning and implementing the most effective adaptation actions in the Italian territory, in relation to the critical issues</p>



			encountered, and for integrating adaptation criteria into planning procedures and tools existing. In relation to the Strategic Environmental Assessment (VAS) and the Environmental Impact Assessment, the activities functional to the progress of the document validation procedure are underway.
National	Plan	National Energy Strategy (SEN)	<p>The SEN2017 is the result of an articulated and shared process that lasted a year which involved, right from the preliminary phase, the public bodies operating on energy, the operators of the electricity and gas transport networks and qualified experts in the energy sector. The Strategy aims to make the national energy system more:</p> <ul style="list-style-type: none"> -competitive -sustainable -safe. <p>The National Energy Strategy is an drive for the realisation of important investments, increasing the trend scenario with additional total investments of 175 billion by 2030, broken down as follows:</p> <ul style="list-style-type: none"> -30 billion for gas and electricity networks and infrastructures -35 billion for renewable sources -110 billion for energy efficiency. <p>To guarantee transparency in the implementation process, it was decided to launch a participatory and shared process of revision of the Strategy every three years.</p>
National	Plan	Integrated National Plan for Energy and Climate (PNIEC)	<p>With the Integrated National Plan for Energy and Climate, the national objectives for 2030 on energy efficiency, renewable sources and the reduction of CO₂ emissions are established, as well as the objectives in terms of energy security, interconnections, the single market of energy and competitiveness, development and sustainable mobility, outlining for each of them the measures that will be implemented to ensure their achievement. In January 2020, the Plan was published which implements the innovations contained in the Decree Law on Climate as well as those on investments for the Green New Deal envisaged in the 2020 Budget Law.</p>
National	Plan	National Recovery and Resilience Plan (PNRR)	<p>The PNRR is part of Next Generation EU, an economic recovery project dedicated to member states launched by the European Commission in 2021, with an amount of resources equal to 191.5 billion. The Plan is divided into 6 Missions, or main thematic areas on which to intervene, identified in full coherence with the 6 pillars of the Next Generation EU. The Missions are divided</p>



			<p>into Components, areas of intervention that address specific challenges, which are in turn composed of Investments and Reforms. There are 3 further submissions (young people, gender equality and reduction of the citizenship gap) or transversal priorities that guide the investments, reforms and projects of the Plan and have the objective of reducing the territorial, generational and gender gaps present in the country.</p>
National	Plan	National plan to contain gas consumption	<p>The objective of the Plan is to promote conscious and intelligent behaviour in the consumption of gas and electricity. The MASE policy document confirms the decarbonisation commitments for 2030 to increase energy independence. The recent revision of the document in September 2022 adopted measures aimed at addressing the security of national natural gas supply in order to:</p> <ul style="list-style-type: none"> - ensure a high level of storage capacity for the winter of 2022-2023; - rapidly diversify the origin of imported gas.



A-2.2: Description and analysis of the policies and related intervention of the Municipality of Parma

The following table has included **the most recent policies and strategies, from national to local level, not only relevant for the climate neutrality of the territory but also which the Municipality of Parma has directly and profitably influenced.** At the municipal level, the individual plans, agreements and/or strategies that contribute to the path towards neutrality are also listed.

Level	Title	Description	Municipality of Parma intervention
Plan	PNIEC update - Integrated National Energy and Climate Plan	The "proposal" to update the Plan, scheduled for 30 June 2023, will take into account the public consultation open to all: individuals, associations, stakeholders and institutions.	The Municipality of Parma, together with the other 8 Italian cities of the mission, sent, at the direct request of the Ministry itself, 18 forms to be included as strategies of the new PNIEC.
National	National plan to contain gas consumption	The provision, published on 17 October 2022, establishes the rules for containing consumption to be followed for the 2022-2023 winter thermal season, in the face of the energy crisis that has affected the country. The Plan provides for the reduction of the temperature for heating the buildings and reduces the operating limits of the heating systems, i.e. switching on and managing.	The Municipality of Parma promptly implemented the provision for its properties and encouraged the entire territory to follow the Plan.
National	National Recovery and Resilience Plan (PNRR)	The National Recovery and Resilience Plan (PNRR) is part of the Next Generation EU (NGEU) program, the 750 billion euro package, half of which consists of grants, agreed by the European Union in response to the pandemic crisis. The main component of the NGEU program is the Recovery and Resilience Facility, RRF which has a duration	The Municipality of Parma is making use of the PNRR funds, thanks to which new and important measures will be developed to contain emissions ⁴

⁴ See PNRR sheets within the portfolio.



Comune di Parma

2030 Climate Neutrality Action Plan



		of six years, from 2021 to 2026, and a total size of 672.5 billion Euros (312.5 grants, the remaining 360 billion loans at low interest rates).	
National	Memorandum of understanding for the pursuit of the objectives of the European Union mission "climate-neutral & smart cities"	Memorandum of understanding between the 9 cities and the Ministry of Infrastructure and Sustainable Mobility (MIMs)	Purpose of the agreement: a. proposing possible solutions, also of a regulatory nature, for overcoming possible design or implementation critical issues that may prevent or hinder the pursuit of the Mission of the Cities in the areas of competence of the Ministry; b. promoting cooperation for the development of specific projects for the success of the City Mission, both with a view to attracting private funds for the implementation of the investment plans of each of the Nine Cities and to develop experiments likely to be adopted by other cities as well ; c. identifying any additional resources intended to finance the investments necessary for the pursuit of the objectives of the City Mission; d. collecting and sharing good practices, particularly important activities and the projects developed and implemented by the Nine Cities with the aim of creating a knowledge base that is also useful for other Municipalities, public administrations or public bodies to proceed more quickly and efficiently in



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2030 Climate Neutrality Action Plan



			the objectives of the Cities Mission; e. collaborating on further projects to be implemented in the territories of the Nine Cities within the same scope of the Mission and in the areas of competence of the Ministry.
Regional	REGIONAL COUNCIL RESOLUTION No. 214/2023	Specifying location criteria to ensure the maximum diffusion of photovoltaic systems and protect agricultural land and the landscape and environmental value of the area.	The Municipality of Parma participated in the working tables with the Emilia-Romagna Region for the definition of suitable areas. The activity is essential for the greater development of RES (Electric consumption incentive rates) in the area.
Regional	PAIR 2030	During 2021, the Region began the planning process that will lead to the approval of the new Regional Integrated Air Plan (PAIR 2030).	The Municipality of Parma actively participated in the PAIR 2030 participation process organised by the Region.
Regional	Pact for Job and Climate	The shared agreement signed by the Region together with local authorities, trade unions, businesses, schools, universities, environmental associations, the non-profit sector and the voluntary sector, professions, chambers of commerce and banks for the revitalisation and development of Emilia-Romagna based on environmental sustainability, economic and social. Complete decarbonisation by 2050 and 100% of renewable energy by 2035, 3% of the regional GDP in research and NEET (young people who do not study and work) below 10%.	The Municipality of Parma actively participates in the project and in the working tables set up by the Region within the Pact.



MUNICIPAL level		
Description and intervention of the Municipality		
PGTU	Description	Drafting of the General plan of urban traffic. The PGTU of Parma is structured as a short-term implementation tool of the Sustainable Urban Mobility Plan (SUMP), a ten-year strategic tool that provides indications on the action topics of the plan, with indications both on transport supply and demand.
	Municipality of Parma intervention	The PGTU 2023 2025 has a strategic value towards the mission by providing indications strongly linked to sustainable mobility.
PUG 2050	Description	Participatory drafting of the General Urban Plan of the city of Parma having the following main objectives: Grow up to 2050 without consuming resources; Finding solutions for new ways of living, working and being together.
	Municipality of Parma intervention	A PUG in synergy with the climate Mission: measures such as the Albedo map and the soil permeability map will be introduced in the update of the PUG being adopted in order to have more and more territorial/urban planning tools consistent with the principles of the mission. General Urban Plan (PUG) (Parma 2050): - contain the consumption of soil as a common good and non-renewable resource that performs ecosystem functions and services, also in relation to the prevention and mitigation of hydro geological instability events and mitigation and adaptation strategies to climate change; - promote the regeneration of urbanised territories, contain the consumption of soil as a common good and non-renewable resource that performs ecosystem functions and services, also in relation to the prevention and mitigation of hydro geological instability events and mitigation and adaptation strategies to climate change; - promote the regeneration of urbanised territories and the improvement of urban and building quality, with particular reference to the efficiency in the use of energy and physical resources, the environmental performance of the artefacts and materials, the healthiness and comfort of the buildings, compliance to anti-seismic and safety standards, the quality and liveability of urban spaces and neighbourhoods, the promotion of social housing interventions and further actions for the satisfaction of the right to housing pursuant to regional law 8 August 2001, n. 24; - protect and enhance the territory in its environmental and landscape characteristics favourable to human well-being and the conservation of biodiversity; - protect and enhance agricultural territories and the related agri-food production capacities, safeguarding the various typical vocations that characterise them; - contribute to the protection and enhancement of the historical and cultural elements of the regional territory; - promote the conditions of attractiveness of the regional and local systems, for the development, innovation and competitiveness of productive and tertiary activities;



		- promote greater levels of knowledge of the territory and of the existing building heritage, to ensure the effectiveness of the protection actions and the sustainability of the transformation interventions.
PUMS (SUMP)	Description	Sustainable Urban Mobility Plan whose update must be developed by 2024.
	Municipality of Parma intervention	In agreement with the technicians responsible for updating the plan, the actions collected will be aligned with the requirements of the Mission. The new activities of the updated SUMP will therefore also be in complete synergy with the municipal strategy towards climate neutrality.
PULS (SULP)	Description	Sustainable Urban Logistics Plan within the SUMP, the update of which must be developed by 2024.
	Municipality of Parma intervention	Measures to improve the efficiency of the distribution logistics system are included in the PULS, both through the regulation of access to vehicles for the transport of goods in the city centre, and by promoting cycle-logistics and the experimentation of the use of electric van sharing.
Low Emissions Zone, Parma 30 km/h zone	Description	The Low Emission Zone consists of: a green area, with the extension of the ZTL area up to the ring road; a blue area, defined as the 30 km/h zone within the avenues of the Municipality of Parma
	Municipality of Parma intervention	With this tool which is part of the SUMP not only road safety is increased in the city but emissions are reduced thanks to the environmental class of the cars with permission to circulate in the areas.
RESOLUTION N. GC-2022-362 OF THE MUNICIPAL COUNCIL ON 28/09/2022	Description	European Union mission "Climate-neutral & smart cities": acknowledgment of the signing of the Memorandum of Understanding and definition of internal governance.
	Municipality of Parma intervention	Approval of the establishment of a permanent "Steering Group" for strategic coordination and supervision of activities related to the Mission made up of: o the Councillor for Environmental, Energy and Mobility Sustainability with responsibility for the Carbon Neutral City, with the role of political coordinator; o the Deputy Mayor charge for European Projects o the Councillor for Educational Services and Digital Transition; o the Councillor for Urban Regeneration; o Councillor for Public Works and Legality.
RESOLUTION N. GC-2023-54 OF THE MUNICIPAL COUNCIL ON 01/03/2023	Description	Approval of environmental strategic guidelines in the waste, material recovery, circular economy and physical agents sectors
	Municipality of Parma intervention	Areas of intervention: 1. prevention and reduction of waste production; 2. maximisation of differentiated waste collection and material recovery; 3. minimisation of final disposal and energy recovery; 4. implementation of the new urban waste collection service management contract with relative improvements and introduction of the environmental objectives defined by the programmatic instruments in the annual economic and financial plans;



		<p>5. strengthening of control activities on waste and decorum;</p> <p>6. efficiency in the management of environmental abuse and crime proceedings and sanctioning proceedings;</p> <p>7. management of issues relating to environmental hygiene and the objectives of "Healthy and resilient city" and "Asbestos Free city";</p> <p>8. protection of air quality and fight against atmospheric pollution;</p> <p>9. protection of the population from pollution deriving from physical agents: electromagnetic fields, noise pollution and light pollution;</p> <p>10. development of transversal projects and activities aimed at increasing the dissemination of ongoing projects, at transferring knowledge and stimulating virtuous lifestyles</p>
<p>RESOLUTION N. GC-2023-42 OF THE MUNICIPAL COUNCIL ON 15/02/2023</p>	Description	<p>Subject: Mission 100 Cities "Climate neutral and Smart Cities" - Parma Climate Neutral 2030 - Approval of strategic guidelines in the field of energy and climate</p>
	Municipality of Parma intervention	<p>Priority areas of intervention:</p> <ol style="list-style-type: none"> 1. energy/climate under the responsibility of the Ecological Transition Sector for the 100 Cities Mission "Climate Neutral and Smart Cities" - Parma Climate Neutral 2030, in synergy with the General Management; 2. networking and related communication; 3. energy efficiency of buildings; 4. energy saving and reduction of consumption; 5. production of energy from renewable sources;
<p>RESOLUTION N. GC-2023-198 OF THE MUNICIPAL COUNCIL ON 14/06/2023</p>	Description	<p>Subject: Strategic objective of the Organisation called "Optimisation of consumption" - Expression of favourable direction regarding the implementation of actions aimed at reducing energy consumption, in line with the Parma Climate Neutral 2030 Project</p>
	Municipality of Parma intervention	<p>Actions identified:</p> <ol style="list-style-type: none"> 1 - annual update of the knowledge framework of energy consumption of buildings and municipal assets; 2 - definition of the energy diagnosis program and the APE for buildings; 3 - management measures: <ul style="list-style-type: none"> - extension of the measures on winter heating provided for by City Council Resolution no. 448/2022 also for the 2023/2024 thermal season; - implementation of measures aimed at limiting consumption relating to summer air conditioning, in school services buildings, libraries, museums and general services for the city, so that the systems operate, where technically possible and without prejudice to any adequately motivated specific provisions, primarily in dehumidification mode, for a maximum period of 8 hours per day, from 15 June to 15 September 2023 at a temperature that must not be lower than 27 degrees Celsius, minus 2 degrees Celsius of tolerance;



		<p>- reduction of the switch-on period of the public lighting points by 60 minutes/day (30 minutes after sunset and 30 minutes before sunrise) from 22 June 2023 until 30 September 2023, possibly modifiable with a specific council act and compatibly with the technical regulation requirements;</p> <p>4 - Innovative measures: experimental installation of predictive sensors aimed at energy optimisation in 2 types of municipal school buildings (Albertelli-Newton School and European School)</p> <p>5 - Structural measures:</p> <ul style="list-style-type: none"> - verification and proposal for periodic modification of the energy efficiency measures envisaged in the three-year program of Public Works; - introduction of advanced contractual forms of public-private partnership and energy performance contracts (EPC); <p>6 - Constant monitoring of the impact of the interventions identified on consumption, through specific management software;</p> <p>7 - Definition of a dedicated communication plan that accompanies the implementation of the interventions.</p>
<p>RESOLUTION N. GC-2023-189 OF THE MUNICIPAL COUNCIL ON 07/06/2023</p>	Description	Favourable opinion for the signing with ARPAE of the Convention regulating collaboration in environmental matters for the analysis of the chemical status of surface river water bodies in the territory of the Municipality of Parma.
	Municipality of Parma intervention	The Municipality of Parma intends to improve the qualitative status of surface water bodies, present in its territory, and identify the most appropriate actions for achieving and maintaining the qualitative status prescribed by current legislation.
<p>RESOLUTION N. GC-2023-68 OF THE MUNICIPAL COUNCIL ON 08/03/2023</p>	Description	Parma Climate Neutral 2030 - Approval of the feasibility study relating to a Renewable Energy Community in the Ljubljana District for the purpose of applying for a funding call. The tender also includes the funded project on communication and citizen involvement.
	Municipality of Parma intervention	The Municipality approves the feasibility study of a Renewable Energy Community in the Lubiana District at the Albertelli-Newton Comprehensive Institute for a total amount of 661,304.70 euros. It also expresses favourable opinion for participation in the regional tender OP ERDF 2021-2027 (specific objective 2 action 2.2.3) and in the Environment 2023 tender of the Cariparma Foundation. The intervention will be included in the financial planning tools only following the granting of the contribution and the financing of the share to be paid by the Foundation.
<p>RESOLUTION N. GC-2023-136 OF THE MUNICIPAL COUNCIL ON 19/04/2023</p>	Description	Favourable opinion to the signing of a collaboration agreement between the National Research Council (CNR), through the Institute of Materials for Electronics and Magnetism of the National Research Council (IMEM) and the Municipality of Parma within the project Parma Climate Neutral 2030.



	Municipality of Parma intervention	KINETIC project "knowledge integration for neighbourhoods in energy transition led by inclusive communities" ped code 00031" and renewable energy community "cer area campus"; "CANVAS" PROJECT (DUC Building): The municipal office building in Largo Torello De Strada in Parma will be used as a demo-site for the national project CANVAS "New Concepts, Materials and Technologies for the Integration of PhotoVoltaic in Buildings in a Widespread Generation Scenario
RESOLUTION N. GC-2023-145 OF THE MUNICIPAL COUNCIL ON 26/04/2023	Description	Asbestos free city project for the remediation of asbestos on building roofs of Parma - Approval of guidelines.
	Municipality of Parma intervention	operational guidelines: a) give mandate to the Ecological Transition Sector to: - request the activation of the necessary authorisations to consult personal data, cadastral databases, etc., for the personnel involved in the project; - request the Operator and ATERSIR to include in the Economic-Financial Plans of the waste service an adequate allocation for the coverage of the asbestos micro-collection service for domestic users; - before the formal initiation of proceedings against the owners of buildings with asbestos roofing, forward a notice to users by means of an "amicable letter", containing the aims of the project, the opportunities deriving from the execution of the remediation and the persons to contact in case of need for clarification; - notify the Productive Activities and Construction Sector of buildings not present in the buildings register for the purpose of ascertaining any building abuses; - integrate the 2023 tariff plan approved with City Council resolution no. 439 dated 24/11/2022 in the secretarial rights section, providing for the exemption from the payment of the same rights, for ordinary building practices (excluding those undergoing amnesty), submitted from 01/07/23 to 31/12/2025 for interventions on existing buildings which provide for the removal of an asbestos roof, after consulting the Financial Sector; b) entrust a mandate to the Productive Activities and Construction Sector to: - activate the necessary building inspections on any buildings not present in the land registry, in the event of a report from the Ecological Transition Sector; - order the adaptation of the online services for the submission of building practices, to implement the modification relating to secretarial rights; c) entrust a mandate to the External Relations and Territorial Marketing Sector to launch an important publicity and communication action relating to the project and the opportunities associated with it, in coordination with the Ecological Transition Sector: relaunch the initiative following the press conference presentation, communication of results, etc.) until the conclusion of the Project;



RESOLUTION N. GC-2023-167 OF THE MUNICIPAL COUNCIL ON 17/05/2023	Description	Planning and management of mining activities - Approval of strategic guidelines
	Municipality of Parma intervention	The Municipal Administration of Parma has included the strategic objectives divided into four areas among the fundamental actions of the 2022-2027 mandate Program Lines and of the 2023-2025 Single Programming Document, including "A safe, vital, welcoming and sustainable city" with the aim of "improving the liveability conditions of our territory: environmental, economic and social sustainability; investing in urban regeneration: redevelopment and maintenance of the existing, avoiding further soil consumption". This resolution is part of these strategic objectives.
Proposal no. 2023-PD-1868 of 15/06/2023	Description	Favourable opinion to the signing of a collaboration agreement with IRETI spa, as part of the Parma Climate Neutral 2030 project, aimed at adapting and technologically upgrading the Medium/Low Voltage electricity distribution network of the Municipality of Parma.
	Municipality of Parma intervention	The Agreement in question with IRETI may: <ul style="list-style-type: none"> - contribute to improving the services rendered to the community; - lead to the establishment of a technical discussion and permanent coordination table; - define specific simplified procedures for the approval of building permits for the construction of new secondary cabinets; - foster the implementation of a forecast study on the need to adapt the electrical network and systems, identifying the areas of interest; - contribute to defining architectural typologies of electrical cabinets; - accelerate the creation of fast charging points for electric vehicles; - promote information meetings on procedures and timing; - provide tutoring systems for the support of technicians and users on the practices of connection to the network of production plants, according to the regulation envisaged by ARERA, or by the Integrated text of active connections (TICA); - support the creation of Renewable Energy Communities, providing aggregate consumption data also relating to the definition of the border areas between the areas pertaining to the primary cabinets, according to the indications of attachment A of ARERA Resolution 727/2022/R/eel , or by the Integrated Text for Widespread Self-Consumption (TIAD); - ensure rapid connection times of photovoltaic systems to the electricity grid.
RESOLUTION N. GC-2021-165 OF	Description	Project - COOLTORISE - Rising summer energy poverty awareness to reduce cooling needs - proposal number 101032823 — Acknowledgment of the project and the funding awarded to the Municipality of Parma.



<p>THE MUNICIPAL COUNCIL ON 26/05/2021</p>	<p>Municipality of Parma intervention</p>	<p>The COOLTORISE European project, of which the Municipality of Parma is a partner, aims to reduce the incidence of summer energy poverty among European families by improving their internal thermal habitability conditions and reducing their energy needs during the hot season, which will decrease heat exposure and heat-related health risks.</p>
<p>RESOLUTION N. GC-2023-146 OF THE MUNICIPAL COUNCIL ON 26/04/2023</p>	<p>Description</p>	<p>Expression of favourable opinion to the candidacy of the Municipality of Parma to the European tender MISS-2022 CLIMA-CITIES 01-01- Testing and demonstrating transformative solutions on climate resilience, mainstreaming nature-based solutions in the systemic transformation (Horizon Europe Program) through participation in the proposal of project called URBREATH.</p>
	<p>Municipality of Parma intervention</p>	<p>The Municipality confirms its inclination and interest in participating in European funding tenders. The project has been awarded of a grant and will start in 2024.</p>
<p>RESOLUTION N. GC-2022-426 OF THE MUNICIPAL COUNCIL ON 16/11/2022</p>	<p>Description</p>	<p>Favourable opinion to the application of the Municipality of Parma to the LIFE-2022 Program, to the LIFE-2022-CET-LOCAL call through participation in the project proposal called PLAN4CET.</p>
	<p>Municipality of Parma intervention</p>	<p>The Municipality expresses a favourable opinion to its participation in the call for tenders of the LIFE-CET022 Program, with the proposal called "PLAN4CET. The project has been awarded of a grant and started in 2023.</p>
<p>RESOLUTION N. GC-2022-402 OF THE MUNICIPAL COUNCIL ON 26/10/2022</p>	<p>Description</p>	<p>European LetsGov project, in which the 9 Italian Mission cities, AESS, Energy Center and UniBo participate. Specific toolkits will be drawn up and actions developed to support the 9 cities in future data collection, the continuous involvement of the Mission actors and the definition of new financial instruments to achieve climate neutrality by 2030.</p>
	<p>Municipality of Parma intervention</p>	<p>In addition to participating in all the activities and making the innovative actions set up by the Municipality itself during the mission available to the other cities, the Municipality of Parma coordinates a working package.</p>



3.3 Module A-3 Systemic barriers and opportunities for climate neutrality in 2030

The involvement of external stakeholders by the Municipality, including investee companies, consistently follows a co-planning process mainly in the areas of Energy, Mobility, Waste and Circular Economy, Buildings and Transversal Projects. Therefore, these actors should not be seen as individual entities involved but as part of a territorial ecosystem of subjects active in the plan to reduce climate-altering emissions. The same actors, during the co-planning phase, have also given a very significant contribution to the identification of the barriers and opportunities encountered both in some individual actions and in the sectors mentioned above.

The table below shows the reference system to which each individual stakeholder belongs, the reference network and the respective sphere of influence and interest.

Since the internal stakeholders all belong to the same "system", i.e. to the technical and/or administrative structure within the Municipality of Parma, the "system description" column has been eliminated in this case.

Similarly, considering the individual internal sectors as an integral part of a single actor, the Municipality of Parma, the influence is described through those tools that the Municipality of Parma has the ability to set up to positively affect the achievement of the zero target: definition and/or updating of Urban Plans (e.g. SUMP, PUG2050, etc.), guidelines and specific actions.

A-3.1a: Mapping of internal systems and stakeholders	
Stakeholders involved	Interest
Mobility and transports sector	Sustainable mobility, traffic calming, micro-mobility systems and other management activities in the field of traffic, road circulation, permits and viability. SUMP and SULP.
Ecological transition sector	Promotion of environmental sustainability policies, environmental impact assessments, monitoring of air pollution and air and water quality, projects and interventions for energy efficiency, renewable energies, energy saving. The municipality's energy manager also belongs to this sector.
Housing policy sector	Design and construction of new social housing accommodations, allocation of housing, interventions for housing problems, maintenance of public real estate assets
Maintenance and facility management	Development, control, management, enhancement and rationalisation of state property and public real estate; management and sewage infrastructure and water recovery, public lighting management and green management, parks and street furniture
Spatial planning sector	Urban planning, interventions for the protection and enhancement of the territory, restructuring, conservation and transformation of building works, management of green spaces and the urban environment
Digital transition sector	Development and coordination of IT and telematic systems; management of technological and administrative aspects related to data



	transmission; digitisation of processes and management of online services; security of internal IT structures
Public works sector	Management of planning, construction, quality control and testing procedures for new works, maintenance of theatre buildings; supervision of works and constructions to reduce seismic risk
Food policy and Unesco Creative City	Management of collaboration relations and project development with other Italian and international UNESCO Creative Cities. Development of a city Food Policy through the involvement of the various stakeholders. Collaboration with the various Departments of the Organisation for the planning and realisation at the Open Laboratory of various initiatives and cultural activities.

Below is an exhaustive mapping of all the stakeholders involved with each one's specific sphere of action, the reference network, the influence exercised in their specific sector and interests.

A-3.1b: Mapping of external systems and stakeholders				
System description	Stakeholders involved	Network	Influence	Interest
Privates	Chiesi Farmaceutici	Pharmaceutical industry, R&D, University.	Quantitative specific actions to reduce emissions.	Industry, scientific research
Privates	Green City Light	IREN, Ireti, Municipality of Parma Planning sector	Redevelopment of public municipal lighting	Public lighting, green economy, energy and digital transition
Privates	IREN	Ireti, Planning sector, ecological transition sector	Consolidation of the local electricity grid	Energy and electricity distribution, gas; management of water distribution services; garbage collection
Privates	Esselunga	Sector competitors, player in local logistics	Building modernisation, energy independence, distribution network efficiency	Mass retailing
Associated company	TEP	Mobility sector, SMPT	Fleet modernisation, reappealing of	TPL



			local public transport	
Research centres	IMEM CNR	Universities, other research centres	Contribution for feasibility studies on the use of innovative technological materials	Science of materials, innovative materials
Associations	Kilometro verde	Environmental associations, Ecological Transition sector	Redevelopment of urban areas	Management of public green areas, planting
Privates	Coop Alleanza 3.0	Sector competitors, player in local logistics	Building redevelopment, energy autonomy	Mass retailing
Associated companies	Fiere di Parma S.p.A.	Exhibitors, other event organisation companies/bodies, municipality of Parma	Specific actions to reduce emissions. Low environmental impact events	
Trade association	Confagricoltura		Territorial protection actions, dissemination of good practices for reducing emissions, investments in the efficiency of buildings, machinery and processes	Protection of agricultural enterprises and the territory; enhancement of agricultural products
Associated company	SMTSP SPA	Mobility sector, TEP	Fleet modernisation, reappealing of local public transport	TPL and private mobility
Privates	Davines	Industry competitor	Efficiency improvement of buildings, modernisation of the corporate fleet, revision of	Cosmetic products, personal services



			industrial process efficiency	
Privates	Barilla	Industry competitor	Efficiency improvement of buildings, modernisation of the corporate fleet, revision of industrial process efficiency	Agri-food industry
Privates	Ireti	Ireti, Planning sector, ecological transition sector		Distribution of energy, electricity, gas, water
Privates	Credit Agricole	Public and private investments	Environmental assessment of investments, environmental training and education, home-work travel plan for employees	Bank sector
Public bodies	Hospital	Other companies/institutions operating in the hospital sector	Energy autonomy, energy-intensive buildings efficiency	Medical/health and hospital sector
Public bodies	Local health authority	Other companies/institutions operating in the hospital sector	Energy autonomy, energy-intensive buildings efficiency	Medical/health and hospital sector
Public bodies	University of Parma	Education, research		
Research in SAPR (remote piloting systems)	Aerodron	Ecological transition sector	Feasibility studies for implementation of alternative energy resources	Land mapping, risk management utilities
Public bodies	ARPAE	Ecological transition sector	Environment and energy prevention	Energy and environmental sector studies, meteorological monitoring



Public bodies	ART-ER	Municipality of Parma	Management of investments in environmental and social innovation; environmental education	Field studies
Public bodies	Parks of the Duchy management body	Planning sector, ecological transition sector	Park management and biodiversity, environmental education	Public green protection
Association	Parma, io ci sto!	Municipality of Parma	Enhancement of the territory, awareness and environmental education	Attracting skills and talents in the agri-food, culture, training and innovation, environmental sustainability sectors
Public bodies	Province of Parma	Municipality of Parma	Protection of public interests and maintenance of institutional relations on matters of public importance	
Public bodies	Emilia-Romagna Region	Municipality of Parma	Protection of public interests and maintenance of institutional relations on matters of public importance	
Associated company	Parma Infrastrutture S.p.A.	Ecological transition sector, mobility	Maintenance and enhancement of the water distribution network for civil use	Public systems and services for the collection, adduction and distribution of water
Associated company	ACER-Azienda Casa Emilia Romagna di Parma	Housing policy sector	Redevelopment of municipal real estate assets	ERP and EPS
Associated company	ASP Parma	Housing policy sector	Redevelopment of municipal real estate assets	ERP and EPS



Associated company	ATES	Ecological transition sector	Consulting and management of energy and forms of shared self-consumption	Local energy policies for local institutions and businesses
Associated company	Infomobility S.p.A.	Mobility sector, SMPT, TEP	Synergy of the city's alternative mobility network	Sharing mobility
Associated company	It.City S.p.A.	Digital transition sector	Enhancement of digital services to support citizens	ICT Services
Private	BT Enia Telecomunicazioni Spa	Digital transition sector, It City Spa	Enhancement of digital services to support citizens	Communication and IT services for the public administration
Associations	Committee for the regeneration of the Northern Production Area	Municipality of Parma	Enhancement and redevelopment of the northern area of the city; training and involvement of citizens and the industrial ecosystem	Promote strategic scenarios shared by economic realities with a view to sustainable development for the area
Associations	WWF	Municipality of Parma	Enhancement of the natural city ecosystem; involvement and continuous learning	
Associations	Legambiente Parma	Municipality of Parma	Enhancement of the natural city ecosystem; involvement and continuous learning	
Associations	ADA onlus	Municipality of Parma	Enhancement of the natural city ecosystem; involvement and continuous learning; education and cultural growth,	



			conferences/debates	
Associations	LIPU	Municipality of Parma	Training and involvement towards sustainable practices	Conservation of nature, protection of biodiversity, promotion of ecological culture
Associations	FIAB Bicipiemme	Municipality of Parma	Training and engagement towards sustainable mobility practices	Raising awareness of the conscious use of the bicycle in the city
Associations	Coldiretti	Confagricoltura, CIA, Ecological transition sector	Training and awareness raising towards sustainable practices	Biodiversity and organic agriculture, climate change and sustainable agricultural practices
Associations	CIA	Confagricoltura, Coldiretti, ecological transition sector	Training and awareness raising towards sustainable practices	Biodiversity and organic agriculture, climate change and sustainable agricultural practices
Associations	CONFCOOPERATIVE	Municipality of Parma	Training and awareness raising towards sustainable practices	Representation, assistance, protection and revision of the cooperative movement and social enterprises
Associations	LEGA COOP EMILIA OVEST	Municipality of Parma	Training and awareness raising towards sustainable practices	Representation, assistance, protection and revision of the cooperative movement and social enterprises
Associations	FAI CISL	Municipality of Parma	Training and awareness raising towards sustainable practices	Protection of agricultural workers and related activities
Associations	FLAI CIGL	Municipality of Parma	Training and awareness raising towards	Protection of agricultural workers and related activities



			sustainable practices	
Associations	CEA Environmental Ethics Centre	Municipality of Parma	Training and awareness raising towards sustainable practices	Affirmation of the SDG sustainable development objectives at the territorial level
Associations	ANCI ER	Municipality of Parma	Training and awareness raising towards sustainable practices	
Associations	Aipo	Confagricoltura, Coldiretti, ecological transition sector	Training and awareness raising towards sustainable practices	Water protection and management
Associations	Unione Parmense degli Industriali	Industrial sector	Training and engagement towards sustainable practises	Industry, energy efficiency, renewable energy, mobility and transport, sustainability
Private	MAPS GROUP	Industrial sector, public institutions	Digitalization of services and training	Energy efficiency, sustainable practises
Private	Salvatore Robuschi	Player in the industrial plant engineering field	Building efficiency, energy autonomy	Research and development on range products
Private	Proges	Sector associations and cooperatives	Training	Support, education and inclusion
Private	SIDEL	Player in the industrial plant engineering	Building efficiency, energy autonomy	Research and development on range products
Private	NUMBER 1 Logistics Group Spa	Logistics sector	Transport and logistics efficiency	Fleet modernisation
Private	LA GIOVANE S.C.P.A.	Logistics sector	Transport and logistics efficiency	Fleet modernisation



From now on, the name of the stakeholders will be anonymised with the wording "Stakeholder n°": the reference number does not identify a specific stakeholder. This choice is dictated by the need to preserve the actors involved from the dissemination of relevant sensitive information.

A-3.2: Description of systemic barriers

The analysis of the systemic barriers encountered has been divided according to the sectors expressed by NZC.

Efficiency improvement of municipally owned buildings

The real estate assets of the Municipality of Parma are restricted by the Superintendency to Cultural Heritage which carries out inspection and surveillance activities according to its competence, aimed at verification of the state of conservation and decorum of cultural heritage and the protection of the historic environment. The efficiency of buildings often involves massive interventions that are considered illegitimate by the institution itself. These interventions do not only concern historic buildings but also the modern ones: in this case the main barrier is represented by the cost of the intervention, often higher than the available budget or the construction of a new entire building. The inflation phenomena that has hit the Eurozone following the Covid pandemic has brought the cost of materials of the construction sector as high as many projects already in progress have been cancelled or changed in their effectiveness planning.

Energy production

From an energy point of view, our country has faced important challenges, especially in the last year, that have directly affected local administrations. Energy is become such a strategic variable that the Municipality of Parma itself has been involved for several years in the realization of projects which have as their aim the partial energy independence of the entities involved, looking for sustainable solutions linked to photovoltaic panels and renewable energy generation plants. The geopolitical conjuncture generated by the war in Ukraine erupted in February 2022, led to a substantial increase in prices not only for raw materials relating to photovoltaic and agri-voltaic systems: many projects have seen their own expenditure budget increased to such an extent that they have been overturned or completely abandoned, despite the presence of substantial funding at European level aimed directly at this type of project and known as the acronym of PNRR. As a further limitation in the development of these projects, we should mention the legislative gaps on the subject that is still on its way of being defined: for example, the topic related to the Renewable Energy Communities (CER in Italian) for which the ARERA resolution is still awaited after the most recent implementation in December 2022 of the Integrated Text on Widespread Self-Consumption (TIAD) which implements the provisions of legislative decrees 199/21 and 210/21 on renewable energy community. Furthermore, the local and national bureaucracy relating to the start of the installation of the systems, discourage good practices towards the ecological transition individual and collective. This issue is combined with the problem relating to the development of the electricity grid: for several years the operators in the sector have not concentrated actions and investments on upgrading the electricity grid which today would require important interventions and investment to support the massive electrification need of the consume.

Mobility and transport

Within the transport sector, the most substantial issue seems to be linked to the habits of the users of the LPT (local public transport), i.e. the citizens. The lack of awareness about the transport customs by of citizens remains an issue that public entities, assisted by companies in the sector, should take into consideration if they want to achieve broad-based impact from their operations. The goal is starting from the younger generation followed by an intensive work of cross-generation involvement. This process also has to address crowding, safety and regularity issues which represent the first signs of intolerance



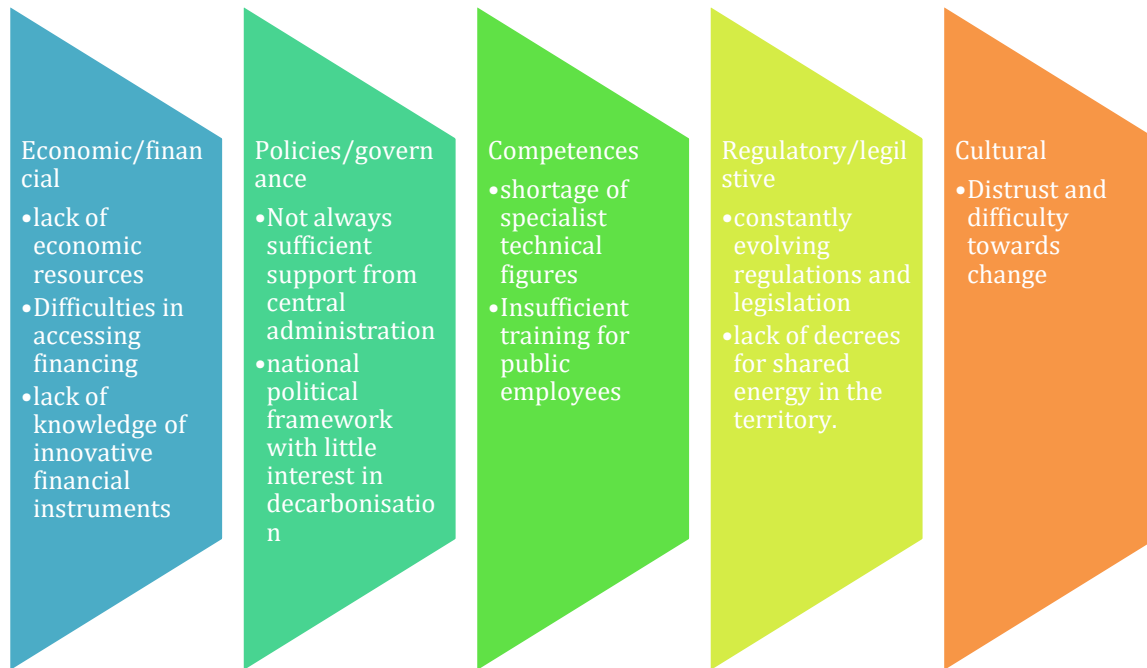
from the citizens side who, for these reasons, do not chose public transport. The alternatives to public transport (such as, for example, shared cars, bikes and scooter) are not exempt from problems such as, for example, availability during the hours of tip, the integration in the use of IT platforms, the road safety. Between incentives directly aimed to citizens, the one for the purchase of pedal assisted electric bikes has had some success despite, according to those who have used it, the price of the product which is excessively high despite the presence of the incentive. Therefore, the price is an important barrier for the spreading of this way of transport among citizens as an alternative choice to the city traffic. Lastly, it should be underlined the unwillingness of the transport companies on the renewal of their fleet of vehicles, given the high renewal rate that these vehicles need, above all those with electric traction with battery disposal: the replacement that is closely related with technological innovation, particularly productive in recent years, and which often risks being higher than the- normal maintenance of less technologically advanced vehicles.

Green infrastructure

Within the projects of the Urban Greening sector, the main barrier for the development of new spaces green is the large presence of trees and woods within the Municipality with a high average age that involve an onerous maintenance plan both economically and in terms of working hours.

Circular Economy

In the context of circular economy projects, the biggest issue remains high technology needs in the processes for the saving materials. A problem that also persists in the spreading of these innovative products that do not prevail in the market of consumers because the individual citizen is not always willing to assume its high price. Furthermore, the trend towards recovery practices is gaining ground among citizens from the bottom: these are practices at the initial phase, which involve the younger layers of the population, more sensitive to ecological issues, and more familiar with the use of digital platforms which these realities are often based on. In addition, barriers across sectors have been identified. These barriers are represented in the graph together with the barriers identified by external stakeholders, as a result of the workshop organized on 28 April 2023.



A-3.3: Description of the participatory model for the climate neutrality of the city

The first milestone of the roadmap of the Municipality of Parma towards climate neutrality began with the city's candidacy to become European Green Capital 2022, in June 2019. Such an acknowledgement brings many benefits, including increased attention to environmental projects, increased international media coverage of the city, a boost to local pride and increased foreign investment. The winners and finalist cities also gain access to the unique European Green Capital Network, a network of 28 cities that share environmental knowledge and best practices and discuss the challenges they face and how to overcome them.

In 2017, the Municipality of Parma also launched the Parma Futuro Smart initiative, created with the aim of triggering a virtuous process with the main local stakeholders (companies, associations, universities and research centres, innovative start-ups) to co-design, co-develop and co-manage the Parma of the future: systematising the various skills and initiatives, developing a vision of the city, a roadmap and a plan of initiatives and investments to achieve the objectives of sustainability, innovation and inclusion identified in the participation process are the main drivers of this initiative which place Parma among the most modern European cities in terms of social commitment and social innovation.

In the wake of these shared processes to define a vision and strategy for a green, sustainable, intelligent and accessible city, the Municipality of Parma, together with 9 other public bodies, research bodies and associations, signed a protocol on 15 December 2020 of understanding for the birth of a territorial alliance for carbon neutrality in the entire province of Parma.

The participatory and multi-sectoral model for achieving climate neutrality was therefore already widely shared with all public and private stakeholders in the area when the city was selected among the 112 European cities that will have to achieve climate neutrality by 2030. The cross-sectoral



participation of all stakeholders within the process of implementing the objectives of the Mission is the fundamental element played by the main responsible for implementing the plan, i.e. the municipality itself. The phase of involvement of the city ecosystem started with the actors who represent the industrial and economic fabric of the city but no actor has priority over another: coordination among all the elements involved represents the most correct criterion for proceeding efficiently and achieve the set goals.

The Municipality first promoted a call addressed to public bodies, associations, research centres, investee companies, private individuals, trade associations: the first held on 15 December 2022 saw the participation of 62 companies operating in the municipality of Parma. On that occasion, the municipal administration presented the "Climate Neutral City and Smart Cities" mission and collected the first feedback from the individual realities. The subsequent meeting on 28 April 2023 consolidated the key stakeholders in the project to achieve climate neutrality, as shown in table A-3.1. This was followed by various events organised by the Municipality and by the Departments involved with the aim of raising awareness about the issues and projects covered by the Plan. Among these "Fa la casa giusta", workshop organised by the Municipality of Parma in the field of social housing with the aim of presenting the state of the art on the subject and the projects in progress, held in May 2023.

The involvement of economic actors goes hand in hand with the direct involvement of citizens through thematic roundtables in the individual districts of the city: the goal is not only to make citizens aware of the administration's efforts but it must also be an opportunity to gather operational tips. The Neighbourhood Meetings organized with citizens are giving 10 councillors the opportunity to meet citizens residing in 10 different neighbourhoods. There are also numerous initiatives for the direct involvement of citizens among private stakeholders: Credit Agricole, for example, has organised a corporate volunteering group developed in collaboration with various local entities of the non-profit sector, which stimulates bank employees to carry out activities for the purpose of environmental and social protection within the territories; the Kilometro Verde Consortium involves schools of all levels with the We Tree project deals with environmental education and training. Confagricoltura too implemented a project for the dissemination of agricultural policies aimed at farms and the agrifood sector.

The Association Parma io ci sto! involved its 120 associates in a series of workshops aimed to define a concrete action plan to face the challenges of the coming years, including sustainability: the meetings took place in February and April 2023 with a final return to the city in the autumn of the same year.



4 Part B – The path to climate neutrality

4.1 Module B-1 Climate neutrality scenarios and impact scenarios

The following chapter presents, on the basis of the Theory of Change (NZC), the actions put in place by the Municipality of Parma to achieve the climate neutrality objectives. The theory serves as a source of inspiration and a tool for understanding all kinds of technological and non-technological pathways within the equity portfolio.

The actions presented in the following table **have been classified on the basis of the reference field of action** which corresponds to the sector they belong to, on the basis of which the individual actions in table B 2.2 and B2.1 are classified. The following list is not meant to be exhaustive of all the actions and initiatives collected: in fact, it represents a collection of macro-actions and guidelines that characterise the entire work of the stakeholders involved in achieving climate neutrality.

The classification on the basis of systemic levers highlights the impact paths that each measure can generate: this different perspective allows to evaluate the efforts sustained by all the actors involved towards a complete and integrated evaluation.

B-1.1: Impact Pathways					
Action field	Systemic levers	Changes coming shortly	Long term changes	Direct impacts	Indirect impacts
Buildings	Technology	CER installation	Development of new sources of supply from renewable energy	Reduction of emissions	Dissemination of circular economy practices
		Photovoltaic mapping	NZEB Building	Reduction of emissions	Well-being of the individual.
		Energy efficiency in public buildings			
		Purchase of green energy	Digital twin		
		TLR extension			
	Governance and Policy	Establishment of internal control room	SECAP - CCC alignment	Regulatory innovation in the energy and climate sector	Synergistic governance actions with research centres and universities in line with the NZC



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		Identification of climate strategy objectives of the Municipality of Parma			
		Identification of strategic plans to be aligned			
		Participatory paths of strategic plans focused on NZC objectives			
		Setting up of thematic tables			
		New guidelines for the electrification of consumption			
	Funding	Identification of feasible PPP types	Assignment of the first PPP tenders for energy efficiency and RES	Greater possibility to implement measures for carbon neutrality	Strong acceleration towards innovative mechanisms
		Identification of buildings and/or services to apply new mechanisms	PPPs as "standard" and no longer innovative contracts	Active and proactive involvement of stakeholders	
		Identification of actions that can be implemented with PPP	Energy efficiency actions with innovative finance		
		Identification of stakeholders to be involved	Strengthening of public-private relationships		
		Identification of investors/banks interested in climate action in the area	Spontaneous involvement of new investors		



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		Identification of internal procedures for tender procedures			
		Internal training on the New Code and PPP			
		Analysis of possible types of funds/loans			
		Opening of a "green fund" with proceeds from PPP savings			
		First agreements with funds and investors.			
	Social innovation	Involvement of strategic stakeholders	Citizenship engagement	Social housing	
	Capacity building	Setting up of thematic tables	Sharing of innovative solutions		
Transports	Technology	Purchase of green energy	LEZ	Reduction of emissions	Proactive technological development of all stakeholders
		Installation of charging stations	Private and public mobility management		
		Renewal of public and private car fleet			
		LPT Re-appealing			
		Sharing electric mobility			
	Governance and Policy	Establishment of internal control room	PGTU in line with the Mission	Regulatory innovation in the energy and climate sector	Synergistic governance actions with research centres and universities in line with the NZC



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		Identification of climate strategy objectives of the Municipality of Parma	SULP in line with the Mission		
		Identification of strategic plans to be aligned	SECAP - CCC alignment		
		Participatory paths of strategic plans focused on NZC objectives			
		Setting up of thematic tables			
		SUMP update in line with the Mission			
		New guidelines for the electrification of consumption			
	Funding	Identification of feasible PPP types	PPPs as "standard" and no longer innovative contracts	Greater possibility to implement measures for carbon neutrality	Strong acceleration towards innovative mechanisms
		Identification of stakeholders to be involved	Energy efficiency actions with innovative finance	Active and proactive involvement of stakeholders	
		Identification of actions that can be implemented with PPP	Strengthening of public-private relationships		
		Identification of investors/banks interested in climate action in the area	Spontaneous involvement of new investors		
		Identification of internal			



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		procedures for tender procedures			
		Internal training on the New Code and PPP (Public/Private Partnership)			
		Analysis of possible types of funds/loans			
		Opening of a "green fund" with proceeds from PPP savings			
		First agreements with funds and investors.			
	Social innovation	Involvement of strategic stakeholders	Citizenship engagement	Cultural change in the use of public transport	
	Capacity building	Greater interest in sustainability issues	Increased performance levels		
Waste and sewage	Technology	NA	NA	NA	NA
	Governance and policies	Establishment of internal control room	Updating of waste sector regulations and circular economy	Regulatory innovation in the energy and climate sector	Synergistic governance actions with research centres and universities in line with the NZC
		New guidelines for the electrification of consumption	SECAP - CCC alignment		
		Identification of climate strategy objectives of the Municipality of Parma			
		Identification of strategic			



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2030 Climate Neutrality Action Plan



		plans to be aligned			
		Participatory paths of strategic plans focused on NZC objectives			
		New guidelines for the waste sector and circular economy			
		Setting up of thematic tables			
	Funding	Identification of feasible PPP types	PPPs as "standard" and no longer innovative contracts	Greater possibility to implement measures for carbon neutrality	Strong acceleration towards innovative mechanisms
		Identification of actions that can be implemented with PPP	Strengthening of public-private relationships	Active and proactive involvement of stakeholders	
		Identification of stakeholders to be involved	Spontaneous involvement of new investors		
		Identification of investors/banks interested in climate action in the area			
		Identification of internal procedures for tender procedures			
		Internal training on the New Code and PPP			
		Analysis of possible types of funds/loans			
		Opening of a "green fund" with proceeds			



Comune di Parma

2030 Climate Neutrality Action Plan



		from PPP savings			
		First agreements with funds and investors.			
	Social innovation	Involvement of strategic stakeholders	Citizenship engagement	Circular Economy projects	Bottom-up participation
	Capacity building	Continuous learning	Exchange of experiences for the construction of more efficient solutions		
IPPU	Technology	Production process efficiency	Reduction of emissions	Proactive technological development of all stakeholders	
	Governance and Policy	Establishment of internal control room	SECAP - CCC alignment	Regulatory innovation in the energy and climate sector	Synergistic governance actions with research centres and universities in line with the NZC
		Identification of strategic plans to be aligned			
		Participatory paths of strategic plans focused on NZC objectives			
		Setting up of thematic tables			
		New guidelines for the electrification of consumption			
		Funding	Identification of actions that can be implemented with PPP	PPPs as "standard" and no longer innovative contracts	Active and proactive involvement of stakeholders



Comune di Parma

2030 Climate Neutrality Action Plan



			Energy efficiency actions with innovative finance		
		Identification of stakeholders to be involved	Strengthening of public-private relationships		
		Identification of investors/banks interested in climate action in the area	Spontaneous involvement of new investors		
	Social innovation	Involvement of strategic stakeholders	Citizenship engagement	Raise awareness in purchasing	Involvement of the end user in the definition of production models and products
	Capacity building	Application of advanced technologies	Greater public awareness		
AFOLU	Technology	NA	NA	NA	NA
	Governance and Policy	Establishment of internal control room	SECAP - CCC alignment	Regulatory innovation in the energy and climate sector	Synergistic governance actions with research centres and universities in line with the NZC
		Identification of climate strategy objectives of the Municipality of Parma			
		Identification of strategic plans to be aligned			
		Setting up of thematic tables			
		PUG2050 in line with the Mission			
		Participatory paths of strategic plans			



Comune di Parma

2030 Climate Neutrality Action Plan



		focused on NZC objectives			
Funding	Identification of feasible PPP types	PPPs as "standard" and no longer innovative contracts	Greater possibility to implement measures for carbon neutrality	Strong acceleration towards innovative mechanisms	
	Identification of actions that can be implemented with PPP	Energy efficiency actions with innovative finance	Active and proactive involvement of stakeholders		
	Identification of investors/banks interested in climate action in the area	Strengthening of public-private relationships			
	Identification of internal procedures for tender procedures	Spontaneous involvement of new investors			
	Internal training on the New Code and PPP				
	Analysis of possible types of funds/loans				
	Opening of a "green fund" with proceeds from PPP savings				
	First agreements with funds and investors.				
	Social innovation	Involvement of strategic stakeholders	Citizenship engagement		
	Capacity building	Raising awareness of city users and residents	Evaluation of green areas		



B-1.2: Description of the impact pathways

Below are the flows of the impact pathways as per the NZC Theory of Change guidelines. The systemic levers are the starting point of the analysis and each diagram represents the impact pathway connected to a single lever. Also indicated in the single diagram:

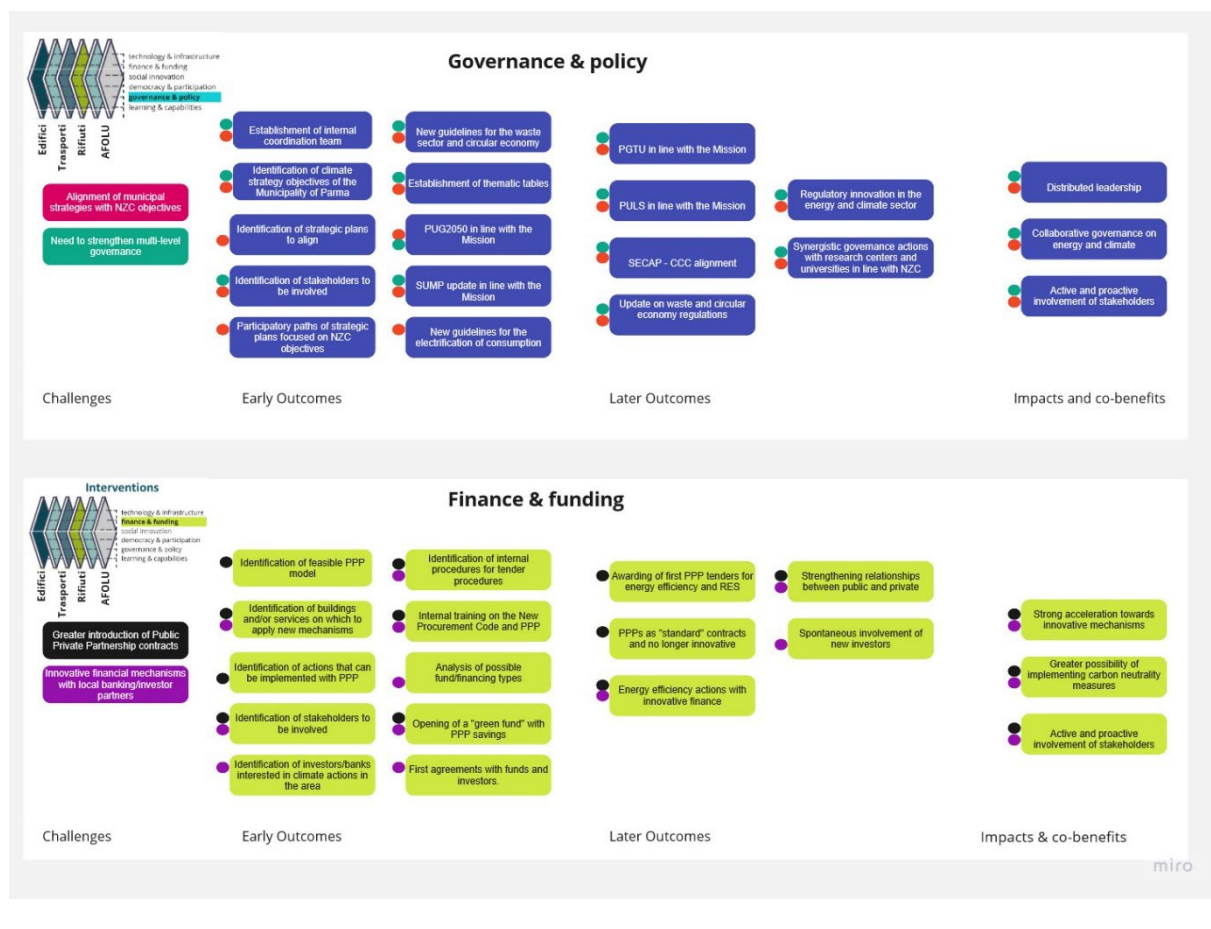
- The sectors involved for the specific systemic leverage (e.g. buildings, transport, waste, etc).
- Challenges to achieve neutrality, linked to portfolio actions
- Long and short term changes
- Impacts and co-benefits.

Alongside the short- and long-term changes, impacts and co-benefits, there are coloured circles that represent the correspondence between the challenge and the change/impact/co-benefit.

For greater readability, the flow charts are also present in the attachment in A3 format.

In the following chapter, "Design of the climate neutrality portfolio", the challenges are resumed and associated with each individual action in order to give continuity to the application of the Theory of Change in the City's path towards neutrality. In this way it is possible to analyse the actions of the portfolio linked to the identified challenges and to the systemic levers in an integrated way.

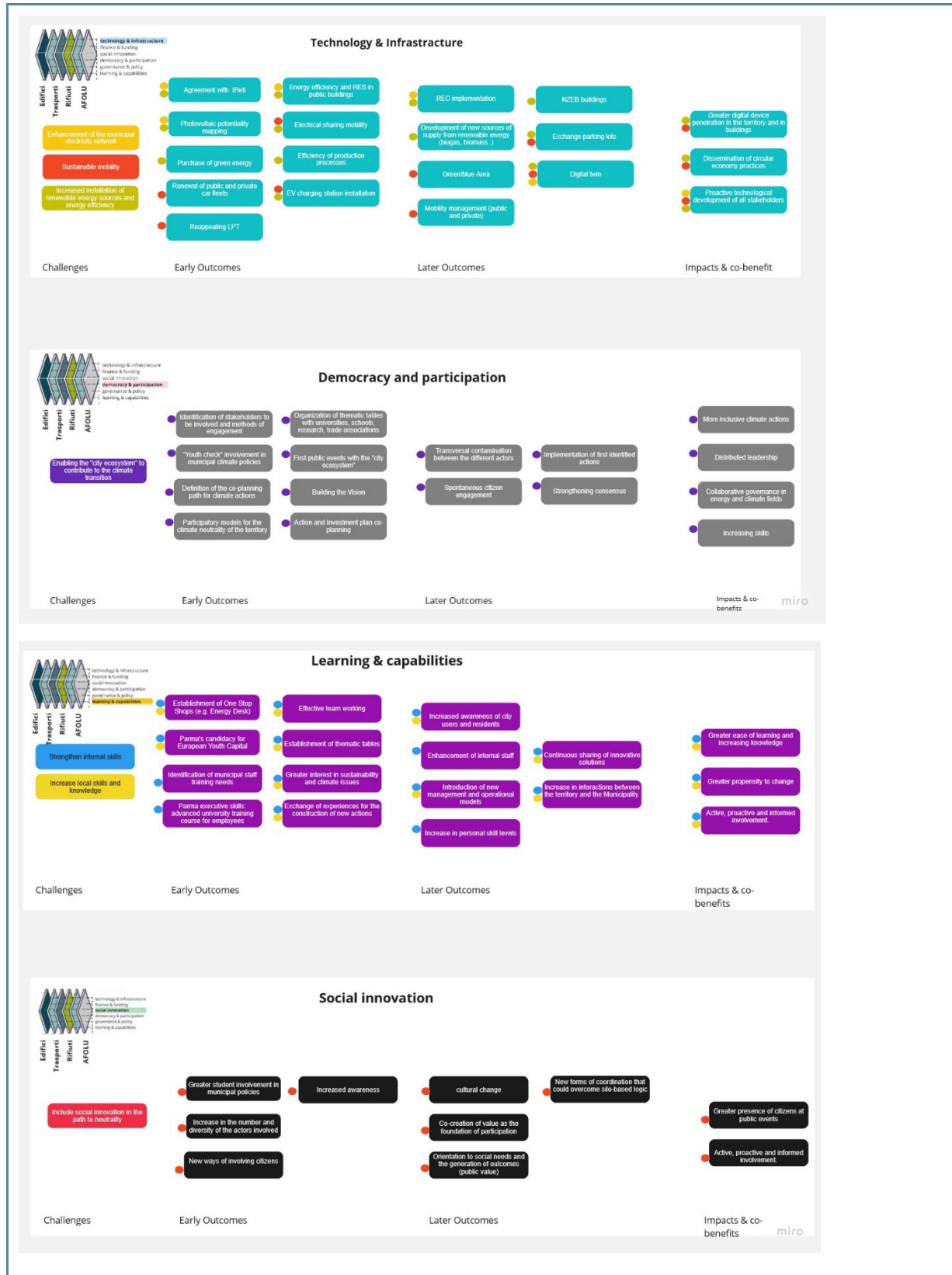
Figure 9 levers and impacts





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4.2 Module B-2 Design of the climate neutrality portfolio

In the context of the Municipality of Parma, the working group was able to collect from the stakeholders involved a series of actions to reduce and mitigate CO_{2eq} emissions. The individual actions divided by type of stakeholder are presented below: the presentation of the actions is divided by internal and external stakeholders, as already presented in the previous paragraphs.

The portfolio of actions was created following a process with the stakeholders made up of public meetings, specific workshops and one-to-one insights. This has led to reasoning with the stakeholders in a synergistic way, also identifying together barriers and opportunities for the various sectors without limiting to the mere identification of the reduction of emissions and the investment of the single action.

Overall, 130 actions were collected from all the stakeholders involved, both internal and external. These actions are divided into two different types: present and future quantifiable actions and behavioural actions. Actions classified as guidelines should also be mentioned: these include actions defined by strategic plans, research and feasibility studies aimed at an action program, not yet defined and concrete but long-range and wide-ranging.

The collection of actions starts from the stimulus given by the Municipality to concentrate on the most "critical" sectors identified by the SECAP monitoring without excluding the other sectors. The most exposed sector is that of Buildings which, with the multiplicity of projects put in place by the Administration, covers a large percentage of the total actions, showing a vocation oriented towards urban regeneration based on the redevelopment of the built environment, postponed in previous years in the name the preservation of Parma's historical and artistic context. Even considering buildings with industrial and commercial purposes, we can recognise a decisive number of interventions aimed at the self-sufficiency thanks to the local production of electricity through renewable sources, thus internalising a resource, energy, which is increasingly strategic for the market.

Thanks to the presence of two investee companies of the Municipality of Parma very active in the area, TEP and SMPT Spa, the Transport sector sees important contributions aimed at the re-modernisation of the LPT fleet and citizen involvement projects for its re-appealing. Actions in this area are not unique to the stakeholders most directly involved: the renewal of the car fleet is one of the objectives of the Municipality of Parma (through the direct management of car leasing by the Maintenance sector) and of various private entities including Chiesi, as well as the presence of a consolidated network for over a decade of company Mobility Managers coordinated by the Area Mobility Manager, with the aim of coordinating municipal public actions and those of other external stakeholders, both private, corporate and public.

Furthermore, a not extremely high contribution emerges for the interventions relating to the IPPU (Industrial Processes and Product Use) area, confirming the modest industrial presence within the municipal area of Parma.

As part of the actions on AFOLU (Agriculture, Forestry and Other Land Use) it should be emphasised that the Municipality of Parma has 1,730 hectares of public green, corresponding to 88.5 square meters of green per inhabitant, managing a tree stock of over 42,000 trees: these numbers are well above the national average which, for most cities, remains below 20 trees for every 100 residents⁵. The presence of such a large pre-existing tree and woodland allows a residual development of the projects from scratch, given the huge amount of resources already allocated for its maintenance. Therefore, with the exception of the forestation projects which will be implemented thanks to the collaboration between the Municipality and Kilometroverde, the projects submitted are mostly addressed to guide the future developments.

⁵ Source from the Municipality of Parma - 2022 Green Plan



Finally, the actions relating to the Waste sector, due to their specificity, are mainly presented by the stakeholders who directly act in the field.

If the calculation methodology for reducing the emissions of actions is concerned, the calculation presented below refers to the same methodology used in the SECAP, net of some differences presented in the paragraph "*Differences between the inventory of emissions of 2019 monitoring and CCC baseline*" of Module A. The conversion factors from the so-called "activity data" to the related tCO_{2eq} value derive from the Covenant methodology and are also present in part A of the Action Plan.

It should be emphasised that the value of the investment per single action refers to the indicated intervention time frame which roughly corresponds to the implementation times of the project/initiative itself. Otherwise, the calculation of the CO_{2eq} reduction refers to the time period considered by the entire document in tonnes: the time window reaches up to 2030, therefore the reduction goes from the date of construction/implementation of the intervention up to 2030. The monitoring that will be implemented in the coming years relating to the Climate City Contract will make it possible to constantly observe the progress of all the actions and their respective impacts in terms of emissions.

Below are the tables that summarise the actions collected divided into internal, external and behavioural actions - including governance actions - of both stakeholders.

Where a N.A. (Not Available) field is filled it means that the calculation of CO₂ and/or the value of the investment has not been made available by the competent sector and/or stakeholder: the actions have in any case been considered because they are relevant. The monitoring of these projects up to 2030 guarantees their validity despite the lack of some elements detected during the Action Plan drafting.

It is important to remember that the governance actions of the Municipality of Parma are listed and described in Module A.2, in particular in table A.2.2. In Module C.1 table C-1.1 the interventions of organisational innovation and governance are presented. Both types of actions must be considered as an integral part of the Municipality of Parma's effort towards climate neutrality.

By linking to the Impact Pathways illustrated above, the individual actions of the stakeholders have been related to the systemic levers and challenges in such a way as to also illustrate their contribution to the challenges to be faced on the path towards neutrality. The challenges have been numbered from 1 to 11 and will be indicated in the following tables with their corresponding numbers. It is important to underline that some challenges (i.e. challenge # 1,2,3,4) are tackled with governance and behavioural actions in general. Challenge 5 is mainly tackled with the path started by the City on social innovation (see dedicated chapter) while challenges 10 and 11 are mainly tackled thanks to the training, information and capacity building actions already present in the area.



Figure 10 Challenge and levers

The actions presented here refer to approved actions, i.e. that have a level of concreteness that goes beyond a preliminary analysis or a mere hypothesis of future development.

Actions of the Municipality of Parma and its investee companies							
Action outline			Challenges	Impact			CO2eq reduction
Stakeholder	Action name	Scope of action		Investment value	Intervention times	Approval level	
Mobility and transports sector	Incentives for buying electric bicycle	Transport	1,8	222.000€	2023-2024	Approved	n.a.
Mobility and transports sector	Ultra-fast recharge stations	Transports	1,7,8	Call for tenders	Call for tenders	Call in progress	n.a.
Ecological transition sector	Energy efficiency Municipal Building "DUC"	Buildings	1,3,9	1,500,000 €	2023-2024	Approved	524,42 ton CO _{2eq}
Housing policy sector	National Funds for the Quality of living PINQUA	Buildings	1,3,9	32,000,00 0€	2022-2026	Approved	1.040 ton CO _{2eq}



	Complementary funds for building efficiency PNC funds	Buildings	1,3,9	4,000,000 €	2022-2026	Approved	329,6 ton CO _{2eq}
Public works sector	PNRR interventions funds	Buildings	1,3,9	48,000,000 €	2022-2026	Approved	147 ton CO _{2eq}
	Regional ERDF-ATUSS interventions for the public building efficiency	Buildings	1,3,9	15,700,000 €	2022-2026	Approved	n.a.
	Other interventions	Buildings	1,3,9	7,000,000 €	2022-2026	Approved	n.a.
	Maintenance sector	Public lighting	Energy infrastructure	1,3,4	N.a.	2017-2025	Approved
	Renewal and reorganisation of the municipal fleet	Transports	1,3,8	640,000 €	2022-2025	Approved	n.a.

*Currently still in the tender phase for assignment of works

The data on the reduction of CO_{2eq} were provided directly by the competent offices within the Municipality of Parma.

Overall, the table shows the contribution of the public sector to the reduction of carbon dioxide equivalent in the time interval from the present drafting of the document up to 2030. The corresponding investment value for each listed action will be detailed in the Investment Plan.

The table below shows the actions for each external stakeholder involved in the emission reduction plan: given the presence of sensitive information on the projects and the consequent reduction of CO_{2eq}, the name of the stakeholders has been anonymised reporting only a non-identifying number. The same logic will also be applied in the Investment Plan. For external stakeholders, all actions, net of the first two actions of stakeholder 15 which are "carried out", have an approval level of "approved". The "approval level" column has therefore been deleted in this table.



B-2.2.b: Actions of external stakeholders

Stakeholders	Action name	Action type	Scope of action	Challenge	Intervention times	CO2 reduction (ton CO _{2eq})
Stakeholder 1	Better Buildings Program: reduction of environmental impact for buildings, product, process	Measurable	Buildings	6, 9	2020-2030	79,092
	Electrification of company fleet and sites	Measurable	Transports	6, 8	2020-2030	3,085
	Pressurized dosing inhalation system	Measurable	IPPU	6, 11	2021-2025	24,408
Stakeholder 2	Energy efficiency actions of Via della Cooperazione Production Centre	Measurable	BUILDINGS/IPPU	7,9	2021-2022	4,222
	Energy efficiency actions of Emilia Est shop	Measurable	Buildings	7,9	2019-2022	761
	Energy efficiency actions of Via Traversetolo shop	Measurable	Buildings	7,9	2019-2022	1,551
	Energy efficiency actions of Parma Ovest shop	Measurable	Buildings	7,9	2018-2022	90
	Energy efficiency actions of Via Verdi Shop	Measurable	Buildings	7,9	2018-2022	N.a.
Stakeholder 3	Development of district heating and heat storage	Measurable	Energy infrastructure	1,3,6	2018-2030	388
	Recovery of materials from waste with paper, cardboard and plastic selection plant	Measurable	Waste	1,6	2022-2030	86,428
	Reduction of water losses	Measurable	Buildings	6,9	2018-2030	846



	Heat production from biogas treatment plant Parma Ovest	Measurable	Waste	1,9	2018-2030	8,520
	Energy requalification of private buildings	Measurable	Buildings	9	2018-2030	14,059
Stakeholder 4	LED relamping plan for shops	Measurable	Buildings	9	2021-2023	393
	Climatic regulation based on crowding of the shops	Measurable	Buildings	9	2021-2023	127
Stakeholder 5	Urban and peri-urban forestation	Measurable	Afolu	1, 2	2023-2025	21,000
Stakeholder 6	Reduction of consumption through energy efficiency	Measurable	Buildings	9	2024-2025	169
	Installation of a home automation system	Measurable	Buildings	9	2024-2025	85
	Construction of a photovoltaic system (up to 1 MWp)	Measurable	Buildings /Energy infrastructure	9	2024-2025	2,115
Stakeholder 7	Renewal of the bus fleet	Measurable	Transports	1.8	2023-2026	875
Stakeholder 8	Cogeneration plant installation	Measurable	Energy infrastructure	6,8	2023-2026	247
Stakeholder 9	Photovoltaic system installation	Measurable	Buildings /Energy infrastructure	9	2023	306



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Stakeholder 10	Reduction of gas and diesel emissions (scope 1)	Measurable	Buildings	9	2018-2030	3,448
	Reduction of indirect emission from electric energy and district heating (scope 2)	Measurable	Buildings	9	2018-2030	337
	Replacing the company fleet, reducing business trips and home-work travel plans	Measurable	Transports	1,6,8	2022-2025	N.a.
Stakeholder 11	LED replacement in factories and plants of the group	Measurable	Buildings	9	2023-2025	1,826
	Installation of high efficiency fans motors on dryers	Measurable	Buildings	9	2023-2024	3,553
	Automation of superheated water distribution pumps	Measurable	Buildings	9	2023-2024	616
	Revamping of the cleaning plant	Measurable	Buildings	9	2022-2023	1,042
	AGRIBOSCO urban forestation project	Measurable	AFOLU	1,6	2021-2022	N.a.
	Electric car charging stations	Measurable	Transports	1,8	2022	N.a.
	Upgrading of central thermo-refrigerator	Measurable	Buildings	9	2022	1,354



	Efficiency interventions on Palazzo 4 and 2 offices	Measurable	Buildings	9	2018-2023	580
	Home-work mobility plan	Measurable	Transversal	1,6,8	2022	6,888
	Canteen 2 boiler replacement	Measurable	Buildings	9	2023-2025	N.a.
	Plant lighting Technical rooms, Office canteen	Measurable	Buildings	9	2022	N.a.
	Replacement of electrostatic filters in Uta Semola plant	Measurable	Buildings	9	2021	1,006
	Installing steam generator	Measurable	Buildings	9	2020	N.a.
	Lighting of building 3-4	Measurable	Buildings	9	2019	403
	Purchase of electric cars	Measurable	Transports	1,6,8	2018-2021	0
	Hybrid cars purchase	Measurable	Transports	1,6,8	2018-2021	1,980
	Connection of the cycle path from via Benedetta to via Burla	Measurable	Transports	1,6,8	2021-2018	N.a.



	Compressor replacement	Measurable	Buildings	9	2023	336
Stakeholder 12	Efficient building management	Measurable	Buildings	9	2019	43,720
	Trees in Campus Project	Measurable	AFOLU	1,6	2021-2030	1020
Stakeholder 13	Thermal insulation of nursery and preschool roofing sunflowers and terramare	Measurable	Buildings	9	2020-2021	209
Stakeholder 14	Installing photovoltaic panels	Measurable	Buildings	9	2023	434
Stakeholder 15	LED lighting	Measurable	Buildings	9	2018-2024	379
	Photovoltaic system in production areas	Measurable	Buildings	9	2022-2023	2.855
	Photovoltaic system for parking areas	Measurable	Buildings	9	2023-2024	1.579
	Heat pump system	Measurable	Buildings	9	2023-2025	5.181
	Tree planting	Measurable	AFOLU	1,6	2022-2023	630

Below are the actions that fall within the feasibility study and/or hypotheses for which data on the reduction of emissions, the investment value or the timing of implementation are not yet fully available. **Nonetheless, these actions are fully part of the process of reducing CO_{2eq} emissions within the broader strategic time horizon of the individual stakeholders involved. Because of their relevance and future implementation, these actions have been included in the Action Plan, as proof of the commitment that the stakeholders make with the Municipality also with future actions.**



B-2.3: Future actions of external stakeholders						
Stakeholders	Action name	Action type	Scope of action	Challenge	Intervention times	CO2 reduction (ton CO₂eq)
Stakeholder 1	Decarbonisation Study on industrial processes and on the headquarter building	Measurable	Buildings	6,11	2024-2030	22,186
	Roofing of parking lots with photovoltaic panels	Measurable	Buildings/Energy infrastructure	9	2024-2030	Under study
Stakeholder 2	Via della Cooperazione Production Centre: EFFICIENCY INTERVENTIONS	Measurable	Buildings	9	2024-2030	846
	EMILIA EST SHOP: Possible efficiency interventions	Measurable	Buildings	9	2024-2030	592
	VIA TRAVERSETOLO SHOP: Possible interventions for energy efficiency	Measurable	Buildings	9	2024-2030	423
	PARMA OVEST SHOP: Possible interventions for energy efficiency	Measurable	Buildings	9	2024-2030	541
	VIA VERDI SHOP: Possible interventions for energy efficiency	Measurable	Buildings	9	2024-2030	34
Stakeholder 3	Actions for energy efficiency and consumption containment	Measurable	Buildings	9	2023-2025	N.A.
Stakeholder 4	Promote the installation of photovoltaic panels	Measurable	Buildings/Energy infrastructure	6,9,11	2023-2030	103



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	with the aim of creating CERs					
	Promote the establishment of biogas and biomethane plants	Measurable	Buildings/Energy infrastructure	9	2023-2030	13,300
	Promote reduced soil tillage and no-till seeding	Measurable	AFOLU	9,10	2025-2030	N.A.
	Encourage the use of spreading techniques with low ammonia emissions	Measurable	AFOLU	9,10	2023-2030	N.A.
	Encourage the coverage of uncovered storage areas for zootechnical manure	Measurable	AFOLU	9,10	2023-2030	N.A.
	Encourage the installation of medium-long cycle poplar plantations (at least 10 years)	Measurable	AFOLU	9,10	2023-2030	N.A.
Stakeholder 5	CER for trolleybuses and vehicle storage	Measurable	Buildings	6,9,11	N.A.	2,961
	FER plant for three PODs	Measurable	Buildings/Energy infrastructure	7,9	N.A.	1,015
	Energy efficiency of service building and office building	Measurable	Buildings	9	N.A.	N.A.
	Bodywork energy efficiency through building coverage	Measurable	Buildings	9	N.A.	N.A.



	Energy efficiency of old workshops	Measurable	Buildings	9	N.A.	N.A.
Stakeholder 6	Photovoltaic system on NZEB building under study	Measurable	Buildings/Energy infrastructure	9	2023-2026	N.A.
Stakeholder 7	NZEB building	Measurable	Buildings	1,9	2023-2026	N.A.
Stakeholder 8	Reduction of external indirect emissions (scope 3)	Measurable	Transversal		2023-2030	N.A.
Stakeholder 9	Neighbourhood CER	Measurable	Buildings	6,9,11	2023	N.a.
Stakeholder 10	CER and related photovoltaic system	Measurable	Buildings	6,9,11	2023	N.a.
Stakeholder 11	Efficiency improvement interventions on municipal buildings	Measurable	Buildings	9	2023	94
Stakeholder 12	Neighbourhood CER	Measurable	Buildings	6,9,11	N.a.	N.a.
Stakeholder 13	Efficiency energy intervention on Data Centre Parma	Measurable	Buildings	1,2,10	N.a.	N.a.
Stakeholder 14	Construction of a photovoltaic system at the Parma site	Measurable	Buildings	9	N.a.	N.a.



	Progressive replacement of lead-acid batteries in forklifts with lithium batteries	Measurable	Buildings	9	N.a.	N.a.
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The path towards climate neutrality, to be achieved by 2030, that the Municipality of Parma has undertaken foresees, as already seen in the previous chapters, the compulsory use of Renewable Energy Sources. Among the most immediately implemented investments, the Municipality has chosen to invest in the Renewable Energy Communities (CER) as an initial response to the problem.

A pilot project within the municipal area is the CER located in the **Lubiana district** which involves the following structures: Comprehensive school Albertelli-Newton as a prosumer, the Tartaruga nursery school as a consumer, the Pavese library as a consumer, the Mappamondo nursery school as a prosumer, the Residenza Anziani G.Sidoli house as a consumer and other social housing buildings as a consumer with the possibility of new openings for the future both to public and private bodies. According to the feasibility study, the plant to be installed at Albertelli school would have a power of 224 kWp, capable of producing approximately 246,400 kWh annually, thus avoiding annual emissions of over 90 tons of CO₂. Among the stakeholders involved in the project as members of the CER there are currently Proges, Azienda Casa Emilia-Romagna and any private individuals belonging to the social housing buildings. The economic framework of the intervention estimates a total of €660,000: the main share is estimated equal to €616,000 for the costs of supplying and installing the system.

Among the measures shared by stakeholders that have not been integrated to avoid double counting of emissions with respect to the SECAP, we mention the following, according to the size of the investment and the pervasive effect that these interventions entail:

- In 2020, an action was launched for the installation of a trigeneration plant with an investment of around €20,000,000. The benefits relating to the environmental impacts on the area are not counted either in this document or in the SECAP update (June 2023) because it is a plant whose calculation is included in the ETS.
- for the period 2021-2025 it was planned to replace 116 vehicles with vehicles powered by low-impact energy sources (methane and electricity) and with more efficient technologies in terms of consumption (Euro 6): this investment and the respective reduction in terms of CO₂ has already been counted within the SECAP.
- the investment for a new district heating plant of around €50,000,000 with an estimated reduction of 160,000 kWh/year was calculated in the SECAP monitoring.
- For the 2020-2025 period, the SECAP included redevelopment interventions on municipal public buildings (mainly schools and sports facilities) for an overall estimated reduction of 13 tonnes of CO₂ per year.



The actions of the enhanced SECAP

For the purpose of the overall annual calculation of emissions reduction, the possible actions of the "Enhanced SECAP" were also considered (i.e. those actions of the SECAP analysed for climate neutrality by 2030 but not considered in the SECAP) which are explained below. The economic effort of each action will be specified in the Investment Plan.

- Efficiency improvement of municipal buildings and public lighting

The strengthening measure to achieve the new Net Zero City objectives involves purchasing electricity only from sources with a guarantee of renewable origin and thereby encouraging the installation of new RES plants at municipal level. The reduction estimate is around 3,000 tonnes of CO₂ per year.

- Efficiency of the non-municipal tertiary sector

The Administration considers the electrification of heating systems for tertiary sector users and the consequent development of building envelopes as a strategic action. These interventions envisage savings of 1,020 tonnes of CO₂ per year within the 2023-2030 time frame.

- Efficiency of the residential sector

This strengthening action reflects the characteristics of the previous one with the exception that the field of action is that of residential buildings. In this case the estimated reduction in enhanced energy saving is equal to 48,000 MWh which includes thermal energy for cooking and diesel for heating. The reduced tons of CO₂ are around 6,000 per year.

- Development of renewable sources

In quantitative terms, a reduction of 221,208 tonnes of CO₂ is expected.

Behavioural and governance measures as a contribution to reducing emissions:

Behavioural actions have a significant impact on consumption, can be applied on a large scale and often do not require an initial economic investment. Thanks to behavioural change, new spaces can be created where the various actors are able to collaborate synergistically for the transition. Behavioural actions are for example training/information and awareness-raising interventions of citizens, strategies of the Municipality, etc. These represent a fundamental element in changing the mentality of citizens and making them aware of the issue of energy and environmental sustainability. It is commonly believed that this role should be played mainly by the public administration but the role of the private sector and the synergy of the actions put in place with respect to the public sector represents an important added value that guarantees greater participation and awareness of all citizens.

As shown in the table below (ref. European Environment Agency) the potential energy savings due to behavioural measures can vary from a minimum of 2% to a maximum of 20%. **The governance actions of the Public Administration are considered behavioural actions.**

Considering the actions of the Municipality of Parma and the additional behavioural actions of external stakeholders, it has been estimated, based on the table below and following the item "combination of interventions", that **the contribution to the reduction of climate-altering emissions in the area could be equal to 12% of the baseline value.**



Potenziali risparmi energetici attuati grazie a misure di cambiamento comportamentale

Interventi	Range di energia risparmiata
Feedback	5 - 15%
Feedback in tempo reale (es. smart meter)	5 - 15%
Feedback indiretti (es. bollette)	2 - 10%
Audit energetici	5 - 20%
Iniziative promosse all'interno della comunità	5 - 20%
Combinazione di Interventi	5 - 20%

Legenda: Potenziali di risparmio energetico derivanti da misure comportamentali
 fonte: EEA (European Environment Agency - www.eea.europa.eu)

B-2.3.c: External behavioural actions		
Action outline		
Stakeholders	Action name	Description
Stakeholder 1	Dissemination of agricultural policies for Parma 2030 to farms by trade associations in the sector	Demonstrative conferences at virtuous farms in the area; Usual conferences in municipal spaces
Stakeholder 2	Valuable volunteers	Corporate volunteering group developed in collaboration with various bodies in the third sector, which stimulates Group collaborators to carry out activities with the aim of environmental and social protection within the territories
	Training in schools and universities	Raising awareness and involvement in environmental protection and the correct use of energy.
	Citizen education	Conferences open to citizens of various age groups. Tailor-made meetings on companies distinguishing sectors (for example: agricultural supply chains). Meetings with trade associations. Two types of paths: one relating to sustainable finance instruments and one relating to methods of investing savings in an environmentally friendly manner.
Stakeholder 3	WeTree Educational Project	Collaboration with Esperta, Arpae, WWF Parma, Ente Parchi del Ducato, Legambiente Parma, Urban manufacturing and Sustainable Development Festival for environmental education projects.
Stakeholder 4	Update of the home-work travel plan	In order to encourage the use of alternative mobility, the university is committed to the constant awareness and promotion of soft mobility
	Research and development activities	Study of innovative solutions to carry out preliminary experimentation activities in pilot installations and



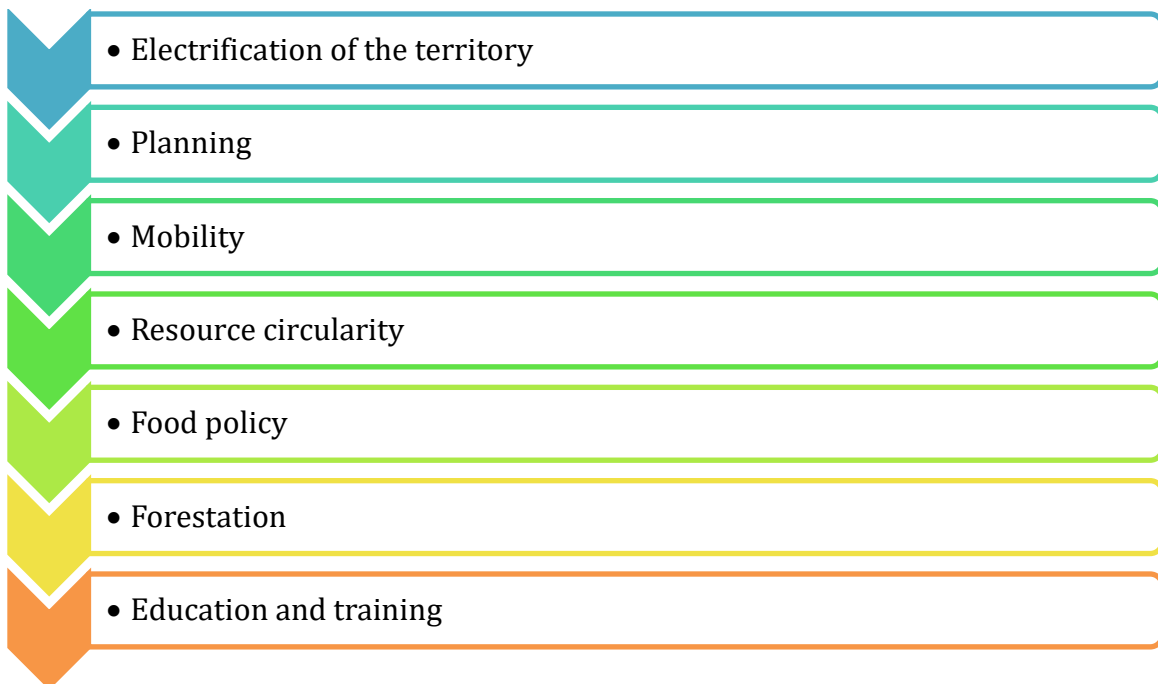
		demonstrators in laboratories, to then move on to real-scale applications in settlements.
	Institutional information and training activities	Initiatives to raise awareness of the issue of sustainability and dissemination of sustainable practices.
Stakeholder 5	Reduction of carbon impact of products	Use of virgin plastic and ingredients from regenerative agriculture in branded products
	Statement of Commitment with Science-Based Targets Initiative (SBTi)	Development of emission reduction targets in the offices and in the plant with replacement of the car fleet and definition of a project roadmap to achieve the Net Zero objective of the buildings themselves
	Carbon Neutral Certification (2018)	Energy efficiency certification for offices and factories
Stakeholder 6	Smart City Parma Project	- Collection and transport of data from sectors installed in the city, data owned by the body or its subsidiaries (dashboard city2) - provide data necessary for the management of the Parma climate neutral 2030 project
Stakeholder 7	Collaboration with WWF	Projects to support biodiversity and climate neutrality
Stakeholder 8	Citizen engagement	Projects to raise citizens' awareness of the rational use of resources (gas, water and electricity)



The strategies of the Municipality of Parma for residual emissions

In order to reduce the so-called residual emissions⁶, the Municipality of Parma will pursue, in future years, the following strategies already started and partly presented in the framework of governance measures, directly quantifiable measures and behavioural measures.

We want to underline that Parma is planning to identify the ways to abate the residual emissions in the future Action plans by 2030 identifying additional actions within the following seven main strategies.



⁶ See definition in the next paragraph.



Overall tables and diagrams of emissions reduction

The overall results of the action portfolio for the reduction of climate-changing emissions are represented in diagrams and tables below.

The values of the "Emission gap" are also presented, as per table A-2.3 inserted here to facilitate the reading of the document.

As regards the overall Emissions Gap, the scenario of "residual emissions" was taken into consideration: NZC defines a maximum of residual emissions - considered as those emissions that cannot be abated by the territory - of 20%.

Considering the "**15% residual emissions**" scenario, the emission gap to be addressed in the Action Plan is equal to 41% compared to the baseline emissions. The remaining 44% is already addressed in the existing SECAP strategy.

Considering the portfolio of actions for climate neutrality and the contribution, in terms of reducing emissions, given by behavioural actions, **the remaining delta of the emission gap is zero.**

This means that to date, the first year of the CCC process, the emissions still to be abated are a total of 15% of the baseline and exactly the residual ones defined by the CCC.

Strengthened by the results obtained and the strategies identified for residual emissions (see previous paragraph), the Municipality of Parma feels it can at this point become a Net Zero City by 2030. This also considering any increases in emissions of the BAU scenario for the next few years.

Emission Gap	Total tCo2eq/year	Value in percentage
Baseline emissions	1,126,647.43	100%
Residual emissions/compensation	168.997,11	15%
Baseline emission reduction target	957,650.32	85%
Emissions reductions in existing strategies	494,418.40	44%
Emission gap to be addressed in the Action Plan	463,231.92	41%
Emission gap addressed in the Action Plan	466,467.93	41%
Delta GAP	-3,235.72	0%

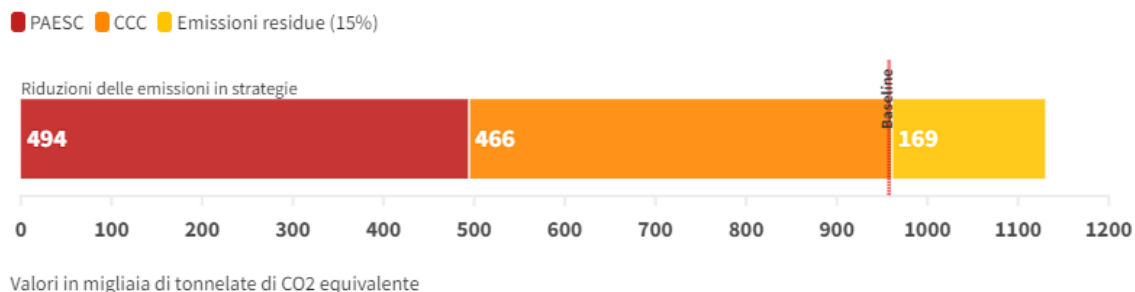


Figure 11 Reduction of emissions from strategies

The image shows that the objective defined by the baseline has been largely achieved thanks to the interventions envisaged by both the SECAP and the CCC.

The diagrams and table below show a focus on emissions reductions by sector. Please remember that the "buildings" sector also includes infrastructure and energy production plants.

Emission reduction by sector	
Sectors	tCO2eq
AFOLU	3105,75
Behavioural actions	135197,69
Buildings	293891,66
IPPU	2782,5
Waste	27254,03
Transport	4236
Total	466467,63

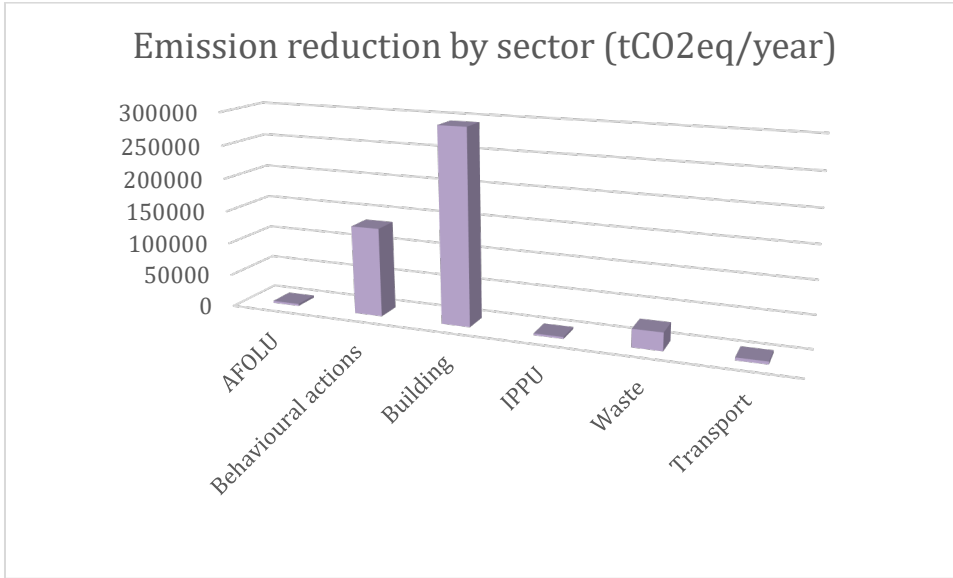


Figure 12 Emission reductions by sector

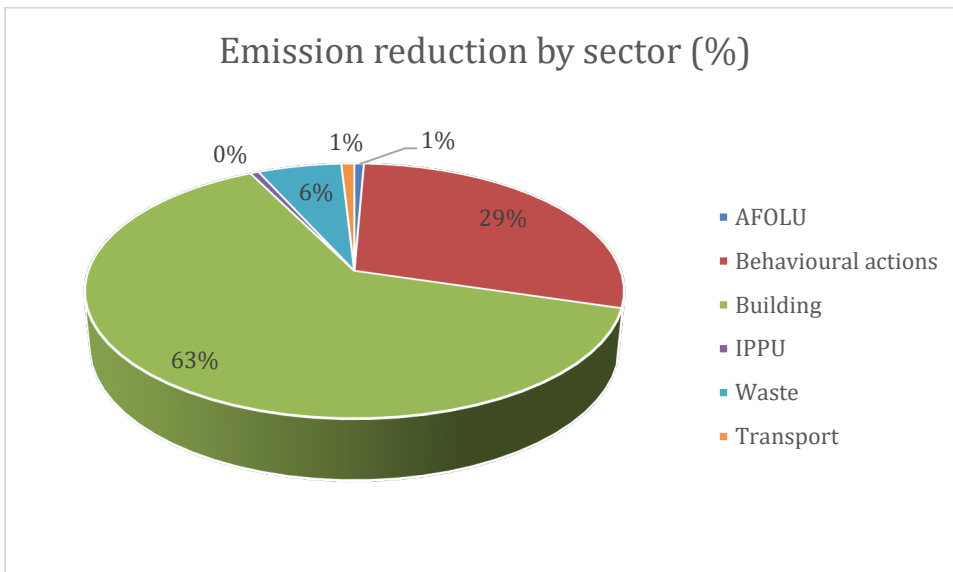


Figure 13 Emission reductions by sector



4.3 Module B-3 Indicators for monitoring, evaluation and learning

This chapter presents a follow up of the analysis included in the Impact Pathways section by highlighting a set of metrics and indicators useful for monitoring and evaluating the actions implemented by the Municipality of Parma.

The approach follows the definition of the macro-actions exposed on the basis of the systemic levers defined by the Theory of Change: 28 KPIs have been defined whose current reference values are partially available to date since they are mostly recent actions, implemented in the light of the guidelines defined by the NZC. The added value of this section lies precisely in its future usability for the years to come: the reference target values reported for the years 2025, 2027 and 2030 represent an estimate of what can be expected in terms of technological improvements, infrastructure and sensitivity of the entire city ecosystem towards the issues of carbon neutrality.

The distinction between direct or indirect impact refers to a direct reduction of climate-changing emissions, therefore quantifiable in tons of CO₂, rather than its indirect reduction, through transversal actions and interventions such as behavioural ones which aim at a greater awareness about environmental and sustainability issues. As can be seen from the following report, most of the indicators to be monitored are of an indirect and transversal type: in fact, the aim was to diversify the indicators subject to monitoring with respect to those already present in the SECAP so as to avoid double counting on different databases.

The availability of data, especially for qualitative data, represents an important challenge for all public administrations in Italy: the objective of this document and of the indicators themselves is precisely to sensitize the public administration itself directly to the importance of collection, analysis and continuous monitoring of data referring to the actions put in place, in order to ensure continuous improvement of the interventions and the overall perceived benefits. It is important that the awareness-raising process also touches all the stakeholders involved so that there is coordination and agreement in the collection of data and synergy in the medium and long-term objectives.

Attached is a summary table of monitoring indicators according to the NZC model.



5 Part C – Making climate neutrality possible by 2030

Part C "Enabling climate neutrality by 2030" aims to outline the enabling interventions, i.e. related to organisational or collaborative governance models, or to social innovation, designed to support and enable the climate action portfolios also described in the Module B-2, and to achieve the co-benefits outlined in the impact pathway (Form B-1).

5.1 Module C-1 Organisational innovation and governance interventions

With reference to chapters A-2 and B-2, the organisational and governance interventions put in place by the Municipality of Parma as complementary to the directly quantifiable emissions mitigation actions are presented below. These actions should not be underestimated in their effectiveness as they demonstrate the emission reduction path that the city is undertaking. Given the temporal horizontality of the project, their transversality is of great importance for a global involvement of the entire city ecosystem. The co-benefits that these actions bring with them go far beyond the single action, also and above all with a view to cultural change in the habits of individual citizens. **In the framework of Module B, these actions fall within the set of behavioural/governance actions that contribute to the reduction of emissions.**

C.1.1: Enabling organisational and governance interventions				
Intervention name	Description	Responsible entity/ dept./ person	Enabling impact	Co-benefits
PGTU drafting	Drafting of the General plan of urban traffic	Mobility and transports sector	- sustainable mobility - efficiency and cost-effectiveness of transport of people and goods - attractiveness and quality of the urban environment	Health of citizens, road safety, reduction of stress from urban traffic, reduction of noise.
Sustainable mobility technical table	Home-school/home-work travel plan		Involvement of municipal and external mobility managers (of schools and companies/private associations)	Raising awareness towards sustainable mobility. Social welfare. Enhancement of sharing mobility platforms.
PULS sustainable logistics	Efficiency improvement of the distribution logistics system		- Regulated goods accesses (gates) - promotion of cycle-logistics and experimentation with electric van sharing	Improvement of traffic and liveability of the city context. Noise reduction.
Neighbourhood meetings	Meetings between citizens and		Citizens' involvement in the collection of mobility improvement proposals	Co-planning and efficiency of interventions. Active



	city councillors			citizens. Awareness raising.
Optimisation of municipal buildings consumption	Historical consumption analysis and prioritisation of interventions	Ecological transition sector	Reduction of costs and energy consumption.	Possibility of greater green investments. Acceleration of the path to electrification.
Possible interventions for energy efficiency of public buildings.	Energy efficiency, renewable energy, electrification of consumption.		Reduction of costs and energy consumption.	Improved internal comfort for employees, less dependence on natural gas.
New types of contracts e.g. EPCs and PPPs	Public Private Partnership		Energy efficiency and service management.	Greater investment capacity, ESCo opportunities, strengthening of the public-private relationship.
PV potential (cadastre)	Feasibility study for the application of photovoltaic panels on municipal and non-municipal buildings		Self-production of energy from renewable sources, reduction of dependence on fossil fuels	Involvement of external stakeholders, start of the path towards electrification.
CER	Feasibility studies to support the creation of CERs		Sensitisation and awareness of citizens towards issues of production/self-production and consumption of renewable energy.	Involvement of citizens and businesses, a tool for the path towards electrification.
Energy Desk	The Energy and Condominium Desk, an information point created to help citizens and condominium administrators navigate the world of energy efficiency		Involvement/awareness for citizens, FEASIBLE desk and EASEAR desk. CULTURIZE European project, EPAH call, Kinetic (CER E PED), Letsgov	Conscious citizens.
Memorandum of Understanding	Collaboration agreement between the		Forecast studies on the need to adapt the network and	More information on network access



g with Ireti electric network company)	company and the municipality		electrical systems; creation of fast charging centres, support for CER creation	procedures and times; tutoring systems for the support of technicians and users on connection practices to the grid of production plants; provision of expertise; sensitisation on the territory towards the issues of renewable energy and electrification.
AFOLU projects	Redevelopment and planting interventions e.g. Orbital forest, bio park, Ecodistrict	Planning sector	Improvement of air quality, reduction of emissions	Improvement of the livability of the inhabited centre and of the areas subject to intervention. Welfare of city users. Greater aggregation among citizens.
PUG_2050	PUG update with addition of Albedo map, terrain permeability map and strategic mission objectives.		Urban improvement of the city.	Greater well-being of citizens, facilitation of the path towards decarbonisation, greener cities.
Information systems security	Funding for the training of information structures and skills to ensure cyber resilience	Digital transition sector	More trained and informed digital citizens	Digitization in support of the climate mission and within the reach of all citizens.
Informed citizen and active citizen project	Digital services for citizens		Digitisation as an additional tool for reducing emissions.	Reduction of emissions from movement, reduction of traffic, speed of receiving information and documents.
PDND	National Digital Data Platform		Digitisation and standardization of citizen data	Digitization in support of the climate mission and within the reach of all citizens.
Digital Twin	Implementation of the digital twin with territorial data		Digitisation of information.	Innovative decision support tool.
School efficiency	Structural interventions at an anti-seismic and energy level.	Maintenance sector	Structure efficiency, safety and energy saving.	Greater comfort and liveability of school spaces. Student welfare.



“All risk” insurance	Insurance from the municipality including the item "catastrophic climatic events"		Risk mitigation/reduction measure towards possible climatic events.	Greater financial coverage and faster recovery in the event of extreme events.
Open laboratory spread throughout the city	Laboratory for the dissemination of food and wine culture	Food and policy sector	Dissemination of the culture of good food	Widespread citizen participation
UNESCO Parma Foundation	Consortium to promote public-private dialogue in the gastronomic and food sector		Synergy and involvement of various sectors operating not only in the world of agri-food culture	Transversal planning
City food policy	- Contracts for public and private canteens - Food education in schools		Involvement of schools and young people in raising awareness of circular economy practices, reducing waste	The involvement and role of the potential of technology in reducing waste and increasing awareness of climate change are being evaluated
ONFOODS projects	Mapping of projects related to the world of sustainability in the FOOD area		Observatory on food and circularity edited by UNIPR	
ITC call on food circularity	Potential for new technologies applied to circularity issues		Partnerships are being evaluated with the main companies in the ITC world	

Analysing the main actions, a picture of considerable commitment by the Municipality of Parma in achieving the objectives defined within the Mission emerges.



C-1.2: Description of the organisation and governance interventions - textual and visual elements

In addition to the interventions described above which have a purely local level of governance, we recall the table in chapter A-2 in which the strategies were presented at a regional, national and transversal level in which the administration participates, being able to have a direct impact.

If at the local level the horizontal governance starts from the Municipality of Parma and affects either within it or towards all citizens and the various sectors of the city, multi-level governance sees the inter-relationships between the Municipality itself and: the Emilia-Romagna Region, the other Italian cities that applied for the Mission, the central administrations, and other relevant institutions at regional and national level (e.g. GSE, ANCIER, etc.).

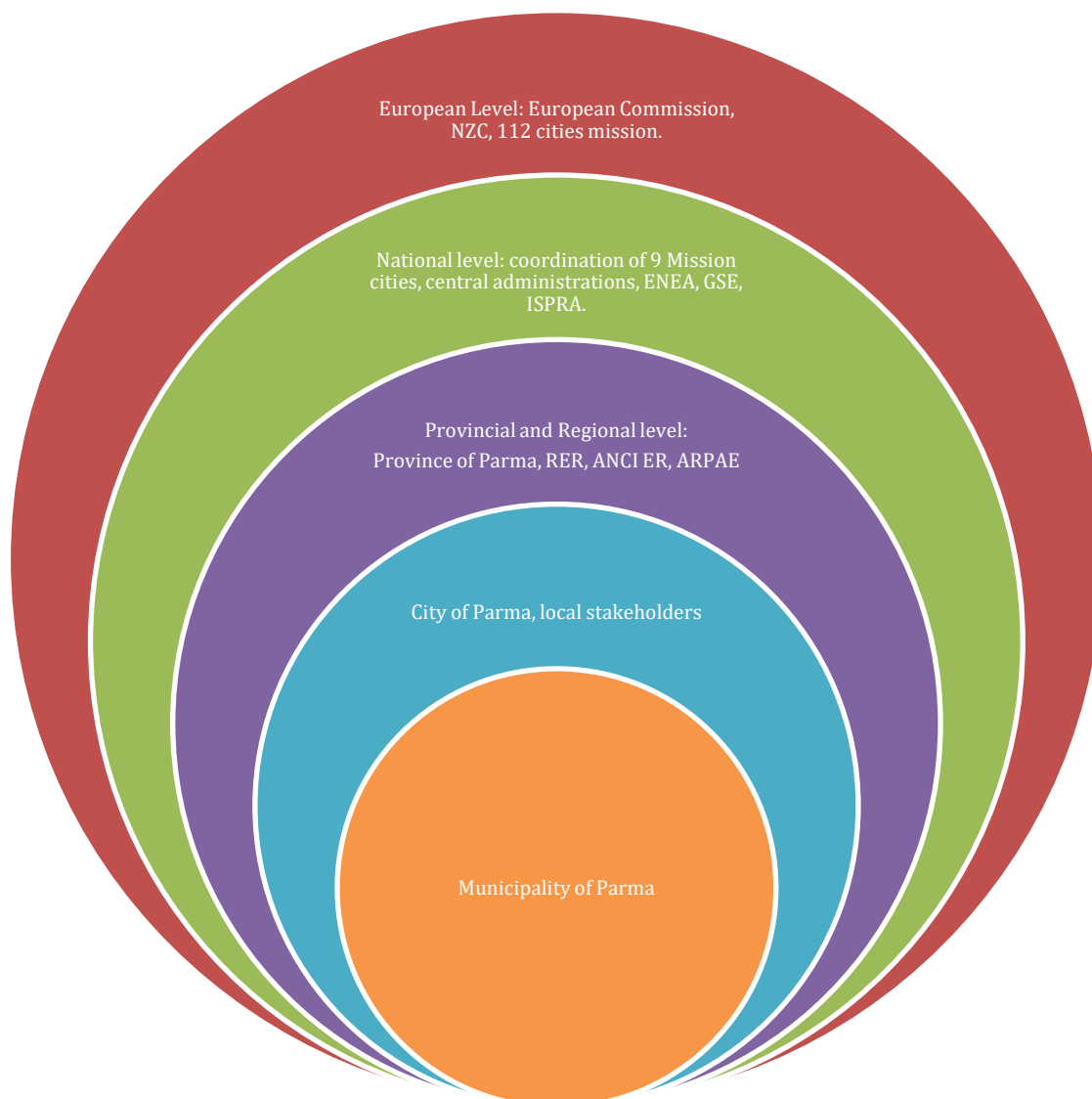


Figure 14 Multi-level governance



5.2 Module C-2 Social and other innovative interventions

In the path towards climate neutrality it is important that the actors in the forefront of the implementation of the plan recognise the need to develop strategies that adapt to the local context in which they operate, also favouring the participation of citizens themselves, developing and promoting tools, resources and skills that constitute a stimulus. In line with this logic, the Municipality of Parma dedicated an entire day of workshops to social innovation in which various actors already involved in the ecosystem of the mission took part.

The main socio-cultural factors on which social innovation is called to answer are:

- Greater attention to the events organised by the Public Administration and by the city government bodies in the role of facilitator and enabler; with this in mind, rethink the methods of involvement (more captivating and aimed at segments of the young population..)
- Attention towards a conscious use of natural resources and dissemination of good recycling, recovery and saving practices
- Inclusion towards marginalised social groups through events that bring together different cultures and underline the aspects of closeness.

In order to develop specific strategies for the City of Parma and support the development of capacities to stimulate systemic change, on 22 June 2023 the Municipality of Parma and Net Zero Cities organised the event "Towards the Climate Contract of the City of Parma". In addition to exposing the current state of affairs with respect to the elaboration of the CCC of the City of Parma, the event was aimed at:

1. exploring the concept of social innovation for climate neutrality;
2. clarifying the crucial role that social innovation plays in drafting climate contracts.

The event was structured with a first part of a presentation that illustrated the process of drafting climate contracts, the actions undertaken and future ones, by the Municipality of Parma, followed by a presentation on social innovation by the representatives of Net Zero Cities. After this first session, the workshop continued with a second part of work on four separate tables, whose discussions and exercises were facilitated by the experts. A third part of results sharing and conclusion by the Councillor for Environmental, Energy and Mobility Sustainability Gianluca Borghi.

We attach the results of the workshop, to be considered as part of module C-2.

As an integral part of the social innovation interventions implemented this year, it is good to also remember what has been illustrated in the previous paragraphs, namely in chapter A-3.3 "Description of the participatory model for climate neutrality in the city" Module C-3 Financing of the portfolio of actions

Table C-3.1 of the Action Plan model, has been eliminated in order not to complicate the reading since the investment values of the individual actions have already been presented in Module B.

The Investment Plan will resume these values by analysing the complex framework of the costs and investments necessary for climate neutrality by 2030 in depth.



6 Outlook and next steps

Plans for the next CCC iteration and Action Plan – text elements

As already presented in chapter 2.2., the sustainability of the Action Plan to 2030 will see some key points which we list below:

- The Municipality of Parma will continue to strengthen the path towards climate neutrality both through new measurable actions and thanks to the continuous and ever greater alignment of governance towards a zero-emission city. It will also keep its pivotal role in the involvement of external actors, including citizens. The path of social innovation already started will continue in future years bringing even more results from the point of view of citizens' involvement.

- As far as the portfolio of actions is concerned, Parma will continue both with an enlargement of the audience of CCC players - and therefore with the collection of new and further actions - and with the monitoring of the actions presented to date. Continuous dialogue with stakeholders will be essential for the success of the Plan also in future years.



7 Attachments

Annex 1: Systemic levers and Impact Framework

Annex 2: Monitoring indicators

Annex 3: Social innovation.

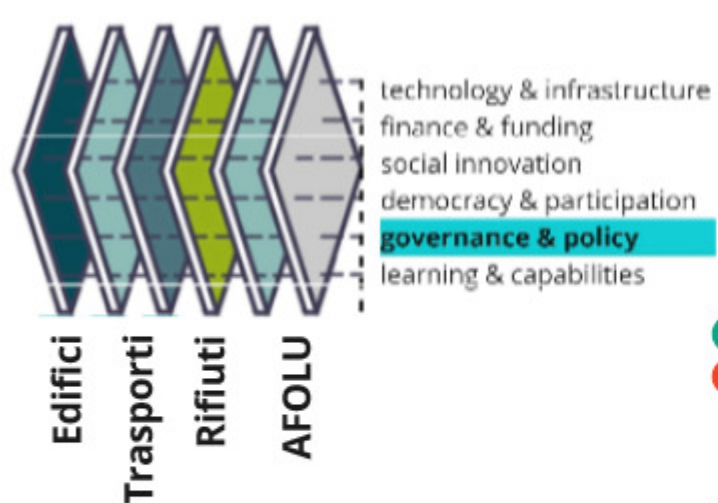


Comune di Parma

2030 Climate Neutrality Action Plan



Annex 1



Governance & policy

Alignment of municipal strategies with NZC objectives

Need to strengthen multi-level governance

- Establishment of Internal coordination team
- Identification of climate strategy objectives of the Municipality of Parma
- Identification of strategic plans to align
- Identification of stakeholders to be involved
- Participatory paths of strategic plans focused on NZC objectives

Early Outcomes

- New guidelines for the waste sector and circular economy
- Establishment of thematic tables
- PUG2050 in line with the Mission
- SUMP update in line with the Mission
- New guidelines for the electrification of consumption

- PGTU in line with the Mission
- PULS in line with the Mission
- SECAP - CCC alignment
- Update on waste and circular economy regulations

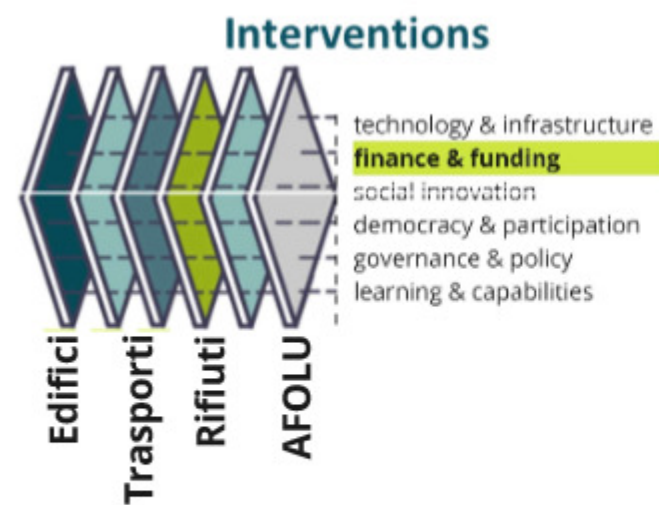
Later Outcomes

- Regulatory innovation in the energy and climate sector
- Synergistic governance actions with research centers and universities in line with NZC

- Distributed leadership
- Collaborative governance on energy and climate
- Active and proactive involvement of stakeholders

Impacts and co-benefits

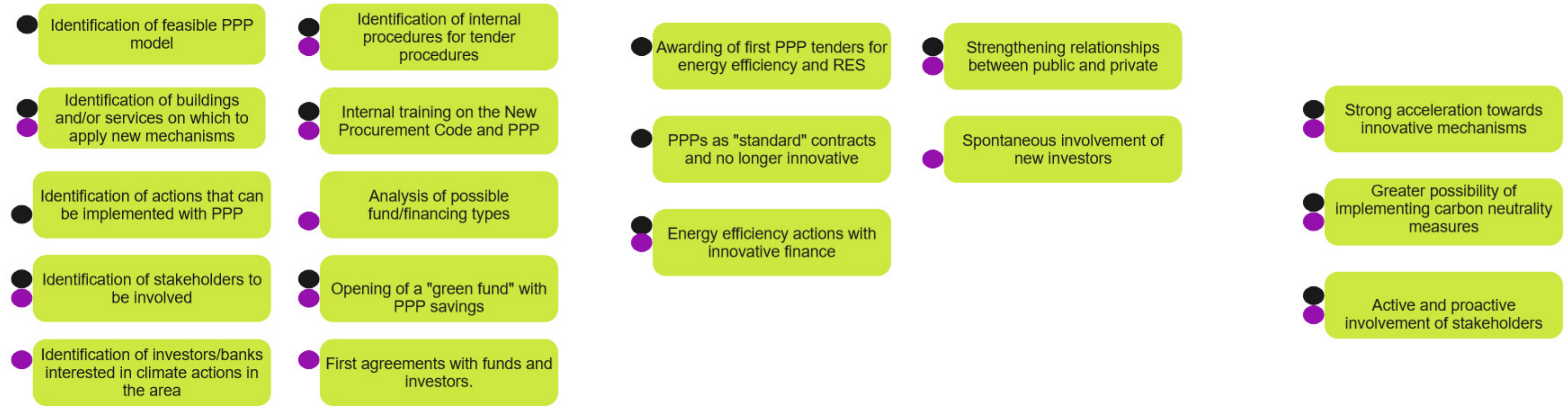
Challenges



Greater introduction of Public Private Partnership contracts

Innovative financial mechanisms with local banking/investor partners

Finance & funding



Challenges

Early Outcomes

Later Outcomes

Impacts & co-benefits

Technology & Infrastructure



Edifici
Trasporti
Rifiuti
AFOLU

- Enhancement of the municipal electricity network
- Sustainable mobility
- Increased installation of renewable energy sources and energy efficiency

Challenges

- Agreement with IReti
- Photovoltaic potentiality mapping
- Purchase of green energy
- Renewal of public and private car fleets
- Reappealing LPT

Early Outcomes

- Energy efficiency and RES in public buildings
- Electrical sharing mobility
- Efficiency of production processes
- EV charging station installation

- REC implementation
- Development of new sources of supply from renewable energy (biogas, biomass..)
- Green/blue Area
- Mobility management (public and private)

Later Outcomes

- NZEB buildings
- Exchange parking lots
- Digital twin

- Greater digital device penetration in the territory and in buildings
- Dissemination of circular economy practices
- Proactive technological development of all stakeholders

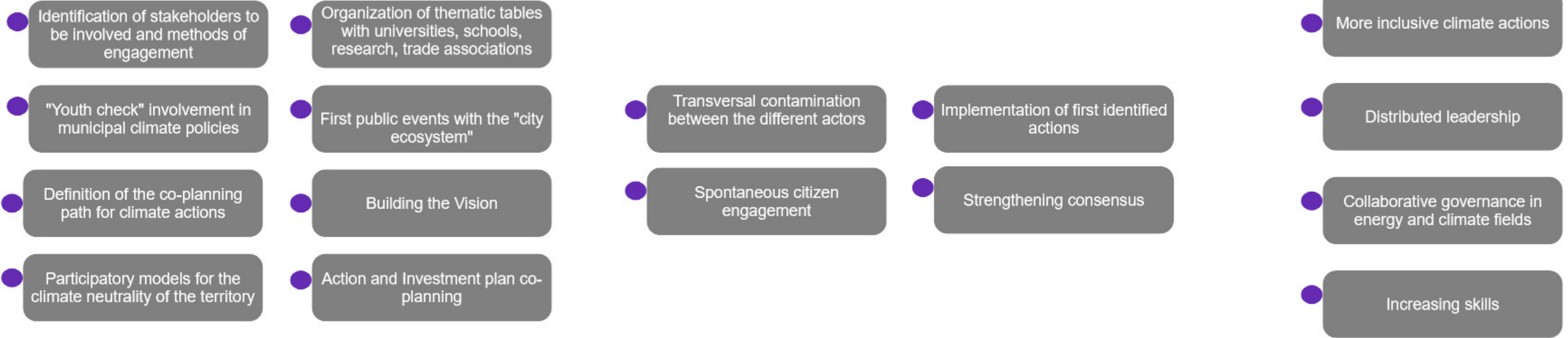
Impacts & co-benefit



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AFOLU

Enabling the "city ecosystem" to contribute to the climate transition

Democracy and participation



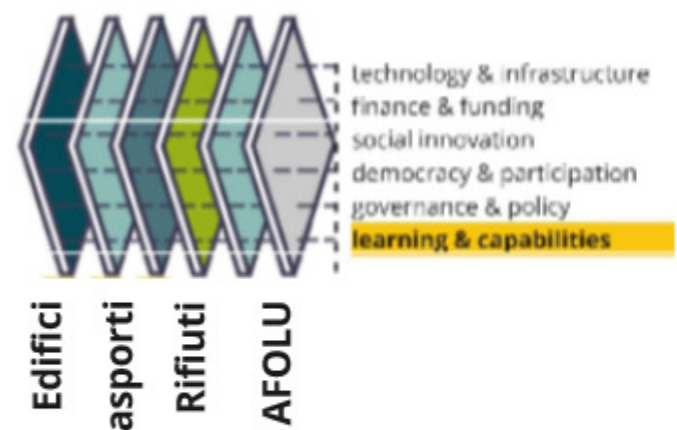
Challenges

Early Outcomes

Later Outcomes

Impacts & co-benefits

Learning & capabilities



- Strengthen internal skills
- Increase local skills and knowledge

- Establishment of One Stop Shops (e.g. Energy Desk)
- Parma's candidacy for European Youth Capital
- Identification of municipal staff training needs
- Parma executive skills: advanced university training course for employees

- Effective team working
- Establishment of thematic tables
- Greater interest in sustainability and climate issues
- Exchange of experiences for the construction of new actions

- Increased awareness of city users and residents
- Enhancement of internal staff
- Introduction of new management and operational models
- Increase in personal skill levels

- Continuous sharing of innovative solutions
- Increase in interactions between the territory and the Municipality.

- Greater ease of learning and increasing knowledge
- Greater propensity to change
- Active, proactive and informed involvement.

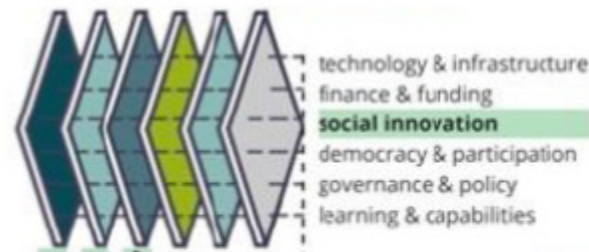
Challenges

Early Outcomes

Later Outcomes

Impacts & co-benefits

Social innovation



Edifici
Trasporti
Rifiuti
AFOLU

Include social innovation in the path to neutrality



Challenges

Early Outcomes

Later Outcomes

Impacts & co-benefits



Comune di Parma

2030 Climate Neutrality Action Plan



Annex 2

ANNEX 2

MONITORING INDICATORS

Lever	Outcome and impacts	Action	Indicator	Target Value			Impact	Sector	
				2025	2027	2030			
Technology & Infrastructure	Electricity grid upgrade	Photovoltaic potential mapping	Installed surface of photovoltaic panels	20%	40%	70%	Direct	Energy Technology & Building	
		Agreements with companies	Number of available "green" energy supply contracts compared to traditional energy supply contracts	10%	15%	25%	Direct	Energy Technology	
			Energy consumption from renewable sources	20%	30%	40%	Direct	Energy Technology	
		Fundings for the implementation of new Renewable Energy Communities	Number of Renewable Energy Communities	10%	20%	30%	Direct	Energy Technology & Building	
	Sustainable mobility	Support for the creation of energy communities (e.g. information events, help desks, etc.)	Number of electric/hybrid vehicles compared to the overall fleet	20%	30%	40%	Indirect	Cross sector	
		Strengthen local public transport	Number of electric/hybrid vehicles compared to the overall fleet	40%	60%	90%	Direct	Mobility Technology	
			Citizens declaring using public transport as their preferred means of travel	20%	30%	40%	Direct	Mobility Technology	
		Green/blue area	Number of accesses to the green/blue area with non-hybrid/electric cars.	30%	15%	5%	Direct	Mobility Technology	
			Number of V2G charging stations	15%	30%	50%	Direct	Mobility Technology	
		Public and private car park	Number of hybrid/electric cars per inhabitant	30%	40%	50%	Direct	Mobility Technology	
Democracy & Participation	City ecosystem participation and involvement	Stakeholder engagement	Number of stakeholders involved in climate neutrality projects	30%	50%	60%	Indirect	Cross sector	
		Active thematic roundtables between public and private stakeholders	10%	30%	50%	Indirect	Cross sector		
		Public awareness and information events for the citizens	10%	30%	50%	Indirect	Cross sector		
	Bureaucracy and procedures	Internal procedures and tenders	Citizen engagement	Number of citizens participating in open meetings between the municipality	10%	30%	50%	Indirect	Cross sector
			National and European funding awarded	10%	30%	30%	Indirect	Cross sector	
Finance & Funding	Innovative finance tools	Investors and banks engagement	PPP ongoing	10%	30%	40%	Indirect	Cross sector	
			Banks and financial partners involved in climate neutrality projects	20%	40%	60%	Indirect	Cross sector	
		Types of green funds or similar financing scheme offered	20%	40%	60%	Indirect	Cross sector		
		Crowdfunding entities active in the area and ongoing projects	10%	20%	30%	Indirect	Cross sector		
	Learning & Capabilities	Strengthening internal skills	Bottom up finance	Ongoing bottom up finance models	10%	20%	30%	Indirect	Cross sector
			High skills hub	High skills hub	10%	20%	30%	Indirect	Cross sector
			Continuous training	Training projects in digitalization and/or sustainability	20%	30%	40%	Indirect	Cross sector
Governance & Policy innovation	Multi level governance	Alignment of municipal strategy with NZC principles	Digitalization	Level of digitalisation and access to public open data	30%	40%	50%	Indirect	Cross sector
			Strategic plans to be aligned with NZC objectives	20%	15%	5%	Indirect	Cross sector	
Social innovation & Participation	Social innovation	Orientation to social needs	Partnerships with universities and research centers in line with NZC	30%	30%	30%	Indirect	Cross sector	
			Interviews/surveys to citizens	20%	30%	40%	Indirect	Cross sector	
			City assemblies within city neighborhoods	30%	50%	60%	Indirect	Cross sector	



Comune di Parma

2030 Climate Neutrality Action Plan



Annex 3



NET ZERO CITIES

Parma towards the Climate City Contract Report

Authors: Emma Puerari, Sabrina Bresciani, Francesca Rizzo, Alessandro Deserti



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Disclaimer

The content of this deliverable reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.



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Indice

- 1 Introduction4
- 2 Shared definition of social innovation4
- 3 Definition of the challenge4



1 Introduction

The Net Zero Cities project aims to support European cities in drastically reducing greenhouse gas emissions through climate actions aimed at achieving 'climate neutrality', one of today's major societal challenges. Net Zero Cities recognizes the need for cities to develop specific strategies that adapt to local and regional challenges, for this reason they support and promote tools, resources and skills. In short, it is necessary that the city recognizes social innovation as a key element in the path towards climate neutrality. A key element to achieve climate neutrality is the development of climate-neutral citizen contracts (CCCs) including plans for social innovation. This processing can be developed:

1. Create enabling platforms and access points for different stakeholders to contribute to the transition towards sustainability, making the achievement of the mission a distributed social outcome.
2. Responding to emerging needs of communities, for example through policies that include vulnerable social groups in renewable energy schemes.
3. Integrate social innovation into the city's portfolio to ensure inclusiveness.

In order to develop specific strategies for the City of Parma and to support the capacity building to stimulate systemic change, on 22th June 2023 the Municipality of Parma and Net Zero Cities organized the event "Towards the Climate Contract of the City of Parma". The event, beside an update about the status of the elaboration of the CCC of the City of Parma, was aimed at:

1. exploring the concept of social innovation for climate neutrality;
2. clarifying the crucial role that social innovation plays in drafting climate contracts.

The first part of the event was devoted to a presentation of the process of drafting the city climate contract, the actions undertaken and future ones, by the Municipality of Parma, a first glimpse of social innovation by the representatives of Net Zero Cities consortium; a second part of work on four separate tables, whose discussions and exercises were facilitated by the experts; a third part of results sharing and conclusion by the Deputy Mayor for Environmental sustainability, Energy and Mobility Sustainability Gianluca Borghi.

This document summarizes the findings of the four round table session. On the tables, the first part of the discussion was focused on deepening the concept of social innovation by developing a shared definition. The second part was focused on defining a specific challenge *"How can the city of Parma include the path towards climate neutrality?"*

2 Shared definition of social innovation

The tables defined the concept of social innovation as a cultural transition that must take place at a systemic level for the city of Parma. Those present at the various tables described social innovation as a process that can and should be used to produce crucial changes for climate neutrality. For the development of this transition, the participants identified some crucial strategies such as the engagement of various stakeholders, the co-planning of the process with the citizens also aimed at identifying what are the concrete actions that the citizens themselves can undertake. Furthermore, it was indicated that guidance on these actions through clear and easy to capture communications is crucial for the transformation that must occur through the described transition.

3 Definition of the challenge



Exercise 1

LOCAL LEVEL: DEFINITION OF CHALLENGE



CHALLENGE

Which is the local challenge?

How can the city of Parma include the social innovation in its path toward climate neutralit?



NEEDS

Which are the main social needs to deal with?

Explain the reasons why the needs expressed are important and for whom.

IMPROVE LOCAL TRANSPORT WORKING ON CITIZENS' HABITS

STUDENTS ENGAGEMENT

FACING POPULATION AGING

FACING IMMIGRATION ISSUE

INCLUDE LOW INCOME POPULATION LEVEL

ENGAGEMENT OF YOUNGER GENERATION

IMPROVING SUBURBS

FOSTERING THE CHANGES THROUGH SOCIAL INNOVATION



SOCIAL AND CULTURAL ISSUE QUALITATIVE AND QUANTITATIVE EVIDENCES

Which are the main social and cultural issue based on this challenge?

Sociocultural issues are the lifestyles and values that characterize a community. For example education, language, law and politics, religion and beliefs, social organizations, technology and material culture, values and attitudes.

RISING AWARENESS ON THE PUBLIC EVENT

LOWERING AWARENESS ON THE AVAILABLE RESOURCES



Which proof do you have about the importance of this challenge?

Describe data, information and news as evidence that the challenge is significant.

YOUNG PEOPLE NOT PRESENT IN THE PARTICIPATION EVENTS

STUDENTS NOT ENGAGED BY THE MUNICIPALITY

SUPPORT TOOLS SUCH AS SCHOOL PROGRAMS

LARGE COMPANIES THAT SHARE THEIR ENERGY SYSTEMS

SUPPORT FOR THE WEAKEST

Comments:

EXERCISE 1

LOCAL LEVEL: CHALLENGE DEFINITION



CHALLENGE

Which is the local challenge?



NEEDS

Which are the main social needs to deal with?



SOCIAL AND CULTURAL ISSUE

Which are the main social and cultural issue based on this challenge?



QUALITATIVE AND QUANTITATIVE EVIDENCE

Which proof do you have about the importance of this challenge?

How can the city of Parma include social innovation in the path towards climate neutrality?

Systematize all existing projects in the area

- communication between subjects (not just companies)
- sharing good practices
- organize sustainability clubs

Bureaucracy slows down change; difficulty in realizing projects (e.g. energy communities)

- it can be used in networks to bypass bureaucracy (e.g. PPP, University of Parma, activate citizens through structured voluntary activities)

Explain why needs are important and to whom they are relevant

Supporting companies in workers' training (they are already aware): a change in production and/or reconversion of the business is needed:

- costs
- time
- disruptions during change (e.g. schools)

We need the involvement of citizens/collaborators/consumers:

- measure impacts and communicate them emotionally (CO2 Kg=# trees)
- measure participation in change
- view consumption e.g. home footprint app to understand how much CO2 you save for each action)
- project sustainability report

Socio-cultural issues are the lifestyles and values that characterize a community. For example education, language, law and politics, religion and beliefs, social organizations, technology and material culture, values and attitudes.

Citizens are not very involved:

- starting from schools to being part of the cultural change
- pilot projects (living labs) in universities
- policies are needed even if initially not popular (traffic and parking restrictions, credits for those who use public transport)
- It is necessary to underline the awareness-raising and structured sharing of good practices in the company (e.g. when to open/close, access/turn off)
- leave employees/users a margin of choice (e.g. thermostat +/-2 degrees)

Describe data, information and news which are significant for the challenge.

Comments:



EXERCISE 1

LOCAL LEVEL: CHALLENGE DEFINITION



CHALLENGE

Which is the local challenge?



NEEDS

Which are the main social needs to deal with?



SOCIAL AND CULTURAL ISSUE

Which are the main social and cultural issue based on this challenge?



QUALITATIVE AND QUANTITATIVE

Which proof do you have about the importance of this challenge?

How can the city of Parma include social innovation in the path towards climate neutrality?

Explain why needs are important and to whom they are relevant.

NEED TO:

- INFORM,
- RAISE AWARENESS
- TRAIN CITIZENS OF DIFFERENT AGES AND GROUPS
- WASTE MANAGEMENT FOOD WASTE
- URBAN GREENING
- REDUCTION OF ENERGY COSTS E REDUCTION OF ENERGY CONSUMPTION (could be addressed through the development of ENERGY COMMUNITIES

ENERGY POVERTY -communities at risk
NOT JUST NEEDS, BUT OPPORTUNITIES:

- INVOLVEMENT OF THE AGRICULTURAL SUPPLY CHAIN
- INVOLVEMENT OF LARGE COMPANIES

Sociocultural issue are the lifestyles and values that characterize a community. For example education, language, law and politics, religion and beliefs, social organizations, technology and material culture, values and attitudes.

- TRUST IN PUBLIC ADMINISTRATION (WHICH MUST GROW)
- IMPROVE ITS ROLE AS A FACILITATOR AND ENABLING PLATFORM
- INCLUSION OF MARGINALIZED SOCIAL GROUPS (WHO HAVE OTHER PRIORITIES)
- RISK THAT SOCIAL INNOVATION IS PERCEIVED AS MARGINAL

Describe data, information and news which are significant for the challenge.

Comments

EXERCISE 1

LOCAL LEVEL: CHALLENGE DEFINITION



CHALLENGE

Which is the local challenge?

How can the city of Parma include social innovation in the path towards climate neutrality?

INCREASING THE AWARENESS OF THE ACTORS IN THE TERRITORY

INCREASE THE NUMBER AND DIVERSITY OF THE ACTORS INVOLVED

CHANGE BEHAVIORS RELATED TO THE MOBILITY OF CITIZENS AND GOODS

DEVELOP AN ENVIRONMENTAL EDUCATION PROGRAM AIMED AT ALL AGE GROUPS WHICH COULD BE LINKED TO BEHAVIOR CHANGE



NEEDS

Which are the main social needs to deal with?

Explain why needs are important and to whom they are relevant.

IMPROVING AIR QUALITY

- - increase in pathologies in the population
- - worsening of the quality of vita

CHANGE BEHAVIORS RELATED TO THE MOBILITY OF CITIZENS AND GOODS

ERADICATE ENERGY POVERTY

OPPORTUNITIES NOT JUST NEEDS:

- COMPANIES INVOLVEMEN



SOCIAL AND CULTURAL ISSUE

Which are the main social and cultural issue based on this challenge?

Socio/cultural issue are the lifestyles and values that characterize a community. For example education, language, law and politics, religion and beliefs, social organizations, technology and material culture, values and attitudes.

LIABILITIES IN PARTICIPATION

NEED TO RETHINK THE METHODS OF ENGAGEMENT



QUALI AND QUANTITATIVE

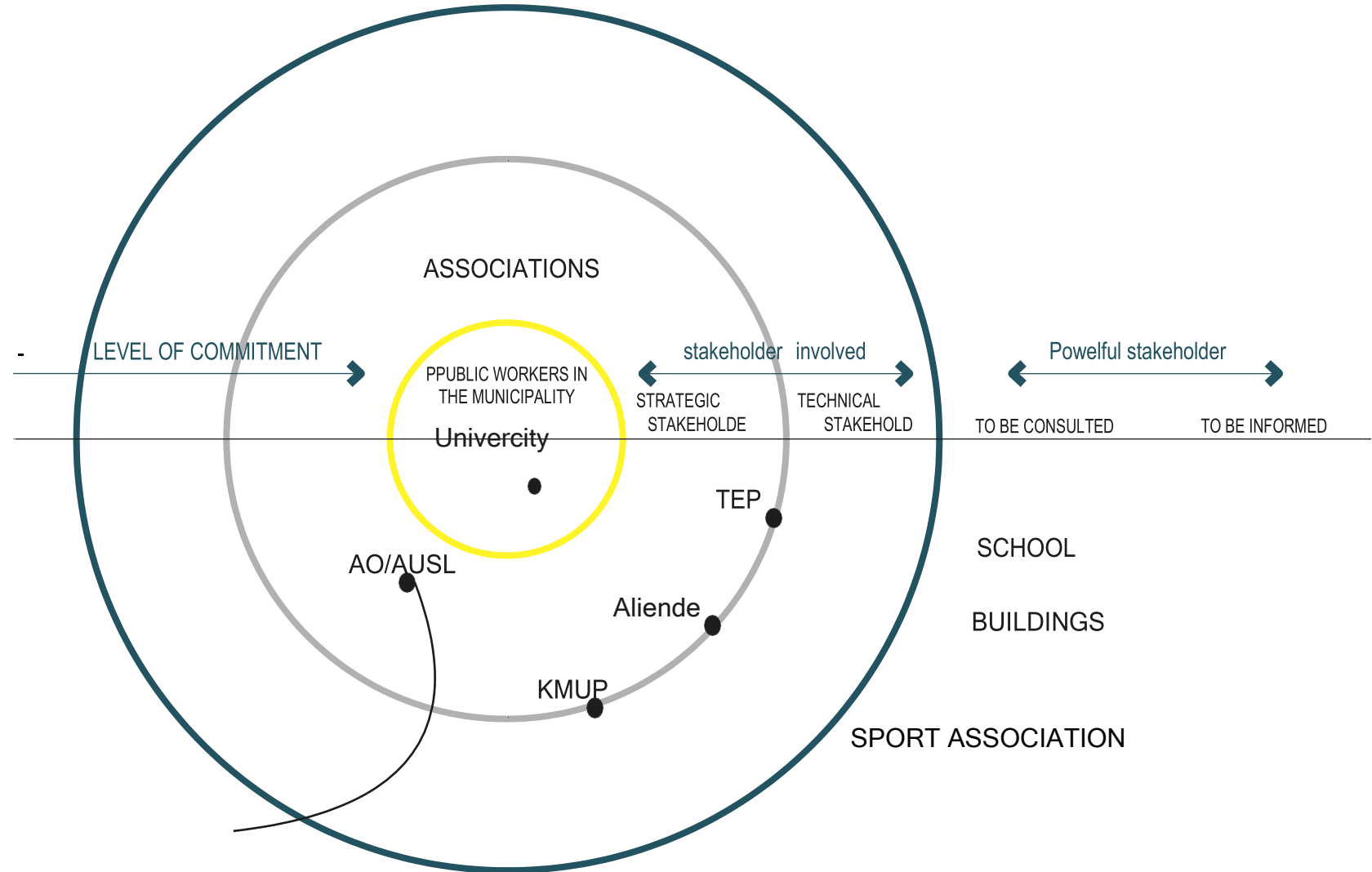
Describe data, information and news which are significant for the challenge.

Comments

EXERCISE 2

STAKEHOLDERS MAP

Stakeholders are all those who have/could be interests in the actions





Climate City Contract

2030 Climate Neutrality Commitments

Climate Neutrality Commitments of the City of Parma



Comune di Parma





Disclaimer

The content of this document reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.

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1 Introduction

The City of Parma embraced the ambitious challenge of the European Mission of the 100 climate neutral and smart cities by 2030 as the natural evolution of the growing commitment and figures of initiatives and investments aimed at sustainability and the reduction of emissions of the Municipality of Parma and its community of citizens, and social, economic and research organizations.

Parma sees the effects of climate change, and feels the urgency to act: there is a clear and unique vision that the whole territory needs to pay more and more attention on the importance and urgency of adopting policies, actions, investments and behaviors, both individual and collective, aimed at greater respect for the environment and a reduction of emissions.

Parma is based in the Po Valley, featuring an intense human activity that contributes to the high concentration of polluting sources. The joining of the Covenant of Mayors in 2013 and the implementation of SEAP 2014 was a key turning point for Parma in applying the green principles to the entire governance action. Since then, Parma decided to start a series of wide-ranging measures and actions, actively involving civil society and businesses, which led ten years later to join the Mission in order to intercept the efforts of an entire territory already devoted to green and sustainability, creating a solid foundation to achieve the radical transformation we need in the next seven years.

The Mission is intended to become an instrument to promote and accelerate in a coordinated way a further effort by the community within the major areas of intervention: the decisive reduction (up to zero) of the consumption of fossil fuels for transport, industrial uses and air conditioning of buildings; a sharp increase of the production of energy from renewable sources; the strengthening of the paths already started in urban forestry and biodiversity, in energy efficiency of buildings and production processes and in circular economy, with the aid of digital transformation on the transition of entire sectors.

This commitment therefore wants to highlight the joint effort of the Municipality of Parma and its stakeholders in accelerating the pace towards climate neutrality by 2030 through policies, actions, investments, in a shared governance of responsibilities and efforts.

2 Goal: Climate neutrality by 2030

Climate neutrality is a goal Parma intends to tackle immediately, inspired by the vision of a conscious, attractive, efficient, and competitive city. Becoming a climate-neutral city is hence regarded as a critical effect of a broader vision and not an isolated aim; it requires painstaking efforts to enhance cultures, capacities, processes, infrastructures, and technologies.

Parma aims to reach a reduction of the 41% thanks to the actions contained in the Action Plan by 2030 (and additional to the ones already included in the SECAP). This is a long-term commitment, fully supported by the Municipality and around 50 organisations which collectively gathered more than 130 different action to have an impact on the emissions produced by the whole city.

Parma focus is not only the emission reduction: the advantages of the climate transition are not confined solely to the environment, yet sustainability creates value for the economy and society. The paradigm shift of climate transition offers a huge opportunity to boost economic well-being, employment growth, and the social development of our local community. The highest goal of our climate neutrality strategy remains in the well-being of the community, allowing Parma to be greener,



smart and accessible to all. Enabling citizens to benefit from transition opportunities will mark the success of our efforts and the future of our city.

3 Key priorities and strategic interventions

A coordinated and strategic approach among different actors is necessary in order to prioritize these actions across different scales. The key systemic priorities that Parma needs to face to speed up climate transition are:

- the development of local production of renewable energies: electricity generated by renewables is the pivotal energy vector in leading the energy transition towards decarbonisation;
- the increase of buildings energy efficiency: in a densely built urban area, the increase of the rate of renovations of private, public and industrial buildings is key to reduce energy consumption and greenhouse-gas emissions
- the raise of a circular paradigm: a responsible approach to the use of resources accelerates processes such as digitalization and electrification, makes consumption more efficient and develops innovative services to reduce environmental impact.
- the promotion of a systemic education to sustainability: an informed, active and engaged community is the enabler of a maximised impact of energy efficiency measures, therefore a cross cutting priority is provide training and skills development programmes to equip all citizens to participate in the net zero economy.

The Action Plan of the City of Parma comprises all the priorities as well as further actions that will enable our city to reach climate neutrality by 2030.

4 Principles and process

Three cardinal principles are driving our joint efforts towards climate neutrality:

- Shared responsibility: public and private sector actors need to be systemically brought together to create the local ecosystem to further catalyse sustainable and socially acceptable projects and investments;
- Innovation: today's early stage technologies will further amplify the impact climate transition projects, therefore the deployment at scale of a range of climate-neutral technologies will enable a rapid, sustainable and deep energy transitions across all sectors in the medium and long run
- People-centred and inclusive transition: sustainability is the best approach through which to improve people's health and wellbeing, improving both the quality of air and life in our city. This includes social, environmental and economic impacts on individuals and communities, as well as issues of affordability and fairness.



5 Signatories

The present Climate City Contract have been developed with a multi-stakeholder collaborative approach, with a joint effort encompassing the main actors of the local ecosystem that committed to the overarching goal of the climate neutrality of the city of Parma. Each signatory listed below contributes by specific initiatives, coherent with its own strategy and in line with the Parma program, and contributed in the development of a process of systemic change, bringing ideas, projects and a wide range of different resources. By signing the agreement, each signatory supports the local coalition in reaching the strategic goal of climate neutrality of the city of Parma, pursuing actions and projects collected in the related Action Plan within the sphere of its own competence and encouraging the future development of a broader systemic transition.

Name of the institution	Sector/Area	Legal form	Name of the responsible person	Position of the responsible person
Agenzia regionale per la prevenzione, l'ambiente e l'energia dell'Emilia-Romagna (ARPAE)	Energy and environment	Public administration	Giuseppe Bortone	General Director
Agenzia Territoriale per l'Energia e la Sostenibilità di Parma (ATES)	Energy and sustainability	Association	Andrea Trabucchi	President
ANCI Emilia-Romagna	Public Administration	Association	Denise Ricciardi	Director
ART-ER Soc. Cons. p.a.	Sustainable growth and innovation	Joint Stock Consortium	Marina Silverii	Executive Director
ASCOM Parma	Commerce	Association	Vittorio Dall'Aglio	President
ASP Parma	Welfare	Investee company	Stefano Andreoli	Sole Administrator



Azienda Casa Emilia Romagna di Parma (ACER)	Social Housing	Investee company	Bruno Mambriani	President
AUSL - Azienda Unità Sanitaria Locale di Parma	Health	Public administration	Massimo Fabi	General Director
Barilla G&R F.lli	Food	Joint-stock company	Giangaddo Prati	Chief Financial, Information & Sustainability Officer
BT Enia Telecomunicazioni S.p.A.	ICT	Joint-stock company	Alessandro Dall'Olio	CEO
Centro Etica Ambientale di Parma ETS	Environment	Association	Giovanni Tedeschi	President
Chiesi Farmaceutici S.p.A.	Pharmaceutical	Joint-stock company	Maria Paola Chiesi	Vice-President and Head of Shared Value & Sustainability
City Green Light S.r.l.	ICT	Limited liability company	Alessandro Visentin	CEO
CNA Associazione Territoriale di Parma	Crafts and Small and Medium Enterprises	Association	Paolo Giuffredi	President
Confagricoltura Parma	Agriculture	Association	Roberto Gelfi	President
Confartigianato Imprese Parma	Crafts and Small and Medium Enterprises	Association	Enrico Bricca	President
Confcooperative Parma	Social enterprises	Association	Andrea Bonati	President
Confesercenti Parma	Commerce	Association	Francesca Chittolini	President



Consorzio Volontario Kilometroverde Parma Impresa Sociale	Forestation	Consortium	Maria Paola Chiesi	President
Coop Alleanza 3.0	Large-scale retail trade	Cooperative company	Mario Cifiello	President
Credit Agricole	Bank Institute	Joint-stock company		Legal representative
Davines S.p.A.	Beauty	Joint-stock company	Davide Bollati	President
Emilia-Romagna Region	Public Administration	Regional Government	Irene Priolo	Vice-President
Ente di Gestione per i Parchi e la Biodiversità Emilia Occidentale	Nature and biodiversity	Public administration	Agostino Maggiali	President
Esselunga	Large-scale retail trade	Joint-stock company	Maurizio Conti	Technical Director
Fiere di Parma S.p.A.	Fairs and events	Joint-stock company	Antonio Cellie	CEO
Infomobility S.p.A.	Mobility & Transport	Investee company	Michele Ziveri	Sole Administrator
IREN S.p.A.	Energy & Environment	Listed Joint-stock company	Luca Dal Fabbro	President
Istituto dei Materiali per l'Elettronica e il Magnetismo (IMEM)	Research	Research centre	Andrea Zappettini	Director
IT.City S.p.A.	ICT	Investee company	Gian Luca Agostini	Sole Administrator
La Giovane S.C.P.A.	Logistics	Cooperative company	Ginetto Donati	President
Legacoop Emilia Ovest	Social company	Cooperative Society	Edwin Ferrari	President



Maps S.p.A.	ICT	Joint-stock company	Maurizio Pontremoli	CEO
NUMBER1 Logistics Group Spa Società Benefit	Logistics	Joint-stock company	Mirko Reggiani	Mobility manager
Parma Infrastrutture S.p.A.	Public real estate management	Investee company	Giorgio Pagliari	President
Parma, io ci sto!	Entrepreneurship	Association	Alessandro Chiesi	President
Proges	Education & Welfare	Cooperative Society	Michela Bolondi	President
Provincia di Parma	Public Administration	Provincial Government	Andrea Massari	President
Salvatore Robuschi & C srl	Pumps manufacturer	Limited liability company	Giulio Schiaretti	CEO
SEP Energia SRL	Energy	Limited liability company	Gilberto Geminiani	Legal representative
Sidel	Packaging machinery	Private company	Riccardo Rosselli	CEO
SMTP	Mobility & Transport	Investee company	Paolo Rezoagli	President
TEP S.p.A.	Mobility & Transport	Investee company	Roberto Prada	President
Unione Parmense degli Industriali	Local Association of Manufacturers	Association	Gabriele Buia	President
Università di Parma	Research & Education	University	Paolo Andrei	Rector



6 Contract with signatures

I, the undersigned, hereby express the commitment of the City of Parma to guide the systemic change of the local ecosystem towards the ambitious goal of reaching climate neutrality. Together with the other signatories, we developed joint vision and commitments as formulated in the City of Parma's Climate City Contract in order to make the City of Parma climate neutral by 2030.

Michele Guerra

Mayor of Parma