

## Climate City Contract

# 2030 Climate Neutrality Action Plan

## 2030 Climate Neutrality Action Plan of the City of Bologna



**Comune  
di Bologna**



**Bologna  
Missione  
Clima**

*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.*





## 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

## Table of Contents

Abstract.....	4
1. Introduction.....	9
1.1 The city of Bologna: historical elements, demographic, socio-economic and territorial characteristics .....	9
1.2 Climate change: mitigation and adaptation at the local level.....	11
1.3 Strategic directions for the local climate transition .....	14
1.4 The 2030 climate neutrality objective .....	15
2. Work process .....	18
3. Part A – Current State of Climate Action.....	25
3.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory.....	25
3.2 Module A-2 Current Policies and Strategies Assessment .....	35
European regulatory framework on energy and climate by 2030 .....	38
National, regional and local energy and climate framework for 2030.....	40
Need for action on policies, strategies and regulations to enable neutrality .....	53
3.3 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality.....	58
Stakeholder Analysis.....	58
Description of systemic barriers and opportunities .....	66
4. Part B – Pathways towards Climate Neutrality by 2030.....	76
4.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways .....	89
4.2 Module B-2 Climate Neutrality Portfolio Design .....	97
4.3 Module B-3 Indicators for Monitoring, Evaluation and Learning .....	123
5. Part C – Enabling Climate Neutrality by 2030.....	127
5.1 Module C-1 Governance Innovation Interventions .....	127
5.2 Module C-2 Social Innovation Interventions .....	153
5.3 Module C-3 Financing the portfolio.....	167
6. Outlook and next steps.....	168
7. Annexes.....	169



## Abstract

This Action Plan is a fundamental part of the Climate City Contract of the City of Bologna, together with the Document of Commitments and the Investment Plan. It was built following the guidelines and methodologies provided by Net Zero Cities (NZC), through a continuous process of engagement of the city, understood as local stakeholders and citizens, as well as a multilevel dialogue with regional, national and European institutions and the key players for the energy and climate transition. Consistent with the templates provided by NZC, this Plan starts from the analysis of the current situation (Modules A), including the inventory of greenhouse gas emissions as of 2018, a stakeholder mapping, the analysis of barriers to climate neutrality, the evaluation of the most relevant policies and regulations to enable the achievement of the objectives by 2030 and the need for intervention to improve them. The following part (Modules B) describes the expected impact pathways following the implementation of the portfolio of actions by the Municipality and local stakeholders, then presents the full portfolio of actions, the indicators for monitoring the expected impacts and the strategy to address residual emissions. The last part (Modules C) describes the processes and measures of governance innovation, social or other innovation initiatives, implemented or underway to enable the transition path towards climate neutrality by 2030; the participation ecosystem activated for the development and implementation of the CCC; future prospects and next steps.

The boundaries of the CCC for the city of Bologna is the administrative territory of the Municipality of Bologna; there are no areas of exclusion, as proposed in the application to the Mission. The actions collected refer to the period going from 2018 (year taken as the reference baseline) up to today, including future actions that are in the planning phase (specified separately from those carried out, in progress or approved).

The main areas of action to build a concrete perspective of climate neutrality on the territory of the Municipality of Bologna, described and specified in Module B of this Plan, are in summary:

- **Regulatory innovation**: policy and regulatory innovation must accompany and stimulate technological and social innovations. The municipal administration has initiated and intends to continue active discussions with all other institutional levels (multi-level governance), in order to build and update a regulatory and planning framework consistent with the objectives of reducing GhG emissions and increasing national and local energy autonomy through renewable sources. Regulatory innovation is fundamental to allow the implementation of the potential of the Bologna area, capable of achieving energy autonomy through renewable sources, especially in its metropolitan dimension. The Municipality of Bologna, through its regulatory and planning tools, pursues not only the objectives of increasing local energy production from renewable sources and energy efficiency, but also the recovery of natural, drainage and urban cooling performance; this foresees an increase in the municipal tree budget, the greening of surfaces and buildings (green roofs and walls), an improvement in the albedo of materials, as well as the widespread application of Nature-based solutions - NBS.
- **The development of local energy production plants from renewable sources**: with the aim of transforming the city from a consumption centre to an efficient and circular production centre of clean energy. This is achieved through the creation of large photovoltaic systems (energy parks and agrivoltaics), biogas production systems, hydroelectric energy, energy recovery from waste management and promoting the spread of small systems integrated into buildings and car parks.
- **Transformation of public buildings**: intervening on the city's large public building heritage (municipal buildings, schools, public residential buildings, healthcare facilities, university buildings, etc.), also through the promotion of new forms of public-private partnership, to definitively overcome fossil sources through an efficient and intelligent system of clean energy production and energy efficiency. This action is also fundamental to set a good example and create a local market favourable to the energy transition of private buildings.



- Decarbonisation of Local Public Transport (LPT): the decarbonisation of Local Public Transport is envisaged through a plurality of projects and important investments; the intervention of greatest strategic importance is certainly the tram network, which introduces 4 lines connecting the city centre to four strategic areas on the immediate outskirts of the city, for a total of approximately 60 km of network. The tram is accompanied by further LPT electrification interventions and the first activation of a local public transport fleet with hydrogen buses, also providing H<sub>2</sub> production and recharging stations at the depots.
- Involvement of businesses and economic activities: the municipal administration considers a synergy of objectives with entrepreneurial realities to be fundamental and their involvement therefore represents a fundamental step for the achievement of climate objectives. Important local businesses and economic activities participate in the mission with interventions aimed at the production of clean energy, energy efficiency, electrification of consumption, awareness-raising and training actions and identification of financial instruments to support climate neutrality objectives.
- Involvement and active participation of citizens: the Municipality of Bologna considers the involvement and participation of citizens in the Climate Mission and in the city's energy and climate transition process to be of fundamental importance. The city of Bologna stands out for the active participation of citizens in city policies, also thanks to the participation paths activated by the Municipality in various areas. As part of the Climate Mission, there are three fundamental tools activated for the involvement, information and education of citizens:
  1. Citizens' Assembly for Climate: set up in 2023 with the mandate to define "proposals and recommendations to make Bologna a solar, renewable and sustainable city, accelerating a just energy transition, towards a model based on the reduction of energy consumption, energy efficiency, the production and use of renewable energy, individual and collective self-consumption, energy communities". The outcome produced 6 recommendations and 24 proposals to reduce emissions, promote redevelopment towards more sustainable buildings from an energy point of view, the sharing of renewable energy, the decarbonisation of mobility, the mitigation and adaptation to climate change at local and overcoming existing administrative barriers, integrated into this Action Plan.
  2. Energy help desk of the Municipality of Bologna: activated in March 2023 as an action of the Climate Mission, it is a free information tool on energy aimed at citizens. The Energy Desk, promoted by the Municipality and managed by the Agency for Energy and Sustainable Development (AESS), also serves as an important tool for listening to the needs of citizens concerning energy, with the aim of being able to identify the barriers and needs of the city and therefore to enhance the support provided in the future through the strengthening of this tool, also thanks to the exchange of best practices with other cities in the Mission and beyond, on One Stop Shops.
  3. Energy and Environment Showroom: activated to plan and implement environmental awareness and education actions in schools, it involves more than 5000 students every year with educational activities focused on the ecological transition and the fight against the climate crisis.
  4. Network offices: decentralized units in the neighbourhoods of the Municipality of Bologna that coordinate and support information, awareness-raising and training activities for the ecological and climate transition of citizens by local associations and neighbourhood houses.

The Action Plan was developed in close coordination with the Commitment Document and the Investment Plan, which respectively contain the commitments of the Municipality and the stakeholders to the actions presented here and the investments connected to the actions themselves.



## List of figures

Figure 1: Monthly average, maximum and minimum regional temperatures for autumn 2023, climate values (1991-2020) and corresponding anomalies .....	13
Figure 2: Climate Transition Map (Source: Net Zero Cities, Transition Team Playbook p.14) .....	19
Figure 3: Build a strong mandate .....	19
Figure 4: Illustrative figure of the Transition Team activated by the Municipality of Bologna for the Mission .....	21
Figure 5: Processes activated within the Bologna Climate Mission for the construction of the ecosystem for change .....	23
Figure 6: Understand the system .....	23
Figure 7: Co-create a portfolio .....	24
Figure 8: Breakdown of emissions in 2018 by sectors .....	30
Figure 9: Breakdown of emissions in 2018 by sector and subsector [tCO <sub>2</sub> eq] .....	30
Figure 10: Breakdown of 2018 emissions by scope and sector .....	31
Figure 11: Breakdown of 2018 emissions by energy carriers/emission gas .....	31
Figure 12: CCC emission baseline .....	32
Figure 13: Livestock population in the municipality of Bologna as of 31 December 2022 .....	33
Figure 14: Overall extension of different crops in the municipality of Bologna .....	34
Figure 15: Nitrogen content by cultivation type in the municipality of Bologna .....	34
Figure 16: Analysis of internal stakeholders for influence on the city's climate transition process (Departments, Areas and Sectors of the Municipality of Bologna).....	60
Figure 17: Mapping of external stakeholders by influence and interest .....	64
Figure 18: Project of the four tram lines in Bologna .....	85
Figure 19: Potential energy savings from behavioural measures (EEA).....	111
Figure 20: Municipality and Metropolitan City of Bologna .....	120
Figure 21: Overall values of emission reduction .....	122
Figure 22: Local governance for Bologna Missione Clima .....	137
Figure 23: Multi-level governance for Bologna Missione Clima .....	142
Figure 24: Selection criterion for the members of the City Assembly for climate of Bologna (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi) .....	144
Figure 25: Phases and meetings of the Citizen Assembly for the Climate of Bologna (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi) .....	145
Figure 26: Themes that emerged during the deliberation phase of the Citizen's Assembly (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi) .....	146
Figure 27: Summary of the entire process of the Citizen Assembly of the Municipality of Bologna ...	151



## List of tables

<i>Table №</i>	<i>Title</i>	<i>Page</i>
<i>I-1.1</i>	<i>Climate neutrality target by 2030</i>	<i>17</i>
<i>A-1.1</i>	<i>Final energy use by source sector</i>	<i>27</i>
<i>A-1.2</i>	<i>Emission factors applied</i>	<i>28</i>
<i>A-1.3</i>	<i>Activities by source sector</i>	<i>28</i>
<i>A-1.4</i>	<i>Greenhouse gas emissions by sector</i>	<i>29</i>
<i>A-2.1a</i>	<i>List of relevant policies and strategies at European level</i>	<i>39</i>
<i>A-2.1b</i>	<i>List of relevant policies and strategies at national, regional, metropolitan and municipal levels</i>	<i>40</i>
<i>A-2.1c</i>	<i>Relevant legislation at national and regional level</i>	<i>50</i>
<i>A-2.1d</i>	<i>Policies, strategies, relevant regulations and need for intervention</i>	<i>53</i>
<i>A-2.1e</i>	<i>Emission Gap</i>	<i>56</i>
<i>A-3.1a</i>	<i>Analysis of internal stakeholders (Departments, Areas and Sectors of the Municipality of Bologna)</i>	<i>58</i>
<i>A-3.1b</i>	<i>Initial analysis of external stakeholders for the development of the CCC</i>	<i>61</i>
<i>A-3.2</i>	<i>Signatory partners of the Climate Mission</i>	<i>65</i>
<i>B-1.1</i>	<i>Impact pathways</i>	<i>90</i>
<i>B-2.2a</i>	<i>Measurable actions</i>	<i>99</i>
<i>B-2.2b</i>	<i>Measurable future actions being planned (all sectors)</i>	<i>107</i>
<i>B-2.2c</i>	<i>Behavioral actions of the Municipality and Mission partners</i>	<i>112</i>
<i>B-3.1</i>	<i>Impact pathways and indicators</i>	<i>123</i>
<i>B-3.2a</i>	<i>Indicator Metadata</i>	<i>125</i>
<i>C.1.1</i>	<i>Enabling organizational and governance interventions</i>	<i>127</i>
<i>C.2.1</i>	<i>Enabling social innovation interventions</i>	<i>153</i>



## Abbreviations and acronyms

Abbreviations and acronyms	Definition
<b>CCC</b>	Climate City Contract
<b>NZC</b>	Net Zero Cities
<b>IPPU</b>	Industrial Processes and Product Use
<b>AFOLU</b>	Agriculture, Forestry and Other Land Use
<b>SECAP</b>	Sustainable Energy and Climate Action Plan
<b>PUG</b>	General Urban Plan
<b>RE</b>	Building Regulations
<b>SUMP</b>	Sustainable Urban Mobility Plan



# 1. Introduction

## Introduction

### 1.1 The city of Bologna: historical elements, demographic, socio-economic and territorial characteristics

The origins of Bologna date back to more than three thousand years ago, already in the Bronze Age on the current urban territory there existed a village made up of "terremare", dwellings made up of huts built on stilts (Villanovan phase); with the Etruscans (6th century BC) and even more so with the Romans (starting from 189 BC) it became an important organized urban area and a commercial and industrial centre of major importance. It experienced an important phase of growth and building expansion from the 11th century, also driven by the founding of the oldest European university, which took place in 1088 (for this reason the city is called "La Dotta" - The Learned One). Bologna is known for its many illustrious protagonists, universally recognized for their innovative and revolutionary activity, such as Ulisse Aldrovandi (naturalist and teacher in Logic, Philosophy and Natural Philosophy, 1522 – 1605), Luigi Ferdinando Marsili (scientist, academic, diplomat, general, founder of the Institute of Sciences of Bologna, 1658 – 1730), Luigi Galvani (doctor, physiologist, physicist, philosopher, academic, professor of Medicine, Surgery, Anatomy and Obstetrics, 1737 – 1798), Augusto Murri (doctor, politician, professor of Medicine and Director of the University Medical Clinic of Bologna, 1841 – 1932), Augusto Righi (physicist and politician, 1850 – 1920) and Guglielmo Marconi (inventor, President of the National Research Council, President of the Royal Academy of Italy, 1874 – 1937).

Among the excellences that Bologna has achieved in history, in addition to culture, knowledge and innovation, there are certainly those linked to civil rights and freedom. In fact, in Bologna the first university chair given to a woman was in 1239 with Bittisia Gozzadini (jurist, 1209-1261); Bologna was also the first city to proclaim the abolition of slavery and the liberation of serfs; as a matter of fact, with the Liber Paradisus Act of 1257 the Municipality of Bologna decreed the redemption of all the serfs present on its territory (5855 people), paying to their lords (almost 400) the pre-established sums and from that day on, all men and women of the city were free.

Bologna was also the first European city to have a huge industrial district powered by hydraulic engines, thanks to its numerous canals. It is estimated that between the 15th and 16th centuries this source of energy provided work to around 30,000 workers and 300 companies were employed in the processing of silk.

One of the main peculiarities of the panoramic profile of Bologna is given by its towers, in particular the Two Towers, the Asinelli (about 100 m high) and the leaning Garisenda (almost 50 m), built in the early 12th century. Most of the city's buildings, towers and palaces have been built for centuries using the "Bologna brick", an element of local tradition whose characteristic colour gives rise to the nickname of Bologna, called the Red One (La Rossa).

Beyond the Two Towers, the profile of the city is also marked by the complex system of porticoes (archways) (overall 62 km long), a model of a particularly active social life, active at all times and in any climatic condition. In 2021 Bologna porticoes became UNESCO's World Heritage of Humanity Site.





Today's socio-economic context is complex, the resident population of Bologna continues to grow slightly but steadily over the last decade. Growth is supported by the migratory balance, which compensates for the always negative value of the natural balance. The ability to attract new residents who arrive mainly from other Italian cities and a constantly increasing temporary population made up of students, workers and tourists is confirmed.

Bologna is currently the seventh most populous municipality in Italy, with 392,000 inhabitants registered in the municipal population registers as of 31 December 2022, with an average age of 46.9 years. In addition to residents and non residents (but living steadily in Bologna), Bologna is lived by a further 100,000 people (workers, students and city users of the area), approximately 29% more, bringing the total number of people present to approximately 500,000, without considering tourists.

Bologna today, in addition to being expanding in terms of resident population and people who gravitate to the city, presents an ever-increasing attractiveness, as also confirmed by the data relating to tourist flows. The first element of attraction of Bologna is certainly culture, understood as the set of monuments, museums, exhibitions and cultural events.

One of the most attractive universities in Europe, as well as the oldest on the continent, is located in the centre of the city. The University's peculiarity is a multicampus organization which involves an important and extensive part of the historic city centre and other parts in interesting contexts. In addition to attracting young people who animate the city, it invigorates the labour market with skills and offers the opportunity to exchange with international realities. There are also several research centres in the city (CNR - National Research Council, ENEA - National Agency for new technologies, energy and sustainable economic development, Bologna Technopole, etc.). These relationships are particularly evident with the healthcare system and the mechanical production system, two leading sectors of Bologna's economy. In fact, the economic system has always been characterized by the presence of a dynamic entrepreneurial fabric, which over the years has been able to generate excellence, both in the manufacturing and service sectors.

From an economic point of view, Bologna can count on an entrepreneurial system made up of approximately 33,000 companies, the main economic sectors are construction (completion and finishing of buildings), wholesale and retail trade, catering and other personal service activities; Bologna is first among the large Italian municipalities for employment rate, which stands at 73%.

Today, market-leading companies and small suppliers of components and technologies operate in the various segments of the local economy which, together with the system of skills and know-how produced by the local universities and the world of education and training, have made the territory a place of attraction for important industrial groups, successful brands and international research centres.

With an average income for each taxpayer of 26,500 euros, Bologna is fourth in Italy in the income ranking among municipalities with a population exceeding 100,000 inhabitants.

In the city's perimeter, equal to 141 square kilometres, there are over 400,000 properties, of which 55% are residential and over 60% of families own the home where they usually live. 75% of buildings were built before 1961, while in the EU only 35% of buildings are more than 50 years old. The estimated real estate value at municipal level amounts to over 47.5 billion euros, two thirds of which concerns residential properties.



Bologna can also count on a complex system of spaces that constitute a rich environmental heritage, composed of agricultural areas, hilly areas, river belts, private urban green areas and public green areas, which overall cover almost 2/3 of the municipal territory. This "urban eco-network", defended and protected through territorial and municipal government instruments, represents today more than ever the resource from which to start to face the challenges of climate change and health, and can be interpreted, valorised and planned through the interpretation key of the ecosystem services provided, i.e. the contribution that natural capital provides in terms of goods and services to the population, in particular for supply services, regulation services of natural cycles (including the storage of CO<sub>2</sub>) and cultural services.

Bologna is a historic city that is profoundly changing its public transport, starting with the project of a new tram network, organized on four interconnected lines to become a rapid mass transport system for the entire urban area of Bologna.

Much attention is also paid to the public building heritage. Through the reuse of the EU contribution - NEXT GENERATION EU - within the National Recovery and Resilience Plan and with financing through EIB mortgages, important modernization, valorisation and redevelopment interventions of school buildings have been launched, which are added to those already financed by the municipal administration. In public residential construction, a strategy is implemented that combines local energy production from renewable sources with energy efficiency interventions, also in response to new forms of energy-related poverty.

## 1.2 Climate change: mitigation and adaptation at the local level

The path of the Municipality of Bologna in the implementation of policies aimed at combating climate change, consistent with European, national and regional strategies, had already been started in the 90s with the first Municipal Energy Plan, followed by its updating over the years 2000; but it is with the Municipal Energy Program (PEC) of 2007 that Bologna made the first concrete commitment to reduce carbon emissions into the atmosphere by 6.5% compared to 1990 and therefore locally achieve the objective that Italy had set at national level, for joining the Kyoto Protocol. Since then, the path of the Municipality of Bologna is divided into the following stages:

- in 2008 it joined the Covenant of Mayors, approving the Action Plan for Sustainable Energy (SEAP) in 2012;
- in 2014 it joined the initiative "Mayors Adapt – the Covenant of Mayors Initiative on Adaptation to Climate Change" launched at the European Commission as part of the Covenant of Mayors, approving in 2015 the "Climate change adaptation plan for the city of Bologna";
- in 2018 it achieved the objective of a reduction of almost 22% assumed by the SEAP in greenhouse gas emissions compared to 2005;
- in 2019 it joined the New Covenant of Mayors for Climate and Energy, approving the Action Plan for Sustainable Energy and Climate (SEAP) in 2021; the City Council also approved the Declaration of Climate and Ecological Emergency in the same year, which recognizes the urgency of the fight against climate change. The Declaration contains a series of commitments, including: promoting knowledge on CO<sub>2</sub> emissions, acting immediately to reduce emission levels to reach net zero by 2030; promoting citizen participation in environmental policies. The Declaration also asks that measures to combat the climate emergency comply with the following principles: Climate and ecological justice, participatory and deliberative democracy, transparency.



- in 2021 it organically integrated adaptation and mitigation measures within the General Urban Plan and the Building Regulations. In the same year, some changes were also introduced to the Municipal Statute (Council Resolution 77/2021 of 12/07/2021) which concern the inclusion of the objective of climate neutrality among the programmatic objectives of the Municipality and the introduction of the Assembly Citizen among the participation institutions.

The SECAP is therefore the main tool with which the Municipality, up until the drafting of the CCC, estimated and monitored greenhouse gas emissions in the municipal territory and planned objectives and actions for reducing climate-altering emissions and climate adaptation. The objectives contained therein have been largely implemented and developed in the General Urban Plan and in the Municipality's Building Regulations, key instruments that regulate all building and urban transformations in the area, thus aligning with the adaptation and emissions reduction objectives set by the SECAP (40% reduction in emissions by 2030, compared to the 2005 baseline). The CCC, and therefore this Action Plan, aims to be the natural evolution of the SECAP in terms of climate change mitigation, by resuming, updating and strengthening emissions reduction actions, in order to accelerate the achievement of neutrality by 2030. In particular, the CCC has triggered a much broader process of engagement and involvement of citizens and stakeholders compared to the SECAP, promptly collecting specific actions not included in the SECAP, and which will be monitored promptly in terms of emissions reduction. The key actions of the SECAP and other plans (eg: the SUMP, the General Urban Plan and the Building Regulations, ref. Modules A-2, C1), are incorporated into this Action Plan as they are strategic for reducing emissions. In the analysis of the actions proposed within the CCC, particular attention was always paid to avoiding double accounting in terms of emissions reduction in the case of actions already present in other plans. The CCC will therefore complement the SECAP, not replace it, as a complete and more enhanced tool for synergistic and systemic commitment of the entire city towards climate neutrality. The monitoring of the SECAP will continue periodically, as foreseen by the Covenant of Mayors, as a voluntary tool for reporting and integrated updating of the city's climate mitigation and adaptation actions.

The Municipality has undertaken this path for mitigation and adaptation also because citizens have a clear awareness of the climate changes underway, which locally manifest themselves with an increase in average temperatures, with stronger anomalies during the summer period (as well as an increase of the duration of heat waves and tropical summer nights), the extension of periods of absence of rain and the increase in the frequency of days with intense precipitation; for this reason the city has been working for some time on all sectors to improve the different forms of land management and transformation in terms of environmental and climate balances (emissions, albedo, phytomass, urban drainage, etc.).

In recent years, awareness of the relevance of climate change has increased, just as the local effects of these changes have become increasingly evident in the area. Water scarcity has taken on ever greater importance, in 2021 Bologna was in fact the city in the Emilia Romagna Region with the least rainfall (only 417 mm in 2021) and with the highest decrease compared to the decade 2005-2016 (311 mm less, -40.9%). The 2021 anomaly is evident even when compared with the climatic value of the thirty-year period 1971-2010, -306 mm. 2022 also saw exceptionally low rainfall: a total of approximately 516 mm of water fell in just 60 days of rain, compared to the approximately 900 mm average recorded in the period 1991-2020. 2022 was also among the 5 driest years since 1961 (with 1983, 1988, 2011, 2021) and throughout the year rainfall remained close to or lower than the previous minimum records (1991-2020), particularly from July to mid-August and in the month of November. The lack of rainfall and the consequent water criticalities that characterized 2021 and 2022 worsened further in 2023, so much so that the Emilia-Romagna Region extended the control room activated



following the declaration of the state of emergency to 31 December 2023 for the drought and the national government approved a Legislative Decree no. 39 (14 April 2023) which introduced urgent provisions for the prevention and fight against drought and for the strengthening and adaptation of water infrastructure.

As regards temperatures, the signals are equally clear, the 2023 meteorological autumn in Emilia-Romagna was the warmest since 1961 and in the September - October - November quarter, the average and maximum temperatures recorded record values. The average regional temperature, in fact, with a value of 15.82 °C, was +2.3 °C higher than the average for the thirty-year period 1991-2020<sup>1</sup>.

<b>Autumn 2023</b>	<b>Tmed (°C)</b>	<b>Tmax (°C)</b>	<b>Tmin (°C)</b>
<b>September</b>	20.76	26.7	14.83
Climate 1991-2020	18.54	23.90	13.19
Delta	+2.2	+2.80	+1.64
<b>October</b>	17.4	22.4	12.4
Climate 1991-2020	13.67	17.91	9.42
Delta	+3.77	+4.52	+3.00
<b>November</b>	9.2	13.7	4.7
Climate 1991-2020	8.35	11.72	4.98
Delta	+0.86	+1.95	-0.24

*Figure 1: Monthly average, maximum and minimum regional temperatures for autumn 2023, climate values (1991-2020) and corresponding anomalies*

From a hydraulic and hydrogeological point of view, a dramatic representation of the effects of ongoing climate change can be traced back to the intense, extensive and persistent meteorological events of 1-4 and 16-18 May 2023 which affected a large portion of the Region Emilia-Romagna, generating floods, floodings and landslides.

In fact, the flooding of numerous watercourses occurred, producing a total flood volume estimated at approximately 350 million m<sup>3</sup> which caused the flooding of a vast area of the plain, covering approximately 540 km<sup>2</sup>; in the hilly and Apennine areas of Bologna, Ravenna and Forlì, a total of 65,598 landslides occurred, covering a total area of 72.21 km<sup>2</sup>. These events caused the isolation of some localities, the evacuation of numerous families from their homes, serious damage to road infrastructures, agricultural companies, public and private buildings, hydraulic defense works and the network of essential services (Source: Report of the Technical-Scientific Commission; <https://www.regione.emilia-romagna.it/alluvione>)

In the Municipality of Bologna area these events generated significant flooding in the urban area and the activation of over 200 landslides in its hilly territory, for a surface area affected by the disasters amounting to approximately 200,000 m<sup>2</sup>.

Also following what has happened in the last period, from a recent survey commissioned by the Municipality of Bologna on the quality of life of the citizens of the Metropolitan City of Bologna, carried out in September 2023 on a stratified sample of the municipal population, it emerged that the most of the sample perceived an increase in extreme climatic phenomena in recent years and in particular: increase in average temperatures (76.7%), increase in the number of very hot nights (74.5%),

<sup>1</sup> Source ARPAE: <https://www.arpae.it/it/notizie/autunno-2023-record>



increase in the frequency of extreme precipitation (66%). 86.1% of the sample of the Bolognese population also believes that climate change represents a global emergency, 75% that it is a direct consequence of human activities and 66% that it also depends on lifestyle and individual consumption habits.

It is also due to this increasingly widespread awareness and the growing consensus of the Bolognese citizens with respect to the objective of reducing emissions to zero, that the Municipality of Bologna has a strong mandate to join the "Intelligent Cities and Zero Climate Impact Mission" and commit to continue and accelerate the path already undertaken to reduce climate-changing gasses within a broader strategy aimed at improving the sustainability of the territory, the protection of nature and ecosystems, the healthiness and well-being of the population of all ages.

In addition to the macro objective of reducing emissions of climate-altering gasses and building a perspective of climate neutrality by 2030, the Municipality of Bologna intends to address further important issues strongly related to the objective of the Mission:

- counteract the negative effects of climate change;
- increase the city's energy autonomy, focusing on widespread local energy production from renewable sources, thus creating a clean and resilient energy system for the prosperity and well-being of the city;
- fight new forms of poverty and pursue a just energy and ecological transition.

### 1.3 Strategic directions for the local climate transition

**Considering the objectives and the starting conditions of the City, this Plan was built following 6 fundamental strategic guidelines described below.**

1. Increase local energy production from renewable sources (zero km renewable energy): starting from a rapid diffusion of technologies already available today being economically sustainable and also inclusive, for a city population that must be an active protagonist. Electricity produced from renewable sources will be fundamental for decarbonisation in all sectors - buildings, transport and production activities - and will also be fundamental for producing "green" renewable gasses such as hydrogen and synthetic methane. The increase in local energy production from renewable sources is also pursued:

- working on regulatory innovation, essential to direct consumption and investments towards renewable sources and more efficient technologies. Innovation that must concern national laws but also the planning and regulatory tools of all institutional levels: municipal, regional and national (starting from the Integrated National Energy and Climate Plan - INECP and National Plan for Adaptation to Climate Change - NPACC);
- welcoming the opportunities of technological innovation in photovoltaic, agrivoltaic, hydrogen, hydroelectric, geothermal, etc.;
- promoting market innovations, communicating in particular with energy market players;
- through the redevelopment of the building stock (public and private) and the creation of Positive Energy Districts (PED), taking full advantage of the opportunities offered by particular financing and extraordinary tax deductions to redevelop the building envelopes from an energy point of view, while at the same time spreading the installation integrated into buildings of energy production systems from renewable sources and encouraging their wider sharing, through models such as individual self-consumption of "remote" renewable sources (AID),



groups of self-consumers of renewable energy who act collectively (AUC) and Renewable Energy Communities (REC).

- encouraging the adaptation of electricity networks through dialogue with infrastructure managers; because infrastructure and enabling technologies are essential for the transformation of the energy system.

2. Accelerate the reduction of energy needs: consuming less and more efficiently, especially in buildings, also promoting the spread of virtuous behaviours. This action is part of the broader one which for Bologna orients all the sectors of Efficiency, understood as the reduction of inputs (materials, energy, water, etc.) and outputs (waste, wastewater, emissions) and Circularity, promoting closed, generative and regenerative systems of resources.

3. Electrify consumption, in transport and buildings: orienting consumption towards electricity produced from renewable sources. Electrification is a fundamental tool applicable to all sectors and fields of the economy to reduce emissions, considering that it is electricity that has - and will have for the next few years - the greatest possibilities and opportunities for decarbonisation.

4. Widely recover natural performance, even on buildings, starting from the greening of the urban environment, its cooling, also increasing drainage and albedo: local norms and rules are needed that are capable of responding to the multiple demands for regulation and mitigation that expresses the city, starting from sustainable urban drainage techniques (Sustainable Drainage Systems - SuDS), nature-based solutions (NBS) increase in urban phytomass.

5. Create positive relationships, strong and quality partnerships: partnerships between different institutional levels, companies, trade associations, professional associations, investors, the world of education, research and professional training are essential for the path towards climate neutrality; for this reason it is necessary to abandon compartmentalised or overly sectoral approaches in favour of coordinated and systemic actions.

6. Strengthen the involvement, training and information of citizens on climate and energy issues: because the transition towards carbon neutrality cannot be achieved without the support and constant participation of citizens. This transition is capable of bringing benefits to all citizens but implies numerous changes in people's lifestyles, habits and behaviours, such as travel modes, individual choices on purchases (e.g. electric vehicles, efficient household appliances, contracts of green energy certified at the origin etc.), heating and cooking methods etc.

#### 1.4 The 2030 climate neutrality objective

Today, achieving climate neutrality cannot be considered just an environmental objective, but is also a social, economic and political need; it is these same climate, energy, social and geopolitical needs that have pushed Bologna Municipality administration not only towards an ecological and energy "transition", but also to undertake a systemic change consistent with the objectives of the Mission.

The increase in intensity and frequency of extreme climatic events, the spread of new forms of poverty (starting from energy poverty), the health problems linked to air quality and an atmosphere in which the pollutants produced by different forms of combustion, conflicts and geopolitical and economic instability linked to fossil fuels are all factors that require cities to search for rapid, effective and



concretely implementable actions and solutions, as also publicly recalled by great personalities of our time, including which:

Pope Francis

*"...the development of policies has become urgent and urgent so that in the coming years the emission of carbon dioxide and other highly polluting gases must be drastically reduced, for example, by replacing fossil fuels and developing renewable energy sources".*

António Guterres, Secretary General of the United Nations (UN)

*"the use of renewable energy is the only way to avoid a climate catastrophe and thus guarantee a future on planet Earth for the next generations".*

Ursula von der Leyen

*"We need to advance the strategy on renewables [...] There are those who say that in this security context we need to slow down the green transition, but this is precisely the right time to accelerate on renewables, which guarantee us independence from fossil fuels, they are more cost-effective and cleaner. Climate change will not wait for the war to end."*

Cities must therefore rapidly transform from centres of maximum consumption and generation of output (emissions, waste, wastewater) into centres of production (starting from energy from renewable sources) and circularity (recovery and reuse of material and water resources). This is possible and would allow us to consider urban centres not only as the areas most exposed to the negative pressure of climate change, but also as those places where it is possible to develop strategies, skills and resources to face and counteract the effects and causes of climate change.

Based on these premises, the **objectives of the 2030 Climate Neutrality Action Plan** are:

1. CLIMATIC – zero net GhG emissions in the City of Bologna by 2030.
2. RELATED TO THE URBAN ENVIRONMENT HEALTH - improve air quality and reduce the heat island effect.
3. SOCIO-ECONOMIC - greater energy autonomy through the local production of energy from renewable sources, also as a form of fighting energy poverty and increasing business competitiveness.
4. RELATED TO ADMINISTRATIVE IMPROVEMENT – transversality, efficiency, programming.

**The boundaries of the CCC for the city of Bologna is the administrative territory of the Municipality of Bologna;** there are no areas of exclusion, as proposed in the application.

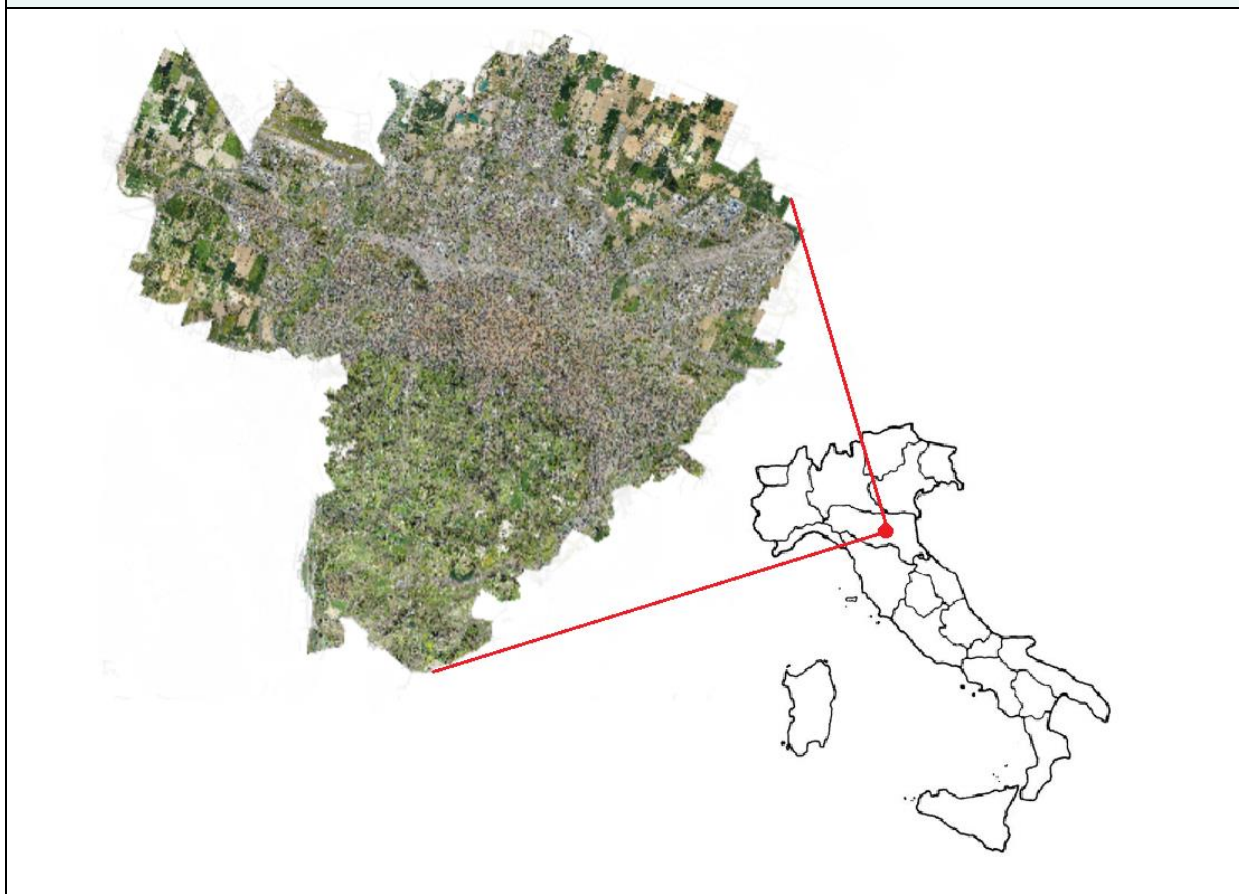
Table I-1.1 summarises the approach used and the inclusion, or otherwise, of Scope 1, Scope 2 and Scope 3 GHG emissions as per NZC guidelines.



**Table I-1.1: Climate Neutrality Target by 2030**

Sectors	Scope 1	Scope 2	Scope 3
<b>Stationary energy</b>	Included	Included	Not applicable
	No exclusions	No exclusions	Not applicable
<b>Transport</b>	Included	Included	Excluded as per NZC guidelines
	No exclusions	No exclusions	
<b>Waste/wastewater</b>	Included	Not applicable	Included
	No exclusions	Not applicable	No exclusions
<b>IPPU</b>	Included	Not applicable	Not applicable
	No exclusions	Not applicable	
<b>AFOLU</b>	Included	Not applicable	Not applicable
	No exclusions	Not applicable	
<b>Geographical boundary</b>	<b>Same as city administrative boundary</b>	<b>Smaller than city administrative boundary</b>	<b>Larger than city administrative boundary</b>
	X		

**Map**







## 2. Work process

### Work process

In order to develop the Climate City Contract (CCC), the Municipality of Bologna followed the Net Zero Cities (NZC) methodology whose main pillars are:

- Synergistic and systemic planning of actions;
- Strategic approach based on the Theory of Change;
- Activation of an inclusive ecosystem for change which includes: involvement of all structures and substructures of the Municipality, commitment to actions and investments by local actors; active involvement and participation of citizens; multilevel governance to support the Mission's objectives.

The integrated approach of this Action Plan, from the point of view of interaction between collected actions, highlighted barriers, multilevel governance and participatory models, has always been the basis of the activities. We acted in a constant and synergistic manner both within the Municipality and with external stakeholders and citizens, in order to undertake the path towards neutrality together. Trade associations, citizens, private individuals, institutions, etc. have been involved continuously and at various levels to jointly undertake the challenge of reducing emissions and share a common strategy for the city.

We worked in this way not only for the definition of the Action Plan, but for all sections of the Climate City Contract (Investment Plan and Commitment Document), thus coordinating the work and results in the three documents.

Schematically, the process that led to the co-design of the Portfolio of actions for climate neutrality and the Investment Plan included:

- The creation of the Transition Team for the coordination of the Mission;
- Continuous dialogue with the Mission partners already engaged in the application phase;
- The launch of the Mission through a public event;
- Expanding the audience of public and private partners through bilateral meetings;
- A series of focus groups and bilateral meetings with all sectors within the Municipality;
- Innovative governance actions internal and external to the Municipality, such as the Citizen Assembly for Climate;
- Social innovation activities and participatory paths with citizens;
- Working groups with subjects and institutions at regional, national and European level;
- Coordination with the national network of the 9 Italian cities involved in the Mission.

All of these processes are described in the Action Plan, Modules C-1 and C-2.

### The Climate Transition Map of the Municipality of Bologna

The image below presents the work phases planned and carried out by the Municipality of Bologna for the realisation of the path towards climate neutrality according to the NZC methodology<sup>2</sup>.

<sup>2</sup> <https://netzerocities.app/ClimateTransitionMap>

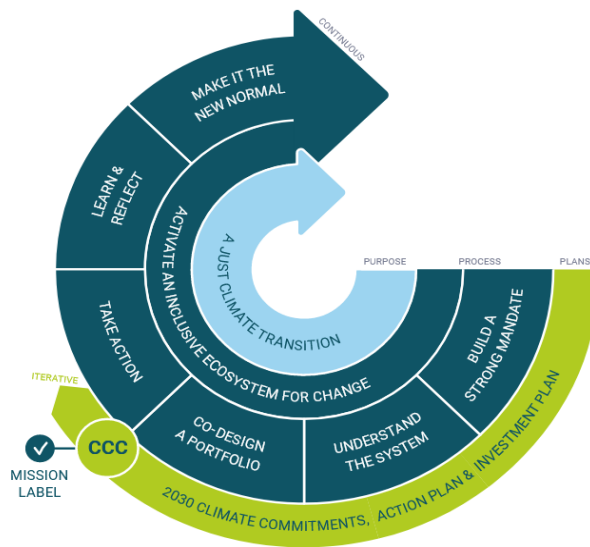


Figure 2: Climate Transition Map (Source: Net Zero Cities, Transition Team Playbook p.14)

For the construction of the CCC, two processes were activated in parallel: on the one hand the fundamental steps for the development of the Action Plan and the Investment Plan which provide for the construction of a solid mandate, understanding of the system, co-design of a portfolio of actions and investments; on the other, the activation of an ecosystem of actors for change. All with the aim of supporting and accelerating a fair and just climate transition. Following the approval of the CCC, the phases of implementation of the Plans, monitoring, learning and reflection, integration of the CCC as a new practice will follow, with a view to continuously improving the Plans and achieving the objective of neutrality.

### Building a solid mandate

To face the challenges of the Mission, the Municipality of Bologna considered it essential to build a strong and solid mandate, both within the Administration at a technical and political level, and externally, dedicating particular attention to the activation of an ecosystem local level of actors and citizens and the strengthening of relationships with institutions at different levels of government.

#### 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: Build a strong mandate

### The Transition Team

Following the approval of the candidacy for the Mission of the Municipality of Bologna, a specific mandate was given for the development of the Climate City Contract (CCC) and the related activities to the Deputy Mayor with responsibility for "International relations and cooperation, control room of



European funds, climate mission 2030: neutrality and transition; spokesperson for the restoration project and fundraising for Garisenda Tower and for Unesco porticoes".

A working group (Transition team) was therefore established, coordinated by the Deputy Mayor, for managing the Mission and the CCC process. The team is made up of representatives of the Municipality supported by two external parties (see Figure 1), in particular:

- **Inside the Municipality of Bologna, several persons from the political, strategic and technical-operational level are directly involved to support the various sectors of the municipal administration in order to guarantee effective climate action:**
  - the Deputy mayor with responsibility for the Mission, who also coordinates the Network of the nine Italian cities of the Mission;
  - the Responsible for Strategic Urban Projects in the Chief Administrative Office ("DG" in the next Figure);
  - the Ecological Transition and Climate Office Sector ("TEUC" in the next figure), in which a new resource dedicated full-time to supporting the Mission and the Citizen Assembly for the climate has been inserted;
  - the European and International Sector ("EU" in the next Figure).
- **Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi** ("FIU" in the next Figure) is present in the Transition Team with various resources and has an active role in planning citizen participation processes and broader involvement of the city in the Climate Mission. The Foundation as it is now, has just been established by merging three pre-existing Foundations that have been operating in the area for several years. This new Foundation proposes itself as a subject of impulse and experimentation on an urban scale for a fairer, more sustainable, more innovative city which makes "shared administration" an organisational model of transversal work. To achieve all this, it proposes projects in 5 main areas: public space, nature, digital democracy, administrative and social innovation and ecological and climate regeneration.
- **The Agency for Energy and Sustainable Development (AESS)** is present in the Transition Team with various strategic and operational level resources and plays a technical-scientific role in supporting the interaction within the Mission partners and the development of the CCC. It is an association of local authorities and other public bodies, part of the European Network of Energy Agencies and the Italian Network of Energy Agencies (RENAEL), which provides services in the fields of efficiency in the use of energy resources, energy saving, the use of renewable energy sources and sustainable development.

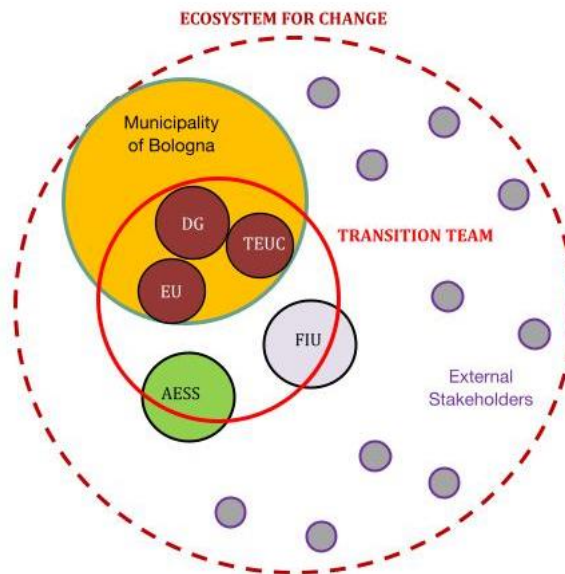


Figure 4: Illustrative figure of the Transition Team activated by the Municipality of Bologna for the Mission

#### Activating an inclusive ecosystem for change

The Transition team worked in parallel on three synergistic and complementary processes in order to activate the most inclusive ecosystem possible to support the Mission (ref. Fig 5)<sup>3</sup>:

1. the **internal process**: in order to involve all the Departments and Sectors of the Municipality and the City Council in the Mission, overcoming the "silos" logic, the Transition Team conducted:
  - interviews and questionnaires with the municipal sectors that had already contributed to the application phase, in order to update the actions and projects underway;
  - specific internal focus groups carried out between 2022 and the first months of 2023, in which around 50 employees from all sectors of the Municipality of Bologna were involved, identifying opportunities and barriers with respect to neutrality and synergistic actions. A specific focus group was dedicated to the political representatives of the Municipal Council to raise their awareness of the transversality necessary to achieve the objectives of the Mission and bring out synergies between the different sectoral policies;
  - continuous dialogue with the different Sectors for the co-creation of the portfolio of actions.

The process of building internal governance can be further strengthened by the "Let's GOV-GOverning the Transition through pilot actions" pilot project, financed by Net Zero Cities and active from the 1st of June 2023 to the 31st of May 2025.

2. The **external process**: at a local level, to involve the entire city in the construction and continuous updating of the CCC, and at a supra-local level to strengthen the dialogue with the institutions at different levels. In summary, this process involved:

#### At the local level:

- the launch of the Mission on 19 December 2022 with an event by invitation and open to citizens in which the "Missione Clima" of the City of Bologna was presented. More



than fifty local entities were invited to the event and around a hundred people participated;

- one to one meetings: to explore the actions and investments proposed by individual partners and engage new partners in the Mission and in the co-creation of the portfolio of actions;
- the “vision” and “call to action” path: a broader path of discussion with the city to build together the vision of Bologna as a “neutral city” and therefore collect further proposals and projects from the entire territory.

**At a supra-local level:**

- Multi-level governance: the Transition Team also works continuously to strengthen dialogue and collaboration with bodies and institutions at higher levels, which are fundamental for overcoming existing barriers independent of the local context. On multilevel governance, the Transition Team works through:
- The network of the 9 Italian cities of the Mission, coordinated by the Municipality of Bologna; the working group is active not only in the exchange of good practices, opportunities and barriers relating to the Mission, but also at a strategic and political level of dialogue with the national Ministries, for regulatory innovation to support the transition towards neutrality.
- 1:1 dialogue activated with individual subjects relevant to the “Bologna Missione Clima”, such as the Emilia-Romagna Region, ANCI Emilia-Romagna (the regional level of the National association of Municipalities), the energy distributors operating in the local area, with whom dialogue have started for the transition towards electrification.

The Let'sGOv (NetZeroCities pilot programme) pilot project will also strengthen cooperative work between cities and consolidate multilevel governance efforts.

3. **Citizens**: in order to involve citizens in the development of local climate policies and to support them in the climate and energy transition, the Municipality of Bologna has activated the following tools:
  - the Citizen's Assembly for climate: an innovative instrument of participatory democracy, established in 2021 by the Municipality of Bologna, the Citizen's Assembly is made up of a random sample of citizens and city users. The first assembly, held during 2023, contributed to the definition of proposals addressed to the City Council to address the challenges of climate change in Bologna, included in this Action Plan (Annex 1);
  - the Energy Help Desk (Sportello energia): established in March 2023 as an action of “Bologna Missione Clima”, structured with a dedicated web page, telephone line and email, it is the tool aimed at all citizens for in-depth information on the topics of sustainable energy and energy efficiency;
  - the Energy and Environment Showroom: a further information and training tool on climate, energy and environmental issues, aimed at the school target thanks to training courses for local schools.

Next figure summarises the processes listed above.

---

<sup>3</sup> See Modulo C1 for more details of these processes.

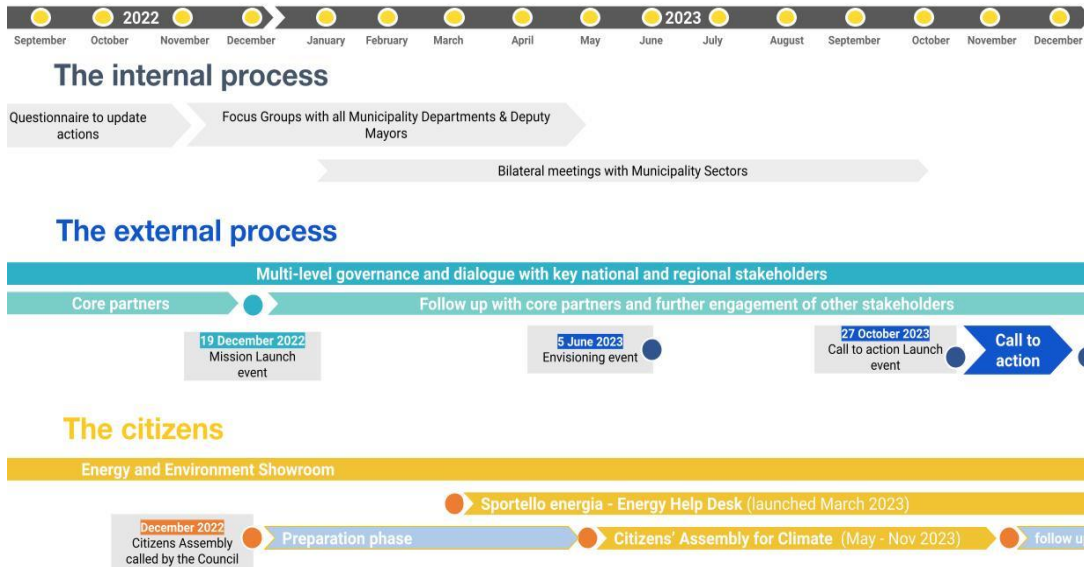


Figure 5: Processes activated within the Bologna Climate Mission for the construction of the ecosystem for change

### Understanding the system

The starting point for the "understanding of the system" has been the analysis of the emissions inventory of the City of Bologna, starting from the work carried out in the Action Plan for Sustainable Energy and Climate (SECAP) and its monitoring, carried out during 2023, the identification of the reference baseline for the CCC according to the methodology indicated by Net Zero Cities, as well as the sectors on which to focus most for neutrality.

The work of collecting actions and identifying strategies was therefore carried out continuously and in full synergy with internal and external stakeholders.

The barriers, opportunities and levers of change were identified together with internal and external actors, through focus groups (within the Municipality) and specific events involving the city and its actors (ref. Module C2).

Based on the emission gaps identified, possible strategies and models for future scenarios were then analysed.

### Understand the system through



Figure 6: Understand the system



### Co-creation of the portfolio of actions

Thanks to the involvement of the entire ecosystem presented above, the portfolio of actions was co-created also from the point of view of economic and financial analysis. The short, medium and long-term effects and their related indicators are associated with the actions, giving a clear vision of the impacts and possible co-benefits associated with the actions themselves. The search for financing opportunities and/or innovative solutions, from a financial, technological or social point of view, is part of the co-creation of the portfolio of actions of the Bologna Missione Clima, as is the analysis of action synergies or possible trade-off between different sectors and through the levers of change.

### Co-create a portfolio

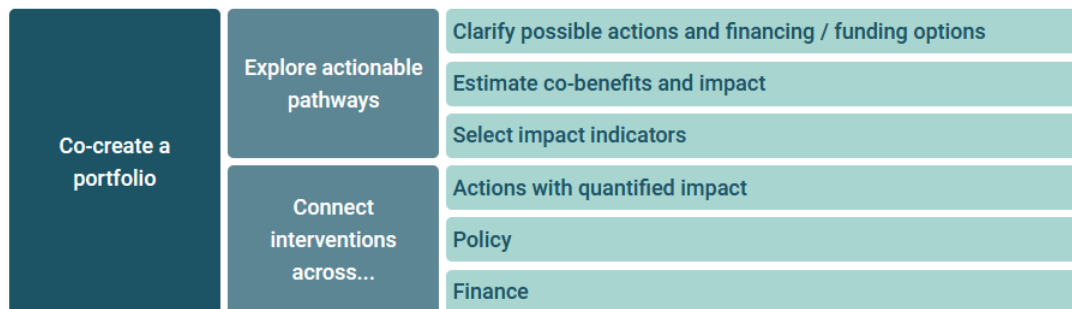


Figure 7: Co-create a portfolio

### Implementation, monitoring and learning, integration as a new practice

Each actor signing the CCC undertakes to implement the actions signed in the Commitment Document and therefore included in the Action Plan. Following the approval of the CCC by the European Commission, the monitoring of the actions and indicators will make it possible to analyse the impacts and results achieved, to identify any need to adapt impact paths or modify ongoing actions. The continuous process of integrating new partners and the progressive increase of efforts will allow the implementation and continuous improvement of the CCC to achieve the objective of neutrality, based on the strategies identified in this Action Plan and their possible improvement. All ongoing processes will tend towards the expansion and consolidation of the ecosystem of actors and towards an increasingly systemic and structured innovation action, both at a local and multilevel level, to achieve the objective.



## 3. Part A – Current State of Climate Action

### 3.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory

The emissions inventory of the Municipality of Bologna referring to 2018 represents the so-called "baseline" of reference for this Climate City Contract. The emissions inventory allows the overall emissions of the entire municipal territory to be quantified in terms of tCO<sub>2</sub> equivalents and is organised by emission sectors and by energy source responsible for the emissions themselves. The emissions inventory therefore constitutes a systematic framework that allows the emission framework of the territory to be represented in a comprehensive way.

The Municipal Administration has joined the European Covenant of Mayors since 2008 and has developed an emissions inventory based on its methodology since 2012, which has been periodically updated. The latest inventory refers to the year 2018 and is an integral part of the Sustainable Energy and Climate Action Plan (SECAP) of the Municipality of Bologna, drawn up in 2021 by the Environment and Energy Sector of the Municipality of Bologna and approved by City Council on 12.04.2021.

To define the baseline of the Climate City Contract (CCC), the 2018 SECAP inventory was used (calculated by applying the methodology defined at European level by the Covenant of Mayors) making some changes and adjustments in order to make it consistent with the methodology specifically developed for the "100 Cities Mission" by Net Zero Cities, as described within the "Infokit for Cities".

In particular, the final energy consumption in MWh relating to these sectors was used:

1. Residential buildings and equipment,
2. Tertiary sector buildings and equipment (including consumption of public buildings and public lighting),
3. Agricultural buildings and equipment,
4. Industrial buildings and equipment,
5. Private transport,
6. Local Public Transport,
7. Municipal fleet.

The first change introduced is related to the emission factors applied, i.e. the quantity of CO<sub>2</sub> emissions related to the unit of consumption or activity source.

In order to calculate the emissions in the CCC, different emission factors were applied compared to those used in the SECAP, in such a way as to also take into consideration the emission contribution of additional GhGs in addition to CO<sub>2</sub>. If the emission factors of the standard IPCC approach (CO<sub>2</sub> emission only) were applied in the SECAP, the emission factors of the IPCC GHG approach in terms of tons of CO<sub>2</sub> equivalent (tCO<sub>2</sub>eq) were applied to calculate the CCC baseline. These technical considerations refer to the methodological framework developed in 2006 by the IPCC in order to create common methods for estimating GhG emissions. This means that, despite starting from the same initial final energy consumption values, different overall emissions are obtained.

The second difference between the SECAP baseline and the CCC baseline is the inclusions of additional sectors compared to the SECAP. This integration is necessary as it is explicitly requested within the "100 Climate Neutral Cities Mission".





The additional sectors are the following:

1. **Agricultural, forestry and other land use sector** (AFOLU), which calculates the emissions directly released into the atmosphere and not connected to final energy consumption, relating to the agricultural sector (e.g. manure management, use of fertilisers, spillage of slurry of zootechnical origin, etc.) and changes in the destination of land use.
2. **Waste Sector**, which calculates emissions from final energy consumption derived from plants operation and for the collection and movement of waste (transport fuel). The emissions directly released into the atmosphere linked to the management of municipal solid waste and special waste have not been considered here in order to avoid double counting; the waste-to-energy plant in Via del Frullo in Granarolo where this waste is conveyed, in fact, produces heat and electricity which are already accounted for in the "Buildings" sector. This methodology is consistent with the indications provided by the JRC as part of the Covenant of Mayors initiative.

The Industrial Processes and Product Use (IPPU) sector, which includes greenhouse gas emissions deriving from industrial activities that produce emissions not resulting from energy consumption and the use of specific products, is considered irrelevant for the purposes of this baseline given the small number of industries within the municipal administrative borders.

It should be noted that the "Buildings" sector includes emissions relating to what is technically defined as "Stationary Energy", i.e. emissions from final energy consumption, excluding waste and transport which are allocated to their specific sectors.

Below are the emissions organised according to the model provided by the Net Zero Cities consortium which reports the sectors in rows and the reference energy vector organised in the three Scopes in columns. The meaning of these categories is linked to the geographical area of origin of the emissions:

- Scope 1: emissions generated by combustion processes or emissions of GhGs emitted within the boundaries of the system under analysis, in our case within the municipal boundaries.
- Scope 2: emissions generated by consumption of energy distributed through networks (e.g. electricity and district heating) which take place within the Municipality, for which the process of energy production takes place outside the boundaries of the system (e.g. thermoelectric power plant which produces electricity).
- Scope 3: emissions generated outside the municipal boundaries but linked to processes that take place within the municipal boundaries (e.g. production of waste/wastewater produced within the municipal boundaries which is sent to waste-to-energy/treatment located in another Municipality).



### A-1.1: Final energy use by source sectors

Base year	2018											
Unit of measure	MWh/year											
	SCOPE 1									SCOPE 2	SCOPE 3	TOTAL
<b>Buildings</b>	<b>3,518,907.40</b>	<b>191,248.20</b>	<b>85,581.84</b>	<b>7,621.20</b>	<b>39,748.09</b>	-	<b>4,838.94</b>	-	-	<b>1,510,823.23</b>	-	<b>5,358,768.90</b>
Fuel/energy carrier used	Methane	Heat from TLR	LPG	Burning oil	Diesel	Gas	Solar thermal	Biomass	Biofuels	Electric energy	-	-
<b>Transport</b>	<b>136,622.17</b>	-	<b>45,356.08</b>	-	<b>680,556.82</b>	<b>382,750.82</b>	-	-	<b>70,179.80</b>	<b>3,434.86</b>	-	<b>1,318,900.55</b>
Fuel/energy carrier used	Methane	Heat from TLR	LPG	Burning oil	Diesel	Gas	Solar thermal	Biomass	Biofuels	Electric energy	-	-
<b>Waste</b>	-	-	-	-	<b>16,381.68</b>	-	-	-	-	-	-	<b>16,381.68</b>
Fuel/energy carrier used	Methane	Heat from TLR	LPG	Burning oil	Diesel	Gas	Solar thermal	Biomass	Biofuels	Electric energy	-	-
<b>IPPU Industrial Processes and Product Use</b>	-	-	-	-	-	-	-	-	-	-	-	-
Fuel/energy carrier used	Methane	Heat from TLR	LPG	Burning oil	Diesel	Gas	Solar thermal	Biomass	Biofuels	Electric energy	-	-
<b>AFOLU Agriculture, Forestry and Other Land Uses</b>	-	-	-	-	-	-	-	-	-	-	-	-
Fuel/energy carrier used	Methane	Heat from TLR	LPG	Burning oil	Diesel	Gas	Solar thermal	-	Biofuels	Electric energy	-	-



### A-1.2: Emission factors applied

For the calculation in tons or MWh of primary energy

**Method used: IPCC**

Primary energy/energy source	Carbon dioxide (tCO <sub>2</sub> eq)	Methane (CH <sub>4</sub> )	Nitrous oxide (N <sub>2</sub> O)	F-gases (hydrofluorocarbons and perfluorocarbons)	Sulphur hexafluoride (SF <sub>6</sub> )	Nitrogen trifluoride (NF <sub>3</sub> )
Electricity [MWh]	0.296					
Methane gas [MWh]	0.202					
Diesel [MWh]	0.268					
Diesel fuel* [MWh]	0.276					
Petrol [MWh]	0.250					
Automotive petrol* [MWh]	0.2575					
LPG [MWh]	0.227					
Heat from DH [MWh]	0.196					
Combustion oil [MWh]	0.268					
Biomass [MWh]	0.018					
Solar thermal [MWh]	0					
Biofuels [MWh]	0					
CH <sub>4</sub> [tons]	27.2					
N <sub>2</sub> O[ton]	272.9					

\*As indicated by the JRC guidelines as part of the Covenant of Mayors, for transport diesel and petrol the emission factors are to be considered increased by 3% compared to those used for stationary energy.

### A-1.3: Activity by source sector

Base year	2018						
Unit of measure	tCO <sub>2</sub> eq/year						
	SCOPE 1			SCOPE 2			TOTAL
<b>Buildings</b>	462,548.51	272,126.60	45,661.00	127,748.23	245,690.12	73,905.09	<b>1,227,679.54</b>
Activity	Residential	Tertiary including municipal	Industry and agriculture	Residential	Tertiary including municipal	Industry and agriculture	-



<b>Transport</b>	306,287.75	18,024.99	-	36.59	980.45		<b>325,329.79</b>
Activity	Private transport	Local public transport	-	Private transport	Local public transport-	-	-
<b>Waste</b>	4522.0	-	-	-	-	-	<b>4,522.0</b>
Activity	Waste transportation	-	-	-	-	-	-
<b>IPPU Industrial Processes and Product Use</b>	-	-	-	-	-	-	-
Activity	-	-	-	-	-	-	-
<b>AFOLU Agriculture, Forestry and Other Land Use</b>	15,261	24.03	-	-	-	-	<b>15,285.03</b>
Activity	Direct and indirect N2O emissions from fertilisers from soil	CO2 from UREA	-	-	-	-	-

<b>A-1.4: GhG emissions by source sectors</b>				
Base year	<b>2018</b>			
Unit of measure	<b>tCO<sub>2</sub> eq/year</b>			
	<b>Scope 1</b>	<b>Scope 2</b>	<b>Scope 3</b>	<b>Total</b>
<b>BUILDINGS</b>	780,336.10	447,343.44	-	1,227,679.54
<b>TRANSPORT</b>	324,312.74	1,017.04	-	325,329.79
<b>WASTE</b>	4,522.0	-	-	4,522.0
<b>IPPU Industrial Processes and Product Use</b>	-	-	-	-
<b>AFOLU AGRICULTURE, FORESTS AND OTHER LAND USES</b>	15,285.03	-	-	15,285.03
<b>Total</b>	<b>1,124,431.85</b>	<b>448,360.47</b>	<b>-</b>	<b>1,572,816.35</b>

**A-1.5 GhG Emissions Baseline inventory - Graphs and diagrams**

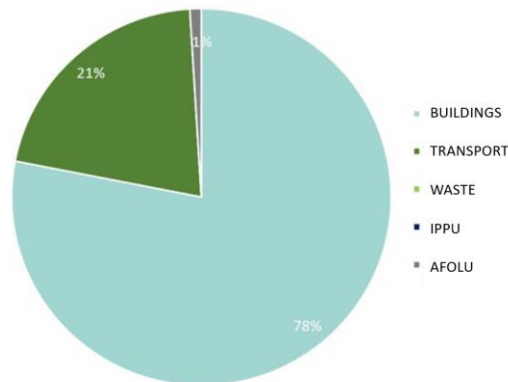


Figure 8: Breakdown of emissions in 2018 by sectors

The graph above shows how the majority of emissions in the Municipality of Bologna (78%) are linked to the "Buildings" sector. This includes emissions due to final energy consumption that occurs during the use of the building stock and the respective equipment within the municipal area of Bologna. 21% of emissions are linked to vehicular traffic. The Agriculture, Forestry and Other Land Use sector, which includes emissions not linked to the sector's energy consumption, is responsible for only around 1% of total emissions.

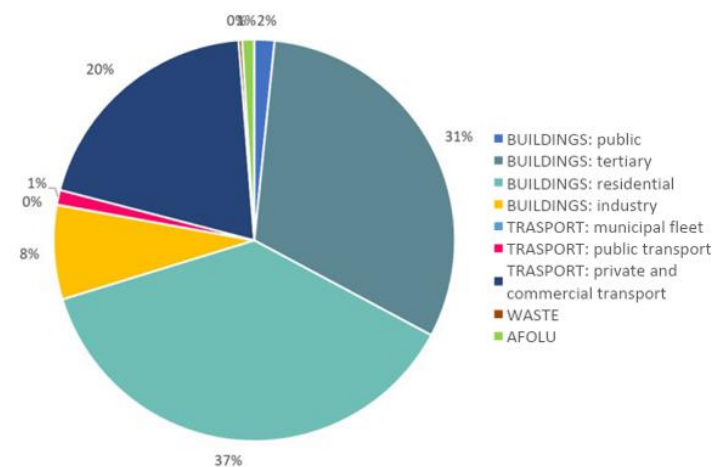


Figure 9: Breakdown of emissions in 2018 by sector and subsector [tCO<sub>2</sub>eq]

Figure 9 further details the emission breakdown. In particular, the "Buildings" sector is divided into the SECAP emission subsectors: residential, tertiary, industry, agriculture and municipal buildings and equipment. A picture emerges in which final energy consumption in the residential and tertiary sectors is substantially equivalent, responsible respectively for the 31% and the 37% of total emissions. Transport represents the third most important subsector, responsible for 20% of emissions.

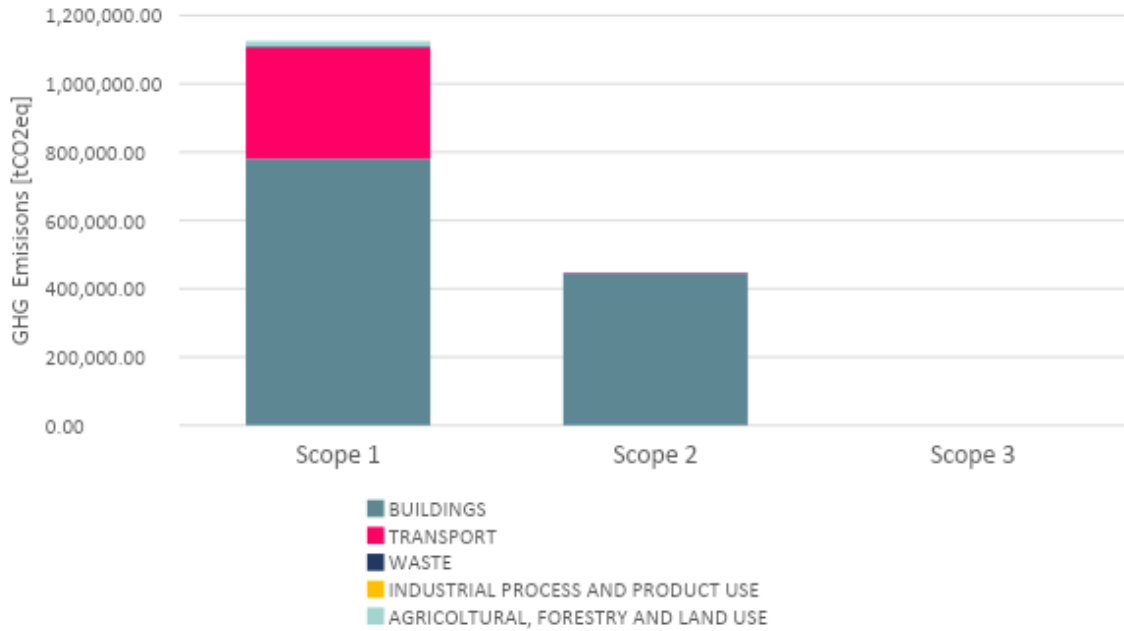


Figure 10: Breakdown of 2018 emissions by scope and sector

The histogram in Figure 10 highlights how the majority of emissions are attributable to Scope 1, which also includes the entire emissions of the transport sector. At the current state of the analysis there are no emissions to scope 3.

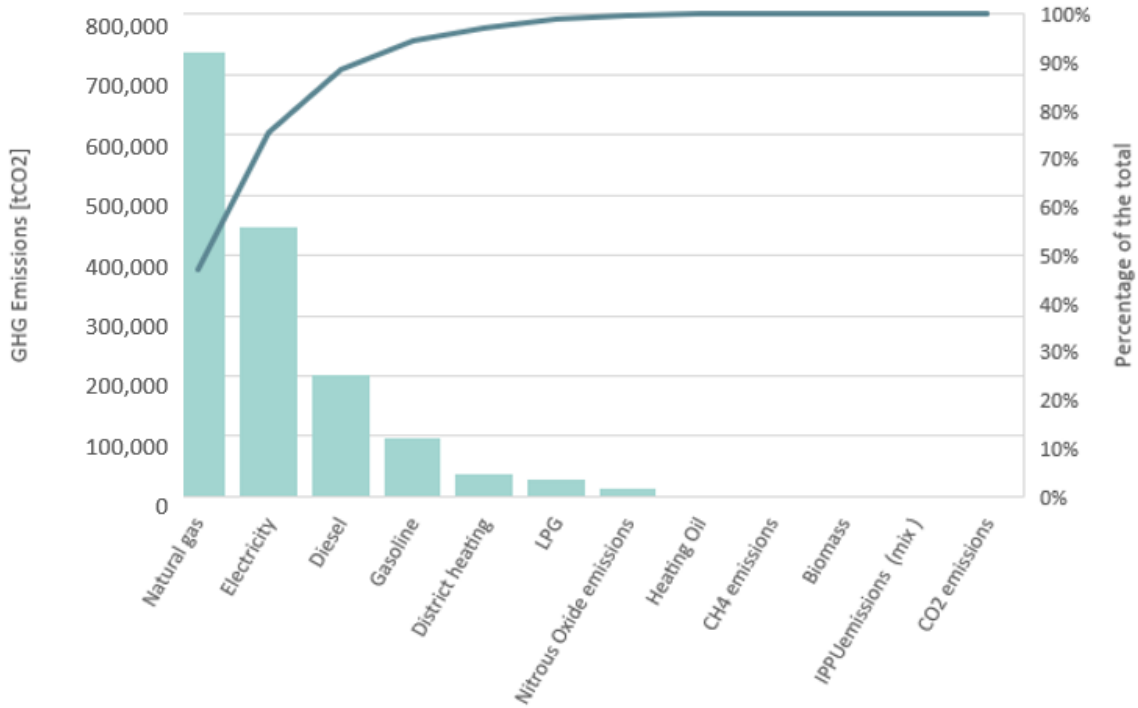


Figure 11: Breakdown of 2018 emissions by energy carriers/emission gas



Figure 11 shows the emissions in the Municipality of Bologna divided by emission source: the two main sources are the consumption of methane gas and electricity. Thanks to the Pareto curve, shown in the graph, it can easily be deduced that these two energy vectors produce 80% of the total emissions.

### A-1.6: Description and analysis of the GhG baseline

The baseline above is largely derived from the data reported in the SECAP of the Municipality of Bologna drawn up by the Environment and Energy Sector (now Ecological Transition and Climate Office Sector - "TEUC") of the Municipality in 2021. To integrate the SECAP template, the AFOLU part was developed in order to complete the emission framework in accordance with the indications of NZC "Infokit for cities".

#### Baseline results

The baseline of the Bologna CCC in 2018 was quantified as 1,572,816 tCO<sub>2</sub> eq. The overall picture presents the majority of emissions, approximately 78%, in Scope 1 with emissions generated directly within municipal boundaries. Scope 2 instead covers 21% of emissions and is populated solely by the final uses of electricity. Concerning the sectors, the majority of emissions (approximately 1,227,680 tCO<sub>2</sub>eq) are included in the Buildings sector. This effectively corresponds to the Stationary Energy sector, which together with the Transport sector covers the emissions of the SECAP 2018 inventory.

In the Buildings sector, most emissions are attributable to the residential sector and the tertiary sector.

Secondly in the Transport sector; Private transport is responsible for approximately 310,846 tCO<sub>2</sub> eq, equal to approximately 20% of total emissions. The AFOLU sector is residual, in line with the vocation of the City of Bologna which is more linked to residential and services. As regards the Waste sector, the emissions calculated are very low, as the waste-to-energy plant produces electricity and heat, which are in all respects effective decarbonisation measures.

BASELINE - EMISSION 2018	tCO <sub>2</sub> eq	%
BUILDINGS: public	25,563	2%
BUILDINGS: tertiary	492,253	31%
BUILDINGS: residential	590,297	38%
BUILDINGS: industry	119,566	8%
<b>BUILDINGS</b>	<b>1,227,680</b>	<b>78%</b>
TRANSPORT: municipal fleet	323	0%
TRANSPORT: public transport	14,161	1%
TRANSPORT: private and commercial transport	310,846	20%
<b>TRANSPORT</b>	<b>325,330</b>	<b>21%</b>
WASTE	4,522	0%
IPPU	-	0%
AFOLU	15,285	1%
<b>TOTALE</b>	<b>1,572,816</b>	<b>100%</b>

Figure 12: CCC emission baseline

Concerning the final use of energy, the consumption data in MWh contained in the 2018 emissions inventory developed within the SECAP was used; however, for the construction of the CCC baseline it was necessary



to make some changes in order to comply with the methodological indications contained in the "Infokit for Cities" guideline. The differences between the SECAP baseline and the CCC baseline are as follows:

1. IPCC emission factors (in tCO<sub>2</sub> eq/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 SECAP methodology and related monitoring instead referred to the emission factors relating to the standard IPCC for CO<sub>2</sub> only.
2. For electricity consumption, the national emission factor in 2018 was used, equal to 0.296 tCO<sub>2</sub> eq/MWh (source National and European Emission Factors for Electricity Consumption NEEFE, jrc-com-neeef\_1990-2020); in the SECAP, instead, in accordance with the methodology proposed by the COMo, the emission factor used was equal to 0.46290 tCO<sub>2</sub>/MWh, obtained as a recalculation of the national emission factor 0.483 of 2005 (SECAP baseline) taking into account the local electricity production.
3. As already indicated in the introduction, the AFOLU sector (see calculation details reported below) and the Waste sector have been added. The IPPU sector is considered irrelevant for the purposes of this baseline given the small number of industries within the municipal border.

### Calculation of the AFOLU sector

In the Municipality of Bologna the agricultural sector is very limited, both in terms of cultivation and livestock.

In particular, animal husbandry has an extremely limited weight. The offices of the Agriculture Sector of the Emilia-Romagna Region provided the livestock numbers as of 12/31/2022, which in fact amounted to only 55 cattle. There are no elements to think the situation might have been significantly different in 2018. Below is a descriptive table. For this reason, it has been considered as a residual and negligible sector for the City of Bologna.

LIVESTOCK at 31/12/2022	
CATTLE	NUMBER
Beef cattle	14
Dairy cattle	0
Mixed	41
<b>TOTAL</b>	<b>55</b>
SWINE	
None inside the municipality	
POULTRY	
None inside the municipality	

*Figure 13: Livestock population in the municipality of Bologna as of 31 December 2022*

For this reason, it has been considered as a residual and negligible sector for the City of Bologna.

Regarding agricultural crops, it was decided to calculate the emissions of this sector with simplified calculations, maintaining consistency with the reality of the territory considered. The calculation will however allow us to account for the sector, its possible evolutions and also provide elements for possible specific actions.

Thanks to the information provided by AGREA (the Regional Agency for Agriculture funding provision) it was possible to have the surface of land involved in cultivation processes in 2018. To calculate the impact of nitrogen emissions, we first proceeded to "clean up" the surfaces indicated by AGREA from those areas not strictly involved in cultivation, such as areas of ditches and canals, areas intended for agricultural artefacts and so on. A cultivated area of 2,850 hectares was thus obtained. For each land use type, a use of nitrogen fertiliser was attributed drawn from the literature for the main crops.





From this data it can be observed that over 90% of the surface is occupied by just 17 types of land use in which cereal crops represent 43 percentage points and alfalfa another 18 points.

CULTIVATION	hectares	% AREA
WHEAT	690.3	24.2%
ALFALFA	507.8	17.8%
WOOD	189.9	6.7%
SORGHUM	183.0	6.4%
BARLEY, BROAD BEANS, SEEDS, GRAINS	143.2	5.0%
MAIZE	119.9	4.2%
TREE PASTURE	117.7	4.1%
BEET	97.8	3.4%
POLIPHYTIC MEADOW	82.3	2.9%
SUNFLOWER, BEANS, SEEDS, GRAINS	78.3	2.7%
ARABLE	76.5	2.7%
GRASSLAND	68.3	2.4%
ARBOREAL CROPS	65.6	2.3%
PEA	56.3	2.0%
VINE, FOR WINE	45.4	1.6%
FULL-FIELD VEGETABLES	31.8	1.1%
CHICKPEAS and FAVE BEANS	29.0	1.0%
<b>TOTAL</b>	<b>2.583.0</b>	<b>90.6%</b>

*Figure 14: Overall extension of different crops in the municipality of Bologna*

The following table highlights the 11 crops which alone achieve 90% nitrogen fertiliser use. Also in this case the weight of cereal crops alone is highlighted, which reaches 63 percentage points of nitrogen use.

CULTIVATION	kg-N	% kg-N
GRAIN	113,898.5	42.6%
CORN	32,966.9	12.3%
ALFALFA	25,387.6	9.5%
SORGHUM	16,471.1	6.2%
BARLEY, BEANS, SEEDS, GRAINS	12,883.9	4.8%
BEET	9,776.0	3.7%
ARABLE PLANTS	7,653.4	2.9%
TREE CROPS	6,557.3	2.5%
PEA	5,629.6	2.1%
SUNFLOWER, BEANS, SEEDS, GRAINS	5,090.7	1.9%
VINE, FOR WINE	4,542.3	1.7%
<b>TOTAL</b>	<b>240,857.3</b>	<b>90%</b>

*Figure 15: Nitrogen content by cultivation type in the municipality of Bologna*

Overall, the impact of agricultural fertilisation leads to 267.53 tons of nitrogen.

Again, with regard to nitrogen emissions, the impact of manure spreading on land was calculated and thanks to the information provided by the office of the Agriculture Sector of the Emilia-Romagna Region, it emerges that 135 ha were involved for a total spreading of 23.9 tons of nitrogen.

15.261 tCO<sub>2</sub> were estimated in total between direct and indirect emissions.

In the agricultural sector, CO<sub>2</sub> emissions from the use of urea-based fertilisers were considered. In this case we made an estimate on data provided by ISTAT (National Institute of Statistics) 2019 at provincial level, calculating the urea fertilisation on the total nitrogen fertiliser used in the metropolitan area of Bologna and divided on the basis of the estimate obtained previously for the Municipality of Bologna. The percentage of urea on total nitrogen consumption was found to be 45%. The emission factor used (source IPCC 2006) is equal to 0.2 tons of carbon per ton of urea used, and is equivalent to the carbon content of urea. The estimate conservatively assumes the maximum emissions as it is possible that not all the CO<sub>2</sub> will be emitted into the atmosphere. Overall, 24 tons of CO<sub>2</sub>eq emitted directly into the atmosphere were estimated.



## 3.2 Module A-2 Current Policies and Strategies Assessment

In this Module an analysis of the main relevant policies and strategies at different levels is provided.

The chapter starts with the description of the main local policies and planning tools for climate change and also of some key Municipal regulations regarding air quality and climate change.

The chapter then provides a detailed assessment of the policy framework at the European (Table A-2.1a), national, regional, metropolitan and municipal level (Table A-2.1b), as well as of the most relevant legislation (Table A-2.1c). Each table highlights the relevance of the tools for the city's energy and climate transition path.

At the end of the mapping, the tools on which modification is deemed necessary in order to enable the achievement of climate neutrality by 2030 are then identified (Table A-2.1d). Where a modification action is already underway, the chapter of the Action Plan where it is described is indicated.

### Local policies and planning instruments for climate change

The path of the Municipality of Bologna in the implementation of policies aimed at confronting climate change, consistent with European, national and regional strategies, started in the 1990s with the first municipal energy plan which, following adherence to the Covenant of Mayors, was followed by the Sustainable Energy Action Plan (SEAP), approved in 2012. Subsequently, with the introduction in the Covenant of Mayors of Adaptation (Mayors Adapt), the Municipality drew up its own Adaptation Plan (BlueAp, 2015). The path then continued with the adherence in April 2019 to the new Covenant of Mayors for Energy and Climate, which required the updating of the Adaptation Plan and the SEAP and their integration into a single plan: the Sustainable Energy and Climate Action Plan (SECAP), approved in 2021. The Municipality's effort through these voluntary tools was accompanied by the process of remodulation of the key formal planning instruments started in 2018, which saw the integration into the General Urban Plan and the Building Regulations of the Municipality of Bologna, approved in September 2021 and currently under review, of important aspects aimed at strengthening the resilience of the territory, limiting GhG emissions, adapting to and mitigating climate change, moving towards the European objectives of carbon neutrality and the sustainability of buildings and urban planning transformations. In terms of sustainable mobility, the key instrument is the Urban Plan for Sustainable Mobility (SUMP), approved in November 2019, an instrument that contains the main objectives and interventions for sustainable mobility also at municipal level.

In summary, the main planning tools of the Municipality that act on the reduction of greenhouse gas emissions are:

- The **Sustainable Energy and the Climate Action Plan (SECAP)**: through the SECAP approved in 2021, the Municipality has planned, in agreement with some local stakeholders, actions to reduce emissions and to adapt to climate change, actions which are monitored periodically in terms of implementation and effect on GhG reduction. The SECAP is also the tool through which the Municipality monitors the final energy consumption of the municipal territory and the related greenhouse gas emissions. The Municipality of Bologna, by adhering to the Covenant of Mayors for Energy and Climate in 2019, has undertaken in the SECAP the objective of reducing GhG emissions by at least 40% by 2030 compared to 2005 values; the main actions through which it aims to reach the target concern the following areas of intervention:
  - regeneration of civil buildings and related systems, for energy requalification of buildings;



- energy production from renewable sources, to increase the installed power of photovoltaic systems also through the promotion of collective self-consumption and renewable energy communities;
- decarbonisation of transport and sustainable mobility, through electrification and modal shift of transport towards LPT and cycling mobility;
- municipal buildings and public lighting, for energy requalification of the public building stock and street lighting systems.
- energy transition in the industrial sector, for the reduction of electrical end uses and the support to technological innovation projects and the use of renewable energy sources.

The document can be viewed at this link:

[https://www.comune.bologna.it/myportal/C\\_A944/api/content/download?id=632adc5472e6b400994ee4cc4](https://www.comune.bologna.it/myportal/C_A944/api/content/download?id=632adc5472e6b400994ee4cc4)

- **The General Urban Plan (PUG) and the Building Regulations:** these are the formal planning tools that guide and regulate all urban planning and building transformations that take place in the municipal territory; they contain specific environmental and climate performance requirements for buildings and urban transformations, in line with the mitigation and adaptation objectives of the SECAP, for example by prescribing green roofs, materials that increase the albedo, the improvement of the building impact reduction index ("R.I.E."), greater energy performance, greenery performance, etc. The strategy underlying these tools is to find in each transformation an opportunity to generate a positive balance in terms of climate performance for the territory that hosts it. The current documents can be consulted here: <http://dru.iperbole.bologna.it/piano-urbanistico-generale>
- **The Urban Plan for Sustainable Mobility (SUMP)** pursues four priority objectives for urban mobility: accessibility, climate protection, health and healthy air, road safety. The main actions of the Plan which will have a significant impact on the reduction of GhG emissions are: strengthening and coordination of infrastructures for public and private mobility, the creation of new cycling paths, the introduction of speed limits for cars and above all the introduction of new forms of shared mobility and the strengthening of public transport, including the new tram network. The Plan can be consulted here: <https://pumsbologna.it/>

It should also be remembered that the UN Agenda 2030 has been the framework of the Municipality's planning process for years now and the Agenda's SDGs, initially used for a simple ex post classification of its objectives, have become, year after year, increasingly more of a guide in the construction of the process, in the definition of strategic and operational objectives and in the identification of indicators, as well as a compass for reporting. The **Single Programming Document 2023-2025 (Documento Unico di programmazione – DUP)** of the Municipality of Bologna was approved in December 2022 and integrated the Agenda 2.0 for the Sustainable Development of the metropolitan city. The Sustainable Development Strategy of the Emilia-Romagna Region will be included in the Document with the next update.

The analysis of the historic trend of consumptions and CO<sub>2</sub> emissions included in the SECAP highlights that between 2005 and 2018, the year also assumed as the baseline of the CCC, emissions in the municipal territory decreased by 21.6%, despite a 4.5% increase in the population (per capita emissions went from the value of 6.2 tonnes CO<sub>2</sub>/year in 2005 to the value of 4.6 tonnes CO<sub>2</sub>/year in 2018, with a reduction of -25%). This reduction exceeded the objectives that the Municipality had previously adopted in the SEAP (approved in 2012), through which the Municipality had implemented actions to reduce GhG emissions in line with the European objectives in force at the time, i.e. reducing emissions by 20% by 2020. The emission reduction between 2005 and 2018 differs depending on the sectors. Emissions from transport were reduced by 37%, from the industry sector by 47%, public lighting by 43%, while the public and private buildings sector requires an increase in efforts.

The participation of the Municipality of Bologna in the EU "Climate Neutral Cities Mission" aims, however, to exceed the objectives assumed by the SECAP by significantly accelerating the path towards neutrality. It is a very ambitious and challenging objective, the achievement of which depends, on the one hand, on the effective commitment to implement concrete actions to reduce emissions by all public



and private entities in the municipal area; on the other, by overcoming the obstacles that limit or slow down the effective implementation of these actions, which often depend on the conditions of a broader context than the local one. Among these, the national and regional strategic, legislative and regulatory framework is one of the key factors to enable the acceleration of the transition towards neutrality by 2030.

For this reason, the Municipality is working both to adapt its regulatory instruments to the objectives of the “Climate Neutral Cities Mission” and to dialogue with regional and national institutions in order to push regulatory innovation to support the energy and climate transition.

### **Municipal regulations regarding air quality and climate change**

The trend over time in the concentrations of the main atmospheric pollutants in the city of Bologna highlights a progressive improvement in pollution levels, although residual critical issues persist essentially linked to the orographic and climatic characteristics of the Po valley. In fact, especially in the autumn-winter period, conditions of thermal inversion, poor ventilation and limited rainfall arise which favor the accumulation of pollutants and the exceeding of the concentration limit values established by the reference legislation. Air quality is therefore one of the main critical issues for the city on which the climate actions included in this Plan can produce synergistic benefits.

The Municipality of Bologna is included in climate zone E pursuant to art. 4 of Presidential Decree n. 74 of 2013, therefore the period of activation of the heating systems is between 15 October and 15 April for a maximum of 14 hours per day.

With a specific ordinance from the Mayor, continuing the application of the measures introduced with the National Plan to contain gas consumption for the 2022-23 season and considering the mild weather conditions recorded in October 2023, the following rules have been defined:

- the reduction of the operating period by postponing the switching on of the heating systems for winter air conditioning for all categories of buildings, to 10/22/2023, for a maximum limit of 13 hours per day between 5 am and 11 pm every day;
- the reduction of 1°C in the air temperature indicated in the art. 3 paragraph 1 of Presidential Decree no. 74/2013, i.e. 19°C + 2°C tolerance for all buildings with the exception of those used for industrial, artisanal and similar activities whose limit remains unchanged at 18°C + 2°C tolerance.

Buildings in which the heating is entirely generated through non-emissive renewable energy sources (e.g. solar thermal, photovoltaic, geothermal energy) are excluded from the above limitations.

The Municipality of Bologna also implements the measures envisaged by the Regional Integrated Air Plan through a specific ordinance aimed at improving air quality, valid from October 1st up to the end of April, providing for specific regulations of the emission performance classes of biomass plants and authorized combustion materials and the ban on burning plant residues, except for specific exceptions. At the same time, there is a ban on new installations of highly emissive systems and the renewal of the most polluting biomass systems through regional tenders that encourage their replacement with systems that perform better in terms of emissions or with heat pumps.

In the case of emergency measures, activated when weather and air quality forecasts indicate the probability of exceeding the daily PM10 limit value, further restrictions are introduced such as the ban on open burning and the spreading of livestock slurry and the reduction of 1°C in the temperature of heated environments, with the following maximum values:

- 19°C (+ 2°C tolerance) in buildings used as residences and similar (E1), offices and similar (E2), recreational and religious activities and similar (E4), commercial and similar activities (E5), sport activities (E6);
- 17°C (+ 2°C tolerance) in places hosting industrial, artisanal and similar activities (E8). The following are excluded from the above limitations: hospitals, clinics and nursing homes and similar (E3), buildings used for school activities at all levels and similar (E7), as well as buildings in which the heating is entirely generated through non-emissive renewables (e.g. solar thermal, photovoltaic, geothermal energy, heat pumps).



A further permanent ordinance, again aimed at containing energy dispersion, provides for the obligation to keep the public access doors of commercial establishments and buildings with public access closed in the following cases:

- during the period when the heating systems are on, i.e. from October 15th to April 15th for climate zone E pursuant to Presidential Decree 74/2013;
- in the summer period if an air conditioning system is active in the premises.

These provisions have an important role in preventing the overuse of winter or summer air conditioning systems and consequently in reducing energy needs and the resulting polluting and climate-altering emissions. In fact, very often greenhouse gases and atmospheric pollutants share the same emission sources, therefore strategies that transversally affect production sectors, agriculture, residential areas and mobility allow to achieve common objectives and benefits, confirming the need for integrated and shared policies.

### European regulatory framework on energy and climate by 2030

The European regulatory framework on energy and climate for 2030 is evolving. In July 2021, the European Commission adopted a package of proposals to make EU policies on the environment, energy, land use, transport and taxation capable of reducing net GhGs by at least 55% by 2030 compared to 1990 levels. This objective is foreseen by the European climate law (Regulation 2021/1119/EU) and is in turn functional to transform the EU into a competitive and resource-efficient economy, which will generate no net greenhouse gas emissions in 2050, as indicated by the European Green Deal. There is a close link between the achievement of the new climate and energy transition objectives and the implementation of the European Recovery and Resilience Plan. For the financing of the Green Deal, specific resources have been made available within "Next Generation EU" (NGEU), a temporary financial instrument worth 750 billion euros designed to stimulate a "sustainable, uniform, inclusive and fair recovery". In particular, at least 37 percent of the resources financed through the Recovery and Resilience Facility must be dedicated to supporting climate objectives in Member States' NRRPs. All investments and reforms must respect the "Do No Significant Harm" (DNSH) principle to the environment. In this context, the objectives of developing renewable and alternative sources and energy efficiency play a central role<sup>4</sup>.

The key 2030 climate and energy targets are<sup>5</sup>:

- Greenhouse gas emissions: from 40% to at least 55% reduction (compared to 1990);
- Renewable energy: from 32% to 42.5%;
- energy efficiency target for final energy consumption: from 32.5% to 36%;
- energy efficiency target for primary energy consumption: 39%.

The table below shows the main references cited here.

---

<sup>4</sup> Camera dei Deputati, Servizio Studi, [Governance europea e nazionale su energia e clima](#)

<sup>5</sup> European Commission website, [2030 climate & energy framework](#)



A-2.1a: List of relevant policies and strategies at European level			
Type	Title	Description	Relevance
Plan	European Green Deal	The European Green Deal is a package of strategic initiatives that aims to put the EU on the path to a green transition, with the ultimate goal of achieving climate neutrality by 2050. It was launched by the Commission in December 2019 and the European Council took note of it in December the same year. The Green Deal highlights the need for a holistic, cross-sectoral approach in which all relevant policy sectors contribute to the ultimate climate goal. The package includes initiatives regarding climate, environment, energy, transport, industry, agriculture and sustainable finance, all highly interconnected sectors.	The definition of a European-level strategy to achieve climate neutrality puts emissions reduction objectives and the definition of a single market for CO <sub>2</sub> emissions at the center of the debate.
Financial instrument	NextGeneration EU	Temporary recovery tool, helping to repair the immediate economic and social damage caused by the coronavirus pandemic. The goal is to create a post-COVID-19 Europe that is greener, more digital, resilient and adapted to current and future challenges. On 21 July 2020, EU leaders agreed on a multi-faceted package of EUR 1824.3 billion (in 2018 prices) combining the EUR 1074.3 billion long-term budget for the period 2021-2027 or multiannual framework with NextGenerationEU, an extraordinary recovery effort of EUR 750 billion.	30% of total spending under the multiannual framework and NextGenerationEU is allocated to climate-related projects.  The National Recovery and Resilience Plan fits into this context, the tool that outlines the objectives, reforms and investments that Italy intends to implement thanks to the use of Next Generation EU funds, to mitigate the economic and social impacts of the pandemic and make Italy a fairer, greener and more inclusive country, with a more competitive, dynamic and innovative economy.
Regulation	European climate law (Regulation 2021/1119/EU)	The European Climate Law, in force since June 2021, turns into law the objective set in the European Green Deal for the European economy and society to become climate neutral by 2050. The law also sets the intermediate objective of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. This is a legally binding target, based on an impact assessment carried out by the Commission.	The law aims to ensure that all EU policies contribute to this climate neutrality goal and that all sectors of the economy and society do their part to achieve it by 2050.
Plan	REPowerEU	Presented on 18 May 2022 by the European Commission, the REPowerEU plan aims to reduce the EU's dependence on fossil fuels imported from Russia by accelerating the transition and building a more resilient energy system. The Plan was completed in July 2023, with a further step aimed at reducing gas demand in all member states by 15% over the following 8 months and storing more gas for the winter. Among the pillars of the plan: energy saving; diversification in supply, the replacement of fossil fuels, the diversification of investments and the implementation of reforms towards the ecological transition.	To cope with energy supplies and reduce the EU's dependence on Russian supplies, synergistic work at European level to create a common energy platform is essential.



Package of initiatives	Fit for 55	On 14 July 2021, the European Commission announced the “Ready for 55%” package of initiatives composed of numerous linked, complementary legislative initiatives aimed at reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels and to achieve climate neutrality by 2050. Furthermore, it aims to reform the EU ETS by making it more ambitious: a new autonomous emissions trading system is created for buildings, road transport and fuels for other sectors.	The package contains tangible measures to reduce GhG emissions, including a proposal for new EU rules on reducing methane emissions in the energy sector.
------------------------	------------	---	---

## National, regional and local energy and climate framework for 2030

### A-2.1b: List of relevant policies and strategies at national, regional, metropolitan and municipal levels

Type	Title	Description	Relevance
<b>National level</b>			
Strategy	National Energy Strategy	With the Decree of 10 November 2017, the Strategy was approved, a ten-year plan to anticipate and manage change in the energy system with the aim of making the national energy system more competitive, sustainable and safe. The Strategy constitutes an impulse for the realization of important investments, increasing the trend scenario with additional overall investments of 175 billion by 2030, divided as follows: - 30 billion for gas and electricity networks and infrastructures; - 35 billion for renewable sources; - 110 billion for energy efficiency.	The Strategy is a key tool at the national level to guide the transition towards a more sustainable and resilient energy system, promoting the efficient use of energy resources, the adoption of clean technologies and the reduction of greenhouse gas emissions.
Plan	Integrated National Energy and Climate Plan (INECP)	In January 2020, the Plan was published which incorporates the innovations contained in the Climate Decree-Law as well as those on investments for the Green New Deal envisaged in the 2020 Budget Law. The INECP establishes the national objectives for 2030 on energy efficiency, renewables and the reduction of CO2 emissions, as well as the objectives regarding energy security, interconnections, the single energy market and competitiveness, development and sustainable mobility, outlining for each the measures that will be implemented to ensure their achievement.	The Integrated National Energy and Climate Plan (INECP) is the key instrument at national level to enable the achievement of community targets on the environment and climate by 2030. The update proposal was sent to the European Commission in July 2023.
Plan	National Recovery and Resilience Plan (NRRP)	The NRRP, approved in July 2021, 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, i.e. main thematic areas on which to intervene, identified in full coherence with the 6 pillars of the Next Generation EU. The Missions are divided into Components, areas of intervention that address specific challenges,	The NRRP contains two Missions that are particularly relevant for the climate transition, in addition to other Missions that are transversal to the climate theme: <ul style="list-style-type: none"> <li>• Green revolution and ecological transition (59.46 billion, 31% of the total, divided into circular economy and waste management, renewable energy sources and development of hydrogen-based</li> </ul>



		in turn made up of Investments and Reforms. There are 3 further sub - missions (youth, gender equality and reduction of the citizenship gap), i.e. transversal priorities that guide the investments, reforms and projects of the Plan and have the aim of reducing the territorial, generational and gender gaps in the country .	<p>solutions, improvement of the electricity grid and water infrastructure, incentives for energy efficiency of buildings, Investments to face climate change and hydrogeological instability).</p> <ul style="list-style-type: none"> <li>• Infrastructure for sustainable mobility (25.40 billion, 13.26% of the total, divided by high-speed rail in Northern and Southern Italy and rail transport).</li> </ul>
Plan	National plan to contain gas consumption	The objective of the Plan, approved in October 2022, is to promote conscious and intelligent behaviour in the consumption of gas and electricity. The Plan adopts measures aimed at addressing the security of national natural gas supply in order to ensure a high level of storage filling and quickly diversify the origin of imported gas.	The National Ministry for Environment and energy security's guidance document confirms the decarbonisation commitments for 2030 to increase energy independence.
Plan	National Plan for Adaptation to Climate Change (NPACC)	In order to implement the National Strategy for Adaptation to Climate Change, approved with directorial decree no. 86 of 16 June 2015 by the Ministry of the Environment and Protection of Land and Sea, with decree no. 434 on 21 December 2023 the Ministry for Environment and Energy Security approved the NPACC. The objective is to encourage adaptation and increase the country's resilience towards climate change, through actions to be implemented also through their integration into current policies and instruments.	The Plan could represent a complex framework of union of the strategies and actions to be implemented for adaptation and therefore an important guidance tool for the planning and implementation of adaptation actions in the national territory.
<b>Regional Level</b>			
Financial planning tool	Regional Economy and Finance Document (REFD) 2023 - 2025	With Assembly Resolution no. 92 of 27 July 2022, the Regional Economic and Financial Document 2023 - 2025 was approved, the main financial planning instrument of the Region.	Among the strategic objectives of the REFD there is ' <i>The ecological transition through the Path to Carbon Neutrality before 2050</i> ', i.e. the drafting of a strategic and programmatic document which, on the basis of a net balance of emissions and technical-economic scenarios, will identify sector by sector, the best policies and actions to be implemented, over time, so that the 'sum' of these results in net neutrality of GHG emissions before 2050.
Strategy	Pact for Work and Climate	With resolution 1899/2020, at the end of a participatory process between institutions, economic and social representatives, the Emilia-Romagna Region signed the "Pact for Work and the Climate" (Patto per il Lavoro e il Clima) with 55 signatories: local authorities, trade unions, businesses, the four universities in the region (Bologna, Modena and Reggio Emilia, Ferrara, Parma), the regional school office, environmental associations, third sector and voluntary work, professional orders, Chambers of commerce and banks. The objective of the Pact is to relaunch regional projects towards the SDG objectives, including the fight against inequalities, the ecological transition, the reduction of climate-	<p>With this Pact, the signatories outline the strategic framework and the guidelines of the subsequent operational agreements and implementation strategies necessary to achieve the shared objectives:</p> <ul style="list-style-type: none"> <li>• complete decarbonisation by 2050</li> <li>• 100% renewable energy by 2035.</li> <li>• 3% of regional GDP in research</li> <li>• NEET (young people who do not study and work) under 10%.</li> </ul>





		altering emissions, work dignity, digital innovation, gender equality, buildings renovation, efficiency and safety.	
Strategy	Climate change mitigation and adaptation strategy of the Emilia-Romagna Region	The document (approved with Resolution 187/2018) 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 committing to an 80% reduction in regional emissions by 2050, the Strategy was defined to begin a path of awareness, integration and strengthening of regional policies for mitigation and adaptation that goes beyond European commitments.	This is a guiding document, which does not dictate binding rules with a view to integrating and strengthening regional policies for climate mitigation and adaptation. It also establishes a permanent regional forum for climate change, as a place of permanent dialogue with local administrations and production sectors for discussion and coordination on mitigation and adaptation policies at the local level.
Strategy	Agenda 2030 for Sustainable Development Regional strategy	In the strategy, approved with resolution 1840/2021, the 17 objectives of the United Nations Agenda were applied at a territorial level, in the belief that the new paradigm of regional development must be based on sustainability, in its inseparable environmental, social, economic and institutional components. The objective is on the one hand to contribute, together with local communities, to the implementation of the global action program for people, planet and prosperity. On the other hand, in line with the Pact for Work and Climate, 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 fractures, social, environmental and territorial and achieve full gender equality, accompanying Emilia-Romagna in the ecological and digital transition.	It is an action program that brings together different aspects and activities towards sustainable development. No binding rules are included. The Strategy correlates every action and commitment envisaged in the 2020-2025 Mandate Program and in the Pact for Work and Climate, to the Goals and targets of the 2030 Agenda, photographing the current positioning and setting targets for improving its performance, including the reduction of GhG emissions to 55% compared to 1990 levels (Goal 13).
Programme	Regional programme of the European Regional Development Fund 2021-2027	Approved by the Regional Council in November 2021, the Emilia-Romagna Regional Program is the programming document that defines the strategy and interventions for the use of the resources allocated to the Region by the European Regional Development Fund (ERDF), within the framework of the Cohesion Policy. Through the ERDF, the aim 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, more connected, more social, closer to citizens.	Over 30% of the total resources are allocated to fight climate change, orienting the activities envisaged in the Program - both in a dedicated and transversal way - towards solutions and interventions for a green, sustainable and resilient economy.
Plan	Regional Energy Plan	The regional energy plan - approved with Legislative Assembly Resolution no. 111 of 1 March 2017 - establishes the strategy and objectives of the Emilia-Romagna Region for climate and energy until 2030 regarding the strengthening of the green economy, energy saving and efficiency, development of renewable energy, transport interventions, research, innovation and training. In particular, the Plan adopts the European objectives for 2020, 2030 and 2050 regarding climate and energy as drivers of development of the regional economy.	The Plan provides guidelines for subsequent regional laws on the subject and for the policies of local authorities.



		<p>The main areas of intervention are the following:</p> <ul style="list-style-type: none"> <li>• Energy saving and efficient use of energy in different sectors;</li> <li>• Production of electrical and thermal energy from renewable sources;</li> <li>• Energy rationalization in the transport sector;</li> <li>• Transversal aspects.</li> </ul>	
Plan	Regional Integrated Air Plan (PAIR2020 - PAIR 2030 )	<p>With resolution 115/2017, PAIR2020 was approved, in compliance with the European Directive 2008/50/EC relating to ambient air quality and for cleaner air in Europe. The Plan identifies concrete actions to improve air quality and reduce the levels of pollutants present in the regional territory. During 2021, the Region began the path that will lead to the approval of the new Regional Integrated Air Plan (PAIR 2030).</p>	The PAIR dictates specific binding rules for the territory regarding air quality, a topic strongly interconnected with climate.
<b>Metropolitan level</b>			
Strategy	Bologna Charter for the Environment. Metropolitan cities for sustainable development	<p>On 8 June 2017, on the occasion of the G7 Environment which was held in Bologna, the Mayors of the Italian metropolitan cities signed the "Bologna Charter for the Environment. Metropolitan cities for sustainable development" which identifies 8 environmental themes to work on at a metropolitan scale:</p> <ol style="list-style-type: none"> <li>1.Sustainable use of land;</li> <li>2.Circular economy;</li> <li>3. Adaptation to climate change and risk reduction;</li> <li>4. Energy transition;</li> <li>5. Air quality;</li> <li>6. Water quality;</li> <li>7. Ecosystems, urban greenery and protection of biodiversity;</li> <li>8.Sustainable mobility.</li> </ol>	The protocol identifies the objectives to be achieved in the coming years, in line with the UN Agenda 2030, and is the first structured and concrete step by metropolitan cities on the environmental sustainability front. The centrality and importance of the identified objectives, together with the need for medium-long periods for their implementation in territorial policies, led to the need to prepare a series of further acts and tools in the following years to continue with the implementation of the actions.
Strategy	Agenda 2.0 for the sustainable development of the Metropolitan City of Bologna	<p>Presented in June 2021, Agenda 2.0 is an innovative tool that extends the concept of sustainable development from the environmental dimension to the economic and social one. The objective is to make Agenda 2.0 a device for orientation and integration of planning and programming tools. Pilot projects have been activated to give substance to the concept of sustainable development in the relevant metropolitan area. With respect to the involvement of local institutions and stakeholders, two specific actions have been prepared:</p> <ul style="list-style-type: none"> <li>• a survey for the recognition of projects/good practices/experiences regarding sustainable development underway in the Unions of Municipalities, in the Municipalities, in the trade associations;</li> <li>• a second level consultation on three territories in order to describe the objectives and targets of Agenda 2.0 with the corresponding trends, as well as to investigate what other actions can be activated to get closer to achieving these objectives.</li> </ul>	The objectives identified and pursued on an experimental basis have merged into the MTP (Metropolitan Territorial Plan) where the aim of pervasively "grounding" objectives, strategies and actions for the implementation of the process of fighting climate change and, consequently, of the need to achieve climate neutrality.



Plan	Sustainable Urban Mobility Plan (SUMP)	Approved in November 2019, the SUMP is a strategic plan with a medium-long term time horizon, with the task of satisfying the demand for mobility of people and goods in a sustainable manner in urban and metropolitan areas, in order to improve the quality of life and cities, also dedicating targeted attention to the development of the cycle/pedestrian network.	The PUMS envisages important interventions for sustainable mobility and metropolitan public transport, including a new tram-type rapid mass transport system for the urban area of Bologna.
Plan	Sustainable Urban Logistics Plan (SULP)	The SULP was developed in a coordinated and integrated manner with the SUMP, in which the strategies for the sustainable mobility of goods are identified (distribution logistics in urban areas and industrial logistics).	The SULP aims to achieve a goods transport system capable of responding to the various needs present in the territory of the metropolitan city, increasing the sustainability of logistics and transport activities (carbon free objective by 2030 for urban distribution).
Plan	Metropolitan Territorial Plan (MTP)	Approved in 2021, the MTP incorporates what was elaborated by the Strategic Metropolitan Plan 2.0, the Metropolitan Agenda for Sustainable Development and the SUMP, defining the strategic and structural choices of territorial planning for the social and economic development and the environmental protection and enhancement of the area subway.	<p>For the regeneration of the settlement system, for the protection of public health, for the conservation of biodiversity, for the provision of ecosystem services and for the increase in resilience and the capacity to mitigate polluting and climate-altering emissions and to adapt to climate change, the MTP provides that the Municipalities:</p> <ul style="list-style-type: none"> <li>- increase the provision of urban greenery through: <ul style="list-style-type: none"> <li>• the creation of urban forests, green areas, planted areas and tree lines in public and private spaces;</li> <li>• integrated planting interventions along the penetration roads, cycle paths, strips bordering watercourses;</li> <li>• the creation of green ventilation corridors;</li> <li>• renaturalization interventions of abandoned and/or underused urban areas, aimed at generating regulatory ecosystem services;</li> </ul> </li> <li>- improve urban metabolism through: <ul style="list-style-type: none"> <li>• widespread and pervasive application of nature-based solutions (NBS);</li> <li>• preparation of forecast energy balances and local and global pollutant emissions for all the most important land transformation interventions;</li> <li>• promoting the integration into buildings of devices and technologies for reducing energy needs and producing energy from renewable sources;</li> </ul> </li> </ul> <p>With respect to all other aspects of sustainability, in general the Plan envisages that in the various contexts of intervention the best technologies available will be used to encourage/guarantee low impacts and consumption both for new settlements and for the transformations of pre-existing ones.</p>



Municipal level			
Declaration	Climate emergency declaration	<p>On September 30th 2019, the Bologna City Council approved the Declaration of climate and ecological emergency, recognizing the urgency of the fight against climate change. The Declaration contains a number of commitments, including:</p> <ul style="list-style-type: none"> <li>• promote knowledge on CO<sub>2</sub> emissions,</li> <li>• act to reduce emissions levels to reach net zero by 2030;</li> <li>• promote citizen participation in environmental policies.</li> </ul> <p>The Declaration also asks that measures to fight climate emergency comply with the following principles: Climate and ecological justice, participatory and deliberative democracy, transparency.</p>	<p>The commitments undertaken by the Declaration contributed to the process of establishing the Citizen Assembly and the set up of the first Citizen Assembly for Climate, as well as to the city's application for the 100 Climate Neutral Cities Mission.</p>
Plan	General Urban Traffic Plan (GUTP)	<p>The Plan was approved in December 2019, at the same time as the drafting of the SUMP of the Metropolitan City of Bologna. The Plan coordinates and systematizes the operational interventions for managing the mobility and road system, integrating them with other higher-level and municipal planning tools. The Bike plan (Biciplan) approved in 2019 within the GUTP, aims to increase and spread the use of bicycles.</p>	<p>The Plan develops aspects of sustainable mobility, providing for a further strengthening of LPT bicycle and pedestrian mobility, setting the objective of approximately 20% modal shift from the use of private vehicles.</p>
Plan	Sustainable Energy and Climate Action Plan (SECAP)	<p>The SECAP was approved in April 2021 and contains the climate neutrality scenarios, the inventory of CO<sub>2</sub> emissions, the assessment of vulnerability and climate risks on the municipal territory, as well as mitigation and adaptation actions.</p> <p>The Plan is the result of the adhesion process by the Municipality of Bologna to the Covenant of Mayors for energy and climate, which requires the definition of an Action Plan for the mitigation and adaptation to climate change, with objectives up to to 2030, as part of a long-term strategy for the complete decarbonisation of all activities carried out on its territory (not only, therefore, in energy uses, but also in the use of materials, products and services).</p> <p>The Municipality of Bologna joined the Covenant of Mayors in 2008 with the consequent drafting of the SEAP (Sustainable Energy Action Plan) approved by the City Council on 28 May 2012. In October 2014 the Municipality of Bologna also joined (first Italian municipality) the Mayors Adapt initiative of the Covenant of Mayors, addressing the issue of adaptation to climate change and developing the first Adaptation Plan, approved by the City Council on 8 September 2015. Both updated Plans were therefore merged into the SECAP.</p>	<p>The SECAP, under monitoring in 2023, is the voluntary tool of the Municipality of Bologna for estimating CO<sub>2</sub> emissions and for defining climate mitigation and adaptation actions. Its monitoring in 2023 was conducted in synergy with the drafting of the Climate City Contract and the emissions inventory was the starting point for the development of the CCC baseline.</p>
Plan	General Urban Plan (PUG)	<p>Approved by the City Council with resolution PG 342648/2021, the PUG directs the future transformations of the city in a strategic way, defining long-term objectives and defining actions and rules for achieving the objectives. The main strategies of the PUG are three:</p> <ul style="list-style-type: none"> <li>• Urban strategy 1 - Resilience and environment - ensuring health and well-</li> </ul>	<p>Particularly relevant for energy and climate are the rules of strategy 1 - Resilience and environment, which address the main environmental issues that territories are currently face in relation to climate change, which can be summarized as follows:</p>



		<p>being for those who live in the city today and those who will live there tomorrow, minimizing the risks to people and things, including those resulting from climate change, supporting the energy transition; assume the targets of the United Nations 2030 Agenda and the Metropolitan Agenda as a translation of the plan's objectives according to a metabolic approach;</p> <ul style="list-style-type: none"> <li>• Urban strategy 2 - Habitability and inclusion - support demographic growth by offering homes and services that families, young people and students can access, also guaranteeing innovative spaces for work;</li> <li>• Urban strategy 3 - Attractiveness and jobs - strengthen and adapt the infrastructures above and below ground, to support innovation and economic growth, highlighting local dynamics; encourage new jobs and the establishment of a circular economy.</li> </ul> <p>In addition to establishing general strategies, the Plan is concerned with the liveability of the individual parts of the city, mapping specific risks, opportunities and objectives for each; in this way it identifies the local strategies that serve to guide public and private improvement interventions in the area, therefore not only of the public administration but also of private operators, who can put forward regeneration proposals.</p> <p>The Plan Discipline leads from the objectives of the Plan to the rules for urban and ecological-environmental quality. It is organized following the structural scheme of the Plan: objectives-strategies-actions. The latter select priorities and establish directions for urban policies and rules for urban planning and building interventions to transform the city (guidelines - sustainability conditions-prescriptions)</p>	<ul style="list-style-type: none"> <li>• <u>increase in soil permeability</u>: de-sealing interventions are prescribed when intervening in particular along river banks; to a lesser extent, to be evaluated on a case-by-case, de-sealing is in any case suggested and pursued throughout the city, when intervening with transformations that involve demolition and reconstruction of the existing;</li> <li>• <u>increase the number/asset of trees</u>: to be pursued with urban forestation interventions (planting of new trees in existing parks, infrastructure mitigation strips, creation of new parks...), small urban greening interventions, increase in the RIE index (building impact reduction index) in urban planning interventions, creation of green roofs and adequately tree-lined car parks;</li> <li>• <u>saving and reuse of water</u>: reduction of rain flows through local accumulations of water (hydraulic invariance) and releases into watercourses at appropriate times, reduction of withdrawals from aquifers for non-valuable uses, reduction of drinking water consumption through the efficiency of the network water distribution and the reduction of domestic and non-domestic consumption, rainwater recovery even in domestic uses of non-drinking water; elimination of wastewater interference with natural and artificial drainage water bodies, increase in Sustainable Urban Drainage Systems (SUDS);</li> <li>• <u>reduction of heat island effect</u> : maintenance or improvement of the microclimatic well-being index in the case of urban planning interventions and of the albedo in the case of building interventions, increase in shading of open spaces through tree systems which also ensure a cooling effect thanks to evapotranspiration (a phenomenon typical of all vegetation and therefore also ensured by green roofs and walls), study of urban morphology to allow greater ventilation on the ground;</li> <li>• <u>promotion and incentive of energy efficiency</u>: provision for urban planning and building interventions of specific performances in terms of heating and cooling of buildings, reduction of heat losses, reductions in consumption and climate-altering emissions, increase in local production of</li> </ul>
--	--	---	--



			<p>electricity through renewable sources;</p> <ul style="list-style-type: none"> <li>• <u>diffusion of energy production systems from renewable sources</u>: the plan, in addition to reducing energy consumption, proposes the development of renewable energy sources. To do this, it adapts and supports what is promoted by the SECAP actions.</li> </ul>
Regulation	Building Regulations (RE)	<p>The Building Regulations (also including the Regulations for public and private green areas and the Regulations for the application of the hydrogeological restrictions) contain the definitive and prescriptive regulations for the governance of building interventions and transformations on the municipal territory. The objectives of safeguarding, increasing the quantity and improving the performance of the city's green areas are expressed in the General Urban Plan, in the new Building Regulations and in its annex Public and Private Green Regulations; they concern public greenery, private greenery, usable and mitigation greenery, arboreal phytomass, parks, gardens, protected natural areas and also the greening of building envelopes (green roofs and walls), with a view also to seek in the new building, urban and infrastructural transformations the opportunities and contexts to strengthen the urban eco-network and provide ecosystem services of regulation, mitigation and adaptation.</p>	<p>The Building Regulations address and detail the performance of various components of environmental sustainability, with a view to mitigation and adaptation.</p> <p>Specifically, the art. 28 - Performance requirements of buildings for environmental compatibility in the urban context - defines the main performances for:</p> <ul style="list-style-type: none"> <li>• Microclimatic well-being: to contribute to the mitigation of the "heat island" effect, the methods for calculating the microclimatic well-being index and the albedo are defined and the performance levels are defined depending on the type of intervention;</li> <li>• Saving and reuse of water: the performance levels are defined in terms of maximum daily domestic (and similar) water consumption, to be achieved in the case of urban planning and building interventions or interventions on existing structures involving the entire sanitary water system, and the further requirements to be satisfied regarding the installation of low consumption water and sanitary systems, preparation of rainwater recovery systems, to be used for non-potable uses, and greywater treatment and reuse systems.</li> <li>• Energy and emission sustainability: it is required that in all relevant building and urban planning interventions the adoption of solar energy sources, passive techniques, high performance of the building envelope in both winter and summer are considered; Furthermore, levels are defined for the global energy performance indices of the redeveloped buildings, increasing based on the relevance of the intervention (up to zero emissions for new construction or demolition-reconstruction interventions, positive energy for urban planning interventions). In order to reduce summer solar gains, the obligation</li> </ul>



			<p>to adopt solar shading for transparent closures is defined, favoring green walls or active shielding elements (photovoltaic electricity production). Furthermore, the obligation to protect roofs is defined, favoring green roofs and free cooling systems.</p> <ul style="list-style-type: none"> <li>Regulation of natural cycles: it is required that in all significant building interventions and in urban planning interventions on the spaces attached to buildings, solutions are adopted that improve urban drainage and permeability, while enhancing the functions performed by the phytomass.</li> </ul> <p>The aspect of energy-emission sustainability is also taken up by the RE in relation to the new cogeneration plants serving district heating, providing recovery heat or RES for at least 50% of the heat supplied.</p> <p>With respect to sustainable mobility, the RE, in compliance with the PUMS, provides for parking obligations for bicycles and charging points for electric vehicles.</p>
Strategy	Green strategy for the urban climate	<p>The strategy, outcome of the LIFE CLIVUT Project (Ref. Module C-2) and approved in 2022, aims to counteract the negative effects of climate change and enhance greenery as an element of well-being for all, while at the same time increasing the resilience capabilities of the city. It is in line with the objectives and requirements relating to greenery contained in the General Urban Plan (2021). The key points of the Strategy are:</p> <ul style="list-style-type: none"> <li>know and protect the existing arboreal heritage;</li> <li>increase the number of trees (in line with PUG and SECAP objectives);</li> <li>improve urban ecology by further diversifying the structure and biodiversity of green areas;</li> <li>improve vegetation health to achieve good condition for 90% of the public tree population by 2040;</li> <li>increase sustainable urban drainage;</li> <li>involve the city community in the broadest understanding of the importance of urban heritage for the well-being of citizens and the urban ecosystem and increase their commitment in the management and development processes of this heritage.</li> </ul>	<p>The Green Strategy for the urban climate of the Municipality of Bologna contains the set of behaviours and of actions aimed at ensuring the city has a healthy, diversified tree heritage capable of mitigating the negative effects of climate change and enhance greenery as an element of well-being for all, increasing at the same time the resilience capabilities of the city.</p>
Statute	Municipal Statute of the Municipality of Bologna	The statute is the document that defines the bodies, tasks and methods of operation of the	The changes introduced to the Statute by Council Resolution 77/2021 of 12/07/2021 concern the inclusion of the



		<p>Municipality. The text is in force from 17 December 2022.</p> <p>In 2021, some changes were made which introduce the objective of climate neutrality into the Statute (Art.2) and the Citizen Assembly among the participation institutions of the Municipality (Art 6-bis).</p>	<p>objective of climate neutrality among the programmatic objectives of the Municipality.</p> <p>In particular to the Art. 2 (Programmatic objectives) added the following sentence: <i>"The Municipality, recognizing the climate and ecological emergency, orients its administrative policies and activities to the principles of the just ecological transition and sustainable development, as well as to the protection of the climate, the and human health" and in paragraph 5 "...the Municipality contributes, also in cooperation with regional, national, European and international institutions and by involving businesses and individual and associated citizens, to the reduction of pollution and climate-altering emissions, towards climate neutrality"</i>.</p> <p>Article 6 also formalizes the Citizens' Assembly as a participatory institution.</p>
Regulation	Regulation on the rights of participation and information of citizens of the Municipality of Bologna	The Regulation regulates the methods for exercising the rights of participation in politics and the information rights of citizens, implementing the provisions of the Municipality Statute.	<p>Particularly relevant for the Municipality's neutrality transition were the changes introduced to the Regulation by Council Resolution 74/2022 of 07/29/2022, which introduced the Citizen Assembly among the forms of participation and information.</p> <p>The implementing rules of the Assembly are identified here, with particular reference to the methods and terms of proposal, call, composition, organization and functioning, of discussion and decision of the Council on the outcomes, of involvement of the Council and the Municipal Offices, as well as of monitoring and verification of the state of implementation, according to principles of democratic participation, publicity and transparency.</p> <p>These changes are the result of a process that began with the Declaration of Climate Emergency and therefore the establishment of a Negotiating Table, which produced the "Negotiating Table Guidelines for the modification of the Municipal Statute of Bologna and the definition of the Implementing Regulation of the Citizens' Assemblies for the Climate".</p> <p>The Roundtable, which took place from February to June 2021, involved representatives of the institutional, economic and environmental components of the city, and defined proposals and recommendations for the introduction of city assemblies into the statutory and regulatory system of the Municipality.</p>





A-2.1c Relevant legislation at national and regional level			
Type	Title	Description	Relevance
<b>National level</b>			
<b>Regulations</b>	Legislative Decree 199/2021 Implementation of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.	Defines the tools, mechanisms, incentives and institutional framework, financial and legal, necessary to achieve the objectives of increasing the share of energy from renewable sources by 2030, in implementation of the <u>Directive (EU) 2018/2001</u> . It contains provisions necessary for the implementation of the measures of the National Recovery and Resilience Plan (NRRP) regarding energy from renewable sources, in accordance with the Integrated National Energy and Climate Plan (INECP), with the aim of identifying a set of coordinated measures and instruments, through which a binding objective of reducing greenhouse gas emissions of at least 55% compared to 1990 levels by 2030 is foreseen for the European Union . The Art. 20 also defines the rules for identifying surfaces and areas suitable for the installation of renewable energy systems. Annex III introduces more efficient requirements in terms of covering the thermal and electrical energy needs from renewable sources of new buildings or those undergoing significant renovations.	Law that contains the provisions on energy from renewable sources while defining the tools, mechanisms, incentives and the institutional, financial and legal framework, in coherence with the European objectives of decarbonisation of the energy system by 2030 and complete decarbonisation by 2050.
<b>Regulations</b>	Law 34/2022 Conversion into law, with amendments, of Legislative Decree 1 March 2022, n. 17, containing urgent measures to contain the costs of electricity and natural gas, for the development of renewable energy and for the relaunch of industrial policies	Conversion into law of the Legislative Decree of 1 March 2022 n. 17, which came into force on 2 March 2022 ("Energy Decree"), through which urgent measures were adopted aimed at containing the cost of electricity and natural gas, as well as impacting the renewable sources sector. With particular reference to the renewable sources sector, the decree introduces: <ul style="list-style-type: none"> <li>• measures to simplify the authorization processes;</li> <li>• provisions relating to areas suitable for the installation of RES plants;</li> <li>• new concessions for interventions to be carried out in the regions of Southern Italy and other interventions;</li> <li>• specific provisions for plants to be built in agricultural areas.</li> </ul>	The rule introduces important forms of simplification for the diffusion of energy production plants from renewable sources, with particular reference to the enabling procedures and greater openness towards restricted areas.
<b>Guidelines</b>	Guidelines on Agrivoltaic Systems	The document, published on 27 June 2022, developed by the working group coordinated by the Ministry for Ecological Transition (MITE) with the contribution of CREA - Council for research in agriculture and analysis of the agricultural economy, ENEA - National Agency for new technologies, the energy and sustainable economic development, GSE - Manager of energy services and RSE - Research on the energy system. It describes the minimum	The guidelines constitute an important act of direction for the implementation of innovative agrivoltaics, the development of which is essential for the country's decarbonisation strategy, also by virtue of the numerous benefits deriving from the combination of energy and agricultural production.



		characteristics and requirements that a photovoltaic system should possess to be defined as agrivoltaic, both with regard to the most advanced systems, who can access the NRRP incentives, both for what concerns other types of agrivoltaic systems, which can still guarantee a more sustainable interaction between energy production and agricultural production.	
<b>Regulations</b>	Decree of the Ministry of Ecological Transition n. 383 of 6 October 2022	Establishes the new operating methods of natural gas-powered thermal systems in the 2022-2023 season for residential and production buildings. The Decree establishes a reduction of 15 days in total of the functioning period and of 1 hour for the daily lighting functioning. Specifically, the reduction of the switch-on period is implemented by postponing the start date by 8 days and bringing forward the end date by 7 days, in relation to the dates foreseen for the different climate zones.	Relevant act for the reduction of energy consumption during the 2022/23 thermal season.
<b>Regulations</b>	National decree for the definition of areas suitable for the installation of energy production systems from renewable sources	The decree, currently under development, should define the areas suitable for hosting renewable energy plants, with criteria for identifying the "suitable areas" that individual regions must comply with.	The Decree aims to reduce the country's energy dependence.
<b>Regulations</b>	Decree encouraging the diffusion of self-consumption of energy from renewable sources	The Decree, published on 24 January 2024, regulates the incentive methods to support the electricity produced by renewable source plants inserted in self-consumption configurations for energy sharing and defines criteria and methods for granting the contributions envisaged by the Mission 2, Component 2, Investment 1.2 (Promotion of renewables for energy communities and self-consumption) of the NRRP.	Act that promotes renewable sources and the sharing of energy produced through economic incentives.
<b>Regulations</b>	Innovative Agrivoltaic Decree	The expected Decree (under development) aims to install at least 1.04 gigawatts of advanced agrivoltaic systems by June 30th 2026, through two measures: the granting, from the NRRP funds, of a capital contribution of a maximum amount of 40% of the eligible costs and an incentive tariff on the production of net electricity injected into the grid. The aim of the incentive is to encourage extended access to the resources made available, allocating a quota of 300 MW exclusively to the agricultural sector, specifically for plants with a maximum power of 1 megawatt. While, a second quota of 740 MW has been reserved for both the agricultural sector and temporary business associations, as long as they include at least one entity from the agricultural sector. The management of the measurement and access to the incentive mechanism is entrusted to the Energy Services Manager (GSE).	Act which attributes a central role to agriculture in the path towards the environmental and energy transition, aiming for a dual objective: the sustainable use of land and the increase in energy production from renewable sources.
<b>Regional level</b>			



<b>Regulations</b>	Resolution of the Legislative Assembly 6 December 2010, n. 28	This Resolution identifies the areas and sites for the installation of electricity production systems, through the use of renewable solar photovoltaic energy sources, starting from a synthetic consideration of the landscape and environmental constraints present in the regional territory and the need to protect the excellent crops and agricultural traditions. In particular, the Resolution identifies four macro categories of areas in which it is possible or not to install photovoltaics.	Act that promotes the diffusion of photovoltaic solar renewable energy sources.
<b>Regulations</b>	Resolution of the Regional Assembly of 26 July 2011 n.51	Identification of areas and sites for the installation of electricity production systems through the use of renewable energy sources from wind, biogas, biomass and hydroelectric.	Act that promotes the diffusion of renewable energy sources from wind, biogas, biomass and hydroelectric.
<b>Regulations</b>	Regional Council Resolution 24 July 2015, n. 967 and subsequent amendments	Defines the obligations regarding the minimum energy performance requirements of buildings. The changes made with DGR 1261/2022 have increased the minimum percentages of coverage of energy needs from renewable sources for buildings newly built or subject to significant renovation, with the following graduality: a) 60% of the expected consumption for domestic hot water and 60% of the sum of the expected consumption for the production of domestic hot water, winter air conditioning and summer air conditioning for the interventions for which the building permit request is submitted until 31 December 2023; b) 70% of the expected consumption for domestic hot water and 70% of the sum of the expected consumption for the production of domestic hot water, winter air conditioning and summer air conditioning for the interventions for which the building permit request is presented by the January 1, 2024; c) 80% of the expected consumption for domestic hot water and 80% of the sum of the expected consumption for the production of domestic hot water, winter air conditioning and summer air conditioning for the interventions for which the building permit request is presented by January 1, 2026.	Act that promotes the decarbonisation of the construction sector through the progressive energy renovation of the existing real estate assets and the construction of new buildings with very high performance and almost zero impact.
<b>Regulations</b>	Regional law on urban planning n°24 of 21 December 2017	It represents the regional discipline regarding territorial governance and also defines the minimum essential levels of the infrastructure systems, urban and territorial equipment as well as the services that must be guaranteed throughout the regional territory. Among its objectives are: containing land consumption , promoting the regeneration of urbanized territories and improving urban and building quality (including aspects of energy efficiency and environmental impacts in the use of materials). It introduced a new municipal planning tool: the General Urban Plan (PUG). The PUG, is focused on the	Based on this Law, the Municipality of Bologna has drawn up the General Urban Plan (PUG), approved in 2021, which contains important objectives and regulations for reducing emissions and adapting to climate change.



		reduction of land consumption (with the objective of zero balance by 2050), on urban regeneration, on improving the building quality of the existing building stock, on sustainability and security of the territory.	
<b>Regulations</b>	Regional Council Resolution 11 November 2021, n. 1458	The resolution approves the "Implementation guidelines of the Legislative Assembly Resolution of 6 December 2010, n. 28, to promote the construction of photovoltaic systems in abandoned quarry areas". It defines the areas of abandoned quarries that can and cannot be used for the construction of photovoltaic systems. Among the non-usable areas there are those with final environmental destination.	Act promoting renewable sources, in accordance with the strategic objectives of the Pact for Work and Climate, to accelerate the ecological transition to achieve carbon neutrality before 2050 and to move to 100% renewable energy by 2035.
<b>Regulations</b>	Resolution of the Legislative Assembly of the Emilia-Romagna Region 23 May 2023, n. 125	The objective of the resolution is to specify the location criteria to guarantee the maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and environmental value of the territory. These criteria provide useful guidance, within a constantly evolving national legal framework of reference, for operators in the sector and for the public administrations competent to ensure the formation of the administrative qualifications necessary for the installation and operation of the systems.	Act which, with the aim of accelerating and promoting development and the maximum possible diffusion of photovoltaic systems, clarifies the current and provisional structure of the location criteria of photovoltaic systems in Emilia-Romagna, deriving from the application of the current regional regulations and the provisions of Legislative Decree 199/2021.

## Need for action on policies, strategies and regulations to enable neutrality

A-2.1d: Policies, strategies, relevant regulations and need for intervention			
Type	Title	Need for action	Action reference
Law	National Climate Law	The Municipality of Bologna believes it is necessary to promote the development of a national law for climate as happened in other European countries (such as France, Germany and Spain) to define, sector by sector, the actions and tools, at a national level, to achieve climate neutrality, also by shifting the different forms of economic support from activities and actions that aggravate the climate crisis, towards activities and actions that favour mitigation and adaptation to climate change. This new national regulation could provide a significant external contribution to Italian cities currently committed to the 2030 climate neutrality objective.	The Municipality will promote forms of discussion with all institutional levels to define the objectives, actions and tools that can be contained in the law.  Ref. Module C-1 - Multilevel Governance
National decree	National decree for the definition of areas suitable for the installation of energy production systems from renewable sources.	The expectations for the decree, still being developed, are those of an expansion at national and local level of renewable plants, starting from photovoltaic ones, a further simplification of authorizations and the revision of the forms of public economic support for the various renewable energy sources.	In particular, the Municipality of Bologna will promote further regulatory and procedural simplifications, a greater possibility for innovative agrivoltaics, eroding the limitations provided for by the current regulations. Remodulation of the forms of economic support relating to energy sources.



			<p>Strengthening the incentives for renewable sources aimed above all at the diffusion of small plants, and eliminating those relating to fossil sources.</p> <p>Ref. Module C-1</p>
National plan	Integrated National Energy and Climate Plan (INECP)	The current phase of updating the Plan provides the opportunity to create the necessary national support framework to accelerate the energy and climate transition of cities.	<p>The Municipality has activated discussions with the national Government for the updating of the INECP together with the network of the Italian cities of the Mission, also proposing a review of the different forms of public economic support for sustainable energy.</p> <p>Ref. Module C-1</p>
National plan	National Plan for Adaptation to Climate Change (NPACC)	The Plan lacks the identification of specific strategies and the definition of priorities, objectives, targets and times for their achievement.	<p>The Municipality, together with the Emilia-Romagna Region, presented observations on the Plan for various environmental matrices.</p> <p>This plan can have an important role on emissions throughout the national territory also by promoting a rapid and widespread development of Nature Based Solutions (NbS) throughout the national territory, providing, among the various ecosystem services, also greater sequestration and storage capacity of CO<sub>2</sub>.</p> <p>Ref Module C1</p>
Municipal plan	General Urban Plan (PUG)	The objectives of the PUG in terms of climate mitigation and adaptation are consistent with the SECAP, both instruments were in fact approved in 2021. In 2023 the Municipality of Bologna started the procedures envisaged by Regional Law 24/2017 to introduce some changes to the PUG. The variant proposal aims first of all to make the PUG's actions better adhere to the programmatic mandate lines of the current Administration, in terms of effectiveness and efficiency in the control of urban transformations, as well as the pursuit of climate neutrality objectives.	<p>Among the objectives of the Plan revision are also the further expansion of local photovoltaic production, the promotion and incentive of building and urban planning interventions for climate neutrality, the strengthening of the energy infrastructures fundamental for local RES production and sharing, the refinement of climate and environmental provisions.</p> <p>Ref. Module C-1</p>
Municipal regulation	Building Regulations (RE)	The RE contains some elements of protection on certain buildings with the aim of maintaining their identity and historical and architectural characteristics. To this end, article 73 of the RE provides for different limitations on the installation of photovoltaics depending on the level of interest of the building (historical-architectural, cultural and testimonial, historical-architectural of the Modern, cultural and testimonial of the second half of the twentieth century).	<p>With the PUG and RE revision, the easing of these constraints is envisaged in order to expand the local photovoltaic production through a greater possibility of installing PV panels.</p> <p>Ref. Module C-1</p>
Regional legislation	Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 Location criteria for	There is a need to adapt the regional regulation regarding location criteria for photovoltaic systems in order to promote their maximum diffusion.	<p>The Municipality of Bologna participated with specific proposals in the work which on 23 May 2023 led to the approval of the Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 " <i>Specification of location criteria to guarantee maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and</i></p>



	photovoltaic systems		<i>environmental value of the territory. (Council Resolution no. 214 of 13 February 2023)", with the aim of promoting the maximum development of photovoltaics in the regional territory. Ref. Module C-1</i>
--	----------------------	--	---

The following table shows the reference baseline (column 1) and the emissions reduction target for 2030 (column 2). For each NZC sector, the emissions abated by existing plans (SECAP actions, column 3) and by the Action Plan of the Climate City Contract (column 5) are then quantified. For each sector indicated in the table (Buildings, Transport, Waste and wastewater, IPPU, AFOLU and Transectoral), column 5 reports in aggregate form the reduction in emissions expected from the actions identified with the Action Plan. In particular, each value indicated in column 5 is obtained as the sum of the direct impacts obtainable - for each sector - from the actions quantified in the following tables 2.2a and 2.2b. For completeness, the contribution deriving from behavioural actions has also been integrated into the table.



A-2. 1e: Emission Gap											
	(1)	(2)		(3)		(4)		(5)		(6)	
	Baseline emissions	Emissions reduction target for 2030		Emission reduction through other Action Plans		Emission Gap		Emissions reduction through the CCC Action Plan to address the Gap		Residual emissions	
	Baseline emissions (2018) - referring to the inventory used for target setting	The emissions reduction target for 2030 ideally achieves a minimum 80% reduction from the baseline, as reported in Section 2 of the Commitments document of the CCC. The overall target should be absolute or net-zero (i.e. including the compensation of any residual emissions).		These are the emissions reductions that would be achieved through existing policies, and plans, outlined in Section A-2.1. Those actions are by definition not part of the action portfolio in section B. If they are fully or partially incorporated in module B-2, their associated reduction potential should be referenced in column (5) and not be included here.		(4) = (2) – (3)		This column is used to present the already quantified emissions reduction associated with the equity portfolios outlined in Module B-2. Ideally, this equates to the gap. If there is a difference between the reduction potential of the actions specified in Module B-2 (e.g. because their reduction potential has not been fully estimated or because additional measures will be identified in future iterations), the CCC action plan should be explicit about this difference and explain how the difference will be closed. In principle, until the difference was addressed, it would be considered part of the residual emissions.		(6) = (1) – (2)	
				WARNING if the baseline is a BAU scenario: If the BAU modelling includes any of these existing measures, please also do not include the associated emissions reduction in this column as otherwise it would be double counted.							
	(absolute)  (specific values)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)
Buildings	1,227,679.54	982,143.64	80.00%	322,369.33	26.26%	659,774.30	53.74%	507,250.13	41.32%	245,535.91	20.00%
Transport	325,329.79	260,263.83	80.00%	54,443.41	16.73%	205,820.42	63.27%	99,189.49	30.49%	65,065.96	20.00%
Waste and wastewater	4,522.00	3,617.60	80.00%	-	-	3,617.60	80.00%	403.03	8.91%	904.40	20.00%



<b>A-2. 1e: Emission Gap</b>											
	(1)	(2)		(3)		(4)		(5)		(6)	
	Baseline emissions	Emissions reduction target for 2030		Emission reduction through other Action Plans		Emission Gap		Emissions reduction through the CCC Action Plan to address the Gap		Residual emissions	
Industrial and production processes (IPPU)	-	-	-	-	-	-	-	-	-	-	-
Agriculture and Land Use (AFOLU)	15,285.03	12,228.02	80.00%	-	-	12,228.02	80.00%	2,713.00	17.75%	3,057.01	20.00%
Transectoral								20,234.07			
Behavioural								251,650.62			
<b>Total</b>	<b>1,572,816.36</b>	<b>1,258,253.09</b>	<b>80.00%</b>	<b>376,812.74</b>	<b>23.96%</b>	<b>881,440.34</b>	<b>56.04%</b>	<b>881,440.34</b>	<b>56.04%</b>	<b>314,563.27</b>	<b>20.00%</b>

Overall, as can be seen from the table, through the contribution deriving from the existing action plans (column 3) and the direct impacts of the actions by the CCC (column 5), the Municipality of Bologna is able to reduce 1,258,253 equivalent tonnes of CO<sub>2</sub>, a value corresponding to the emissions reduction target indicated in column 2. The strategies for reducing residual emissions, identified in column 6, will be analysed in a dedicated section of Module B (see in particular *B-2.3 – Strategy for residual emissions*).





### 3.3 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality

For the development and construction of the CCC, the Municipality of Bologna carried out an analysis of the stakeholders (and their involvement) at multiple levels: internally, considering the complexity of the municipal structure and all organizational structures, and externally, for the broader possible involvement of stakeholders and citizens.

#### Stakeholder Analysis

**Within the Municipality**, analysing their influence on the Mission. By influence in this case we mean the ability to influence, through the functions of each Department/Area or Sector, the energy and climate transition process of the city. Based on this criterion, the internal stakeholders have been divided into:

- **Key stakeholders:** stakeholders whose functions have a direct effect on the reduction of greenhouse gas emissions in the area (actions therefore included or which can be included in the future in the Action Plan portfolio and the related investments in the Investment Plan) and/or stakeholders who can implement actions of innovation of the governance, regulatory tools of the municipal body.
- **Systemic stakeholders:** stakeholders whose functions do not have a quantifiable impact on the reduction of emissions, but have a fundamental role in supporting the climate transition as their systemic actions provide "boosters" to the path towards neutrality, supporting the creation of networks and tools of governance or social innovation.

The analysis carried out is presented in table A-3.1a and in fig. 16. We would like to specify that, compared to the Action Plan model provided by NZC, the "system" and "network" columns have been eliminated, since the internal stakeholders all belong to the same "system"/"network" (i.e. technical structure and/or administrative internal to the Municipality). Even the "interest" column was not considered, as the Municipality of Bologna is involved in the front row in the coordination of the Mission.

The table also indicates which Departments/municipal areas/Sectors are directly involved in the Climate Transition Team, as already described in chapter 2. The influence of the internal actors and therefore of the Municipality of Bologna as a whole, is extended to the entire territory of the Mission.

A-3.1a: Analysis of internal stakeholders (Departments, Areas and Sectors of the Municipality of Bologna)				
Departments/Municipal Areas	Municipal Sectors	Key stakeholders (whose actions have a direct impact on emissions reduction or regulatory or governance innovation)	Part of the Climate Transition Team	Systemic stakeholders (they do not have functions that have a quantifiable impact on the reduction of emissions but play a transversal support role)
Chief Administration Office			X	
Personnel and organization				
Financial resources				
Programming and statistics				



<b>Integrated urban security</b>				
<b>Secretary-General Office, inhouse companies and procurement</b>				
<b>Urban planning, home, environment and heritage</b>	Urban Planning Office			
	Services for private buildings			
	Ecological transition and climate office (TEUC)		X	
	Housing policies			
	Heritage			
<b>Public works, greenery and mobility</b>	Sustainable mobility and infrastructure			
	Public buildings			
	Public Properties Management			
<b>Culture, sport and promotion of the city</b>	Culture and creativity			
	Libraries and cultural welfare			
	Sport			
	Europe and international		X	
	Civic Museums Bologna			
<b>Welfare and promotion of community well-being</b>	Social service			
	Health, well-being and autonomy of each individual			
<b>Education and new generations</b>	Education and new generations			
<b>Neighborhoods</b>				



Figure 16: Analysis of internal stakeholders for influence on the city's climate transition process (Departments, Areas and Sectors of the Municipality of Bologna)

Based on the analysis, we therefore proceeded on two levels for the involvement of internal actors:

- through a transversal process of engagement of all Departments, Areas and Sectors with a series of Focus Groups on the Mission; a Focus Group also involved the Municipal Council, the executive body of the Administration.
- with a more targeted dialogue with the Sectors involved in actions and investments included in the CCC, first through the updating of the questionnaire sent during the application phase to the Mission and subsequently with 1:1 meetings for in-depth analysis of actions and investments.

These processes, objectives and related outcomes are described in chapter 2 and in Module C-1.

**Regarding stakeholders that are external to the Municipality**, an initial mapping of potentially interested parties was carried out. This was helpful to continue what was started in the application phase and expand the co-planning process with the territory, understood as active citizenship, trade associations, businesses, third sector bodies, etc. (non-exhaustive list).

Table A-3.1b presents this mapping, carried out at the beginning of the process, on the basis of their influence in reducing emissions and the interest demonstrated in participating in the process of climate transition and construction of the CCC. The table also shows, for each stakeholder, the reference network and the emissions sector it affects. The mapping was initially carried out in order to involve above all the subjects (from public to private) with a significant potential to reduce emissions with particular attention to priority sectors for climate neutrality, based on the emissions inventory (Module A-1), in particular buildings, transport, waste and waste water. For this reason, the results only show subjects with high or medium influence on the climate transition path. This initial analysis identified 80 stakeholders, who are listed below with progressive numbers for privacy reasons.



<b>A-3.1b Initial analysis of external stakeholders for the development of the CCC</b>				
<b>Network</b>	<b>Stakeholder no.</b>	<b>Influence</b>	<b>Interest</b>	<b>Emission sector it affects</b>
<b>Trade associations</b>	1	High	Medium	transversal
	2	High	Medium	transversal
	3	High	Medium	transversal
	4	High	High	transversal
	5	High	Medium	transversal
	6	High	Medium	Buildings
	7	High	High	transversal
	8	High	Medium	transversal
	9	High	Medium	transversal
	10	High	Medium	transversal
	11	High	High	transversal
	12	High	Medium	transversal
	13	High	Medium	transversal
	14	High	Medium	transversal
<b>Hospital/healthcare sector</b>	15	High	High	transversal
	16	High	High	transversal
	17	High	High	transversal
	18	Average	High	transversal
<b>Public entities</b>	19	High	High	Buildings
	20	High	Medium	transversal
	21	High	High	transversal
	22	High	High	transversal
<b>Transport and mobility infrastructure managers</b>	23	High	High	Transport
	24	High	High	transversal
	25	High	Low	Transport
	26	High	High	transversal
<b>Businesses, industries, crafts, trade</b>	27	Average	Low	Transport
	28	High	Low	Buildings
	29	High	High	transversal
	30	High	Low	IPPU
	31	High	Low	Transport
	32	Average	Low	transversal
	33	Average	Low	Buildings
<b>Banks/finance institutions</b>	34	High	Medium	transversal



<b>A-3.1b Initial analysis of external stakeholders for the development of the CCC</b>				
<b>Network</b>	<b>Stakeholder no.</b>	<b>Influence</b>	<b>Interest</b>	<b>Emission sector it affects</b>
	35	High	Medium	transversal
	36	High	High	transversal
	37	High	Medium	transversal
<b>Cooperatives</b>	38	Average	High	transversal
	39	Average	Low	Transport
	40	Average	Low	Transport
	41	High	High	transversal
	42	Average	Low	Buildings
	43	Medium	Low	Buildings
<b>Energy Operators</b>	44	High	Medium	Buildings
	45	High	Medium	Buildings
	46	High	Medium	Buildings
	47	High	High	Waste and wastewater
	48	High	High	Buildings
	49	Average	Low	Buildings
<b>Professional orders</b>	50	Average	Medium	transversal
	51	Average	Medium	Buildings
	52	Average	Medium	AFOLU
	53	Average	Medium	Buildings
	54	Average	Medium	transversal
<b>Labor unions</b>	55	Average	Medium	transversal
	56	Average	Medium	transversal
	57	Average	Medium	transversal
<b>Public/public shared companies</b>	58	High	High	Buildings
	59	Average	Medium	transversal
	60	Average	Medium	Buildings
	61	High	High	Buildings
	62	High	High	Buildings
<b>Third sector (associations, foundations, social enterprises, ...)</b>	63	Average	Low	Buildings
	64	High	Low	Buildings
	65	High	Low	Buildings



<b>A-3.1b Initial analysis of external stakeholders for the development of the CCC</b>				
<b>Network</b>	<b>Stakeholder no.</b>	<b>Influence</b>	<b>Interest</b>	<b>Emission sector it affects</b>
	66	Average	High	transversal
	67	Average	Low	Buildings
	68	Average	Low	transversal
	69	Average	High	transversal
	70	Average	Low	Buildings
	71	Average	Medium	transversal
	72	Average	Medium	transversal
	73	Average	Medium	transversal
	74	Average	Medium	transversal
	75	Average	Low	Buildings
<b>Universities and research centers</b>	76	High	Low	transversal
	77	Average	Medium	transversal
	78	High	High	Buildings
	79	Average	Low	transversal
	80	High	High	Buildings

The following figure shows the mapping of the external stakeholders identified in table A-3.1b based on the level of influence on the reduction of emissions and the level of interest in joining the Climate Mission in this phase. The level of interest was also assessed through exchanges and bilateral 1:1 meetings with the various parties, carried out during 2023.

From this first mapping phase, around twenty subjects emerged with high influence and high interest (yellow box in fig17), with whom we proceeded to explore their potential contribution to the construction of the CCC through further bilateral meetings. Around twenty subjects, despite having a medium or high influence on emissions, demonstrated a low interest in joining the Mission (grey area of the graph) and therefore did not continue with the discussions. Stakeholders with medium/high interest and influence (green, orange and white boxes in fig. 17) were invited to further Mission events with the aim of increasing interest or activating potential collaborations to support the Mission.

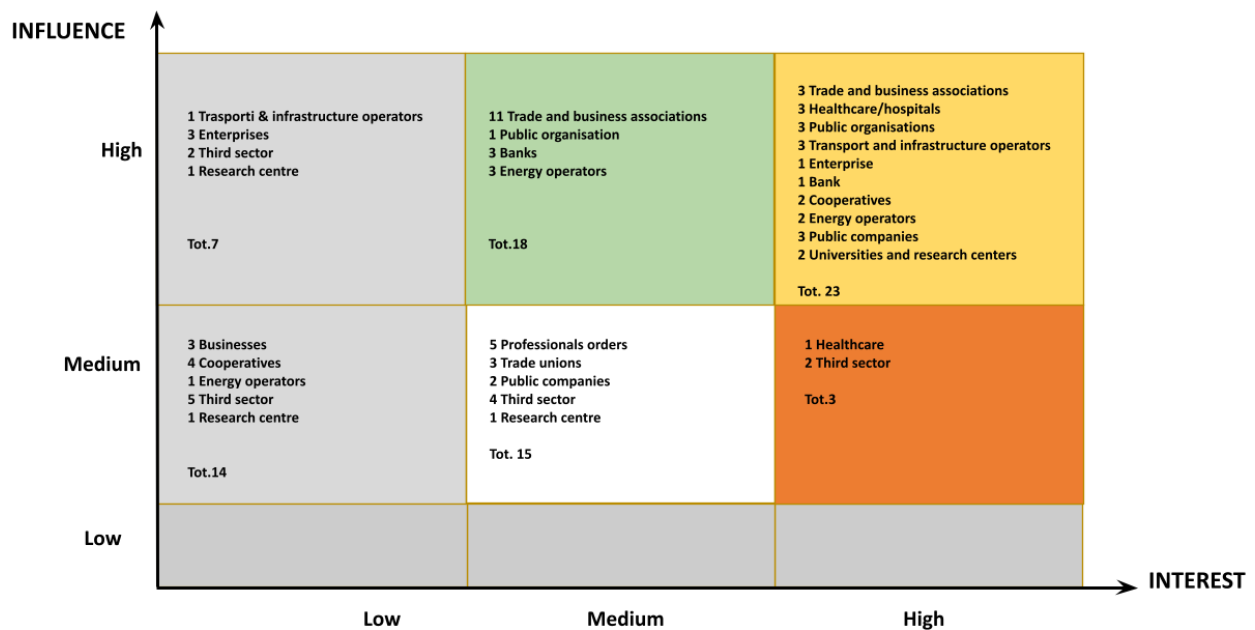


Figure 17: Mapping of external stakeholders by influence and interest

In parallel with the 1:1 meetings which deepened the dialogue with the subjects interested in joining the CCC with actions and commitments, processes were activated that could identify and engage other stakeholders who may have been left out of the first analysis. The objective was to expand this mapping as much as possible and activate a widespread process of involvement also for those subjects who individually have a more limited influence on the key emission sectors of the city, but who can play an important support role or provide a significant contribution as a whole.

These processes are described in depth in Module C-1 (ref. External governance at local level) and have achieved the following results in terms of stakeholder engagement:

- the Mission launch event (19 December 2022): around 100 participants from around 50 entities/organisations;
- the Envisioning event (5 June 2023): 85 participants from 56 organisations;
- the Call to action Launch event (27 October 2023): 130 participants from 83 organisations;
- the Call to action (October-December 2023): to which over 80 organizations responded.

In total, all these processes made it possible to expand the first mapping, reaching a total of around 300 subjects active in the municipal territory.

Of these stakeholders, 24 joined the first version of the CCC, becoming Signatory Partners (ref. Commitment Document), i.e. contributing with actions and investments that have an impact on the reduction of greenhouse gas emissions within the municipal perimeter of Bologna (Ref tab A-3.2 and commitment document). The following table highlights the signatory partners.

Another 70 stakeholders support Bologna Missione Clima having joined the Call to Action with actions consistent with the Call's criteria. These are mostly behavioural actions or actions which are currently not quantifiable in terms of emissions reduction (Annex 4).



<b>A-3.2: Signatory partners of the Climate Mission</b>		
<b>System</b>	<b>Abbreviated name</b>	<b>Extended name</b>
Energy systems	HERA	Holding Energia Risorse Ambiente S.p.A.
Built environment	CAAB	Centro Agroalimentare di Bologna S.p.A.
Transport	Bologna Airport	Aeroporto Guglielmo Marconi di Bologna S.p.A.
Built environment	CNA	CNA Associazione di Bologna-CNA Servizi Bologna-GSA
Energy systems	Illumia	Illumia S.p.A.
Built environment	Confagricoltura	Confederazione Generale dell'Agricoltura Italiana Bologna
Built environment	AUO BO	Azienda Universitaria Ospedaliera di Bologna – Policlinico Sant'Orsola
Built environment	AUSL BO	Azienda Unità Sanitaria Locale di Bologna
Built environment	IOR	Istituto Ortopedico Rizzoli
Built environment	Canali di Bologna	Consorzio della Chiusa di Casalecchio e del Canale di Reno
Transport	TPER	Trasporto Passeggeri Emilia-Romagna S.p.A.
Built environment	Emil Banca	Emil Banca Credito Cooperativo
Built environment	Ducati	Ducati Motor Holding S.p.A.
Built environment	Coop Alleanza	Coop Alleanza 3.0 Soc. Coop.





Built environment	ACER	Azienda Casa Emilia-Romagna della Provincia di Bologna
Built environment	CNR	Consiglio Nazionale delle Ricerche
Built environment	UniBo	Alma Mater Studiorum Università di Bologna
Built environment	ASP	ASP Città di Bologna - Azienda Pubblica di Servizi alla Persona
Built environment	Confindustria Emilia	Confindustria Emilia
Built environment	Toyota MH	Toyota Material Handling Italia S.r.l.
Built environment	CRIF	CRIF S.p.A.
Behavioral	Golinelli Foundation	Fondazione Golinelli
Built environment	Emilia Romagna Region	Regione Emilia-Romagna
Transport	RFI	Rete Ferroviaria Italiana S.p.A.

In addition to the Partners identified here, **citizens** have been involved in the construction of the CCC, in particular through the Citizens' Climate Assembly (ref. Module C-1). Specific tools to support the energy and climate transition of individuals have also been activated or strengthened, such as the Energy and Environment Showroom and the Energy Help Desk (ref. Module C-2).

All external involvement and participation processes and their outcomes are described in summary in the chapter 2 and in detail in Modules C-1 and C-2.

The communication and engagement strategy for subsequent updates of the CCC will consist of increasing the interest of the subjects to the left of the graph in Fig.17 to lead them to be key or systemic stakeholders, continuously updating the mapping to arrive at a co-design of the CCC increasingly widespread and inclusive, as well as strengthening the partnerships created during this first phase of development of the Contract.

### Description of systemic barriers and opportunities

In order to identify the barriers to climate neutrality and the opportunities, the Municipality of Bologna and the Transition Team have used and created synergy between the following processes activated within the Mission (Ref. Modules C):

- The Focus Groups, activated between December 2022 and May 2023, with representatives of all sectors of the Municipality of Bologna and representatives of the City Council;



- the “Ecosystem Innovation Bologna” event (23 March 2023), organized within the European project CITIES 4.0, which involved city actors dealing with research and innovation in the built environment;
- the Envisioning event “Bologna Missione Clima. Health, rights and the economy put to the test of the climate crisis” (5 June 2023), which involved around eighty representatives from the world of research, institutions, the third sector and the local economy;
- the network of nine Italian cities participating in the Mission and the Let'sGOv project, which was an opportunity to analyze the common barriers that Italian cities are facing on the path towards neutrality;
- as regards citizenship, important insights on perceived barriers emerge from the process and outcomes of the Citizen's Assembly for the climate, as well as from the requests received at the Energy Desk, activated in March 2023 by the Municipality. Furthermore, a further analysis tool is the Survey on the quality of life in the Municipality of Bologna and in the metropolitan area, carried out every year by the Municipality and the Metropolitan City of Bologna, in which specific questions on the climate theme were included in 2023.
- the transversal and sectoral barriers were also collected by the individual partners participating in the Mission, during the process of collecting actions and investments, through specific forms.

In continuity with the subdivision of sectors expressed by NZC, the main structural, political, economic and financial barriers that have emerged from public and private stakeholders, both in the reduction of emissions and in the use of capital to support the Mission, are presented below. These will subsequently be linked in the Investment Plan to the specific systemic levers indicated by NZC, namely Governance & Policy, Finance & Funding, Social Innovation, Democracy & Participation, Technology & Infrastructure, Learning & Capabilities.

For each barrier, a solution for overcoming it is also reported and therefore a reference to the specific actions that the Municipality or stakeholders are carrying out in this direction.

To catalogue the barriers, the initials of the reference sector were used (T for Transversal, B for Buildings, MT for mobility and transport, etc.) followed by the progressive number of the barriers.

### **Transversal barriers**

In this section, all those barriers that transversally affect one or more of the emission sectors have been collected.

#### **Barrier T1 - Political and regulatory framework**

The first barrier found at a transversal level is that relating to the constantly changing political and regulatory framework at European, national and regional level in relation to the energy and climate transition. The rapid evolution of legislation at European level and the long processes of transposition of the regulatory framework at national level; the uncertainty of the national framework regarding rules, incentives and supports; the complexity of coordination between the different administrative levels (national, regional, local) and the limited involvement of local authorities in the national processes of policy formation and updating; these and others are factors that determine a strong complexity for local actors in planning and supporting a transition that necessarily requires a long-term perspective. The fragmented nature of Italian laws on renewable energy, both in terms of the authorization procedures that must be respected but also in terms of location criteria and available incentives, makes the application of the rules and consequently the implementation of the interventions complex. This also applies to the development of new solutions related to self-production, self-consumption and sharing of energy from renewable sources which are not fully expressing their potential, especially due to legislative gaps. In Italy there is still no Climate Law which, as happened in other European countries, can define, sector by sector, the actions and tools, at national level, to achieve climate neutrality, also by transferring the different forms of economic support from activities and actions that aggravate the climate crisis, towards activities and actions that favor mitigation and adaptation to ongoing climate changes.



*Breaking the barrier:*

*Building effective multilevel governance is one of the key challenges for the success of the Climate Mission for all Italian cities adhering to the Mission, in order to overcome the barriers that ignore the skills and possibilities of local actors and depend on supra-local levels, such as the political and regulatory framework.*

*Approval of a National Climate Law and a Consolidated Energy Code/Text.*

*Action reference: Module C-1 "Multilevel governance"*

**Barrier T2 – Silos-functioning of public bodies**

The sectoral organization of the public body and the difficulty in creating synergies between policies and related sectors, which historically work in "silos", represent for the Municipality of Bologna, as well as for the entire Italian public sector, one of the factors that hinder logical systemic and transdisciplinary measures necessary and urgent to guide the climate transition of cities.

*Breaking the barrier:*

*Build innovative internal governance, through processes and structures that allow strengthening dialogue and coordination between Departments/Areas and Sectors of the Institution and working in synergy with common objectives consistent with the Climate Mission.*

*Action reference: Module C-1 "Building internal cross-cutting governance for the climate transition"*

**Barrier T3 - Electrical infrastructure**

**Another significant critical issue is the problem relating to the development of the electricity grid:** the current infrastructure, in fact, is not currently adequate for the objectives of electrification of consumption and production of energy from renewable sources consistent with a concrete prospect of climate neutrality by 2030, which is why however, urgent actions and investments are needed to massively upgrade the electricity grid. The 2023 Development Plan of Terna Spa (manager of the Italian high voltage electricity grid) is to enable the achievement of the European objectives of the "Fit-for-55" package (55% reduction in CO<sub>2</sub> emissions by 2030 compared to 1990 levels), encourage the integration of renewable sources, develop interconnections with foreign countries, increase the level of security and resilience of the electricity system and invest in the digitalisation of the network. Despite this ambitious plan, with over 21 billion euros of investments expected over the next 10 years, in many Italian cities, including Bologna, the local distribution network is already in serious difficulty with large areas critical and/or at risk of saturation.

This is also a significant obstacle for the actions of local authorities, citizens and businesses (including agricultural ones interested in agrivoltaics) which envisage the widespread installation of photovoltaic systems of all sizes, which risk being subject to delays and critical issues due to difficult connection of the systems to the electricity grid.

*Breaking the barrier:*

***Build an effective dialogue with all institutional levels and with the electricity grid operators in connection with the other cities of the Mission; multilevel governance action that includes all relevant actors.***

*Action reference: Module C-1 "Multilevel governance"*

**Barrier T4 - Economic barriers**

Added to this element are economic barriers: as regards public bodies, the barriers consist of often limited financial resources and poor ability to activate innovative financial instruments, for private individuals it is still difficult to access incentives and support due to a complex regulatory and administrative framework.

*Breaking the barrier:*

*Strengthen the Municipality's internal capacity to attract public funds; activation of public and private partnerships; activation of innovative financial instruments; multilevel governance actions to improve European, national and regional support tools; activation of information and support tools for citizens.*



*Action reference: Module C-1 “Building internal transversal governance”, “Multilevel governance”, “The Let’sGOv project”; Module C-2 “Energy Desk”; Module B-2: Public-Private Partnership Action.*

#### **Barrier T5 - Skills and competences**

In the public sector, there is still a limited diffusion of a climate culture among employees and a reduced ability to attract resources with transversal and specialized skills on climate issues. Furthermore, **skills should be strengthened in relation to the climate, energy and environmental criteria to be adopted in tenders to have full consistency with the neutrality objectives.** Even in the private sector, technical operators in the sector report a lack of training on the legal provisions and their correct application in the designing and engineering of solutions.

*Breaking the barrier:*

*Strengthening the public body's internal capabilities and internal resources to support the Mission; strengthening the external capabilities of sector operators, private individuals and professionals; improvement of dialogue and collaboration between public and private sectors.*

*Action reference: Module C-1 “Building an internal transversal governance”, “The Let’sGOv project”, Module C-2 “Building quality table”.*

#### **Barrier T6 - Poor propensity to change lifestyles**

Given the high level of attention and concern about the climate issue that emerged both from the "Survey on the quality of life in the Municipality of Bologna and the metropolitan area 2023" and from the Climate Assembly, the willingness to change one's lifestyles and behaviors do not seem to go hand in hand. This perception of decoupling between lifestyles, behaviors and climate changes, or in any case the lack of propensity to change consolidated habits, is a barrier that has emerged transversally in all the processes carried out and it could represent a strong obstacle to the acceleration of the energy and climate transition, especially as regards the residential buildings and transport sectors. The barrier is also connected to the following obstacles, identified during the focus groups and envisioning event:

- a still too technical communication of many aspects concerning the ecological and climate transition, not very accessible to citizens;
- the aspects of inequality linked to ecological choices, which still have a cost that is not always accessible to the entire population and/or organized entities.

The results of the Citizens' Assembly for the Climate highlight a significant demand for awareness, training and information tools, confirming this as one of the barriers most perceived also by citizens.

*Breaking the barrier:*

*In this context of profound change, correct information and continuous and widespread training represent important objectives to be pursued for the public, private sector and citizens. Furthermore, teaching relating to climate neutrality and all related issues must be included and strengthened within the school system.*

*Action reference: Module C-1 “Citizens' Assembly for the Climate”, Module C-2 (“Energy Desk”, “Energy and Environment Showroom”, “Chiara.eco”, etc.).*

#### **Barrier T7 - Data**

Another critical issue that has emerged at a transversal level is the availability of data: this issue has recently assumed significant weight also at a national level given the scarcity of relevant data especially relating to recent European funding linked to the National Recovery and Resilience Plan (NRRP). At municipal level, the criticality is particularly marked with respect to the energy issue and the ability to plan and monitor the energy transition necessary in cities. In order to collect and monitor the city's energy consumption data, useful for the preparation and continuous updating of municipal energy plans and strategies, the Municipality must make written requests to the public and private entities holding the data (e.g. environmental agencies, research bodies, energy distributors, etc.), with significant limitations in terms of time and operations. This does not promote effective planning and limits the ability of institutions to monitor and modify strategies on the go. The data barrier is also found in the mobility sector, where a complexity of data retrieval and estimation emerges, both in the public sector and by Mobility Managers within private companies.



*Breaking the barrier:*

*Building a digital twin of the city; activate agreements between entities that allow a continuous flow (or with a predefined cadence) of relevant data, overcoming the current system of timely access to information via explicit request.*

*Action reference: Module C-1 "Multilevel governance", "The Let'sGOv project"; Module B-2 "building a digital twin of the city".*

### **Barriers for Buildings (B)**

The city of Bologna has a rather old housing stock or in any case, from an energy point of view, far from the performance currently expected of newly constructed buildings. In a nutshell, the housing stock can be divided into:

- historic city, which includes all the housing stock built up until the first post-war period of the last century and which expands for some stretches outside the belt of avenues, built on the site of the old city walls;
- fabrics made between the 1920s and up to the end of World War II, made with still substantially traditional construction techniques, placed in a crown around the historic core of the city;
- fabrics created from the post-war period up to the 90s of the last century: these are parts of the city partly planned with implementation tools, interesting from an urban planning point of view, but not always from an architectural point of view, since the precise quality of the interventions does not always appears interesting or remarkable from an energetic point of view;
- interventions carried out in the last 20 years and still in progress: that is, the interventions now included in the logic of compliance with now essential quality requirements.

From an energy and accessibility point of view, in broad terms it can be stated that all building production from the Second World War until the 1990s (with the necessary distinctions of the case) presents problems from an energy point of view, as it is carried out with archaic, non-particularly performing materials, little/no attention to the issue of thermal inertia and insulation, the containment of energy consumption, as these are issues not brought to the attention of public opinion or of interest either by builders or even less by the market.

All this therefore gives rise to a housing stock that is significantly deficient with respect to the aforementioned issues, not adequate to the reference standards now acquired and therefore with a great and pervasive need for renovations and adaptation.

#### **Barrier B1 – Regulatory constraints**

As in many Italian cities, especially in the historic center of Bologna, there is a **large number of buildings subject to restrictions** pursuant to Legislative Decree. 42/2004 "Code for Cultural Heritage and Landscape", the subject of the authorization procedures established by the Code itself, which see the necessary opinion of the competent Archaeological, Fine Arts and Landscape Superintendence. To these are added buildings that the PUG has identified pursuant to LR 24/2017 as, although not included in the lists referred to in part II of the Legislative Decree. 42/2004, present a particular historical-architectural, or cultural and testimonial interest, specifying for each of them the categories of eligible recovery interventions, the architectural or typological elements to be safeguarded, the methods of intervention and the usable materials, as well as the destinations of use compatible with the structure and type of the building and with the environmental context. For these buildings bound by the PUG, the RE has imposed various limitations on the installation of photovoltaic panels on the roof, with the aim of preserving the facades overlooking the public space.

*Breaking the barrier:*

*The concept of "visual disturbance" linked to photovoltaic panels, still contained in some regulations (e.g. paragraph 5 of art. 7 bis of Legislative Decree 28/2011) must be overcome; this is consistent with recent jurisprudence and with progressive technological development which makes the panels increasingly easier to integrate into the roofs or facades of buildings.*

*A new balance must be sought and defined between the conservative approach and the design approach in reference to the rules for the protection of cultural, architectural and landscape assets and*



energy production systems from renewable sources. Review of municipal tools to allow the widest development of renewable potential.

*Proactive action for the modification of regulatory instruments attributable to the different institutional levels (regional and national).*

*Action reference: Module C-1 "Multilevel governance", Module C-1 "PUG and RE review" (To give greater impetus to the installation of photovoltaics on existing buildings and align planning tools with the Mission, the Municipality of Bologna has the process of revising the tools has started, easing the possibility of installing renewable energy in general and on buildings that are bound by the Municipality".*

### **Barrier B2 - Investments**

Energy efficiency involves important investments with a return time horizon that is not short and which neither public administrations nor the private sector can always support. The inflationary wave that is characterizing the construction sector in recent months is not helping to stabilize virtuous plans to improve the efficiency of existing buildings. In the redevelopment of private buildings, individual citizens have been encouraged in recent years to adopt energy efficiency practices for their properties through economic incentives established at a national level (so-called Facade Bonus or Superbonus 110%), but the number of adhesions in the municipal area of Bologna was limited (we are talking about around 2000 properties that had access to the 110% superbonus), thanks to the increase in the prices of materials and works and the procedural and regulatory complexity to access the incentives themselves. Citizens remain a fundamental player within emissions reduction programs and their involvement is crucial for the very efficiency of climate policies.

As regards public buildings, there is a lack of large investment plans explicitly oriented towards the construction of ZEB buildings.

*Breaking the barrier:*

*Strengthen, also through the network of Italian cities of the Mission, the dialogue with the competent Ministries to improve the system of concessions and incentives for energy efficiency, strengthening the economic support intended for renewable sources and progressively reducing, until eliminating, that linked to fossil sources.*

*Action reference: Module C-2 "Energy Desk". Module C-1 "Multilevel governance", "ANCI - ER training".*

### **Barrier B3 - Fragmentation of properties**

Many buildings in the municipal area are non-exclusively owned: this condition is specific not only to public buildings, such as those intended for public residential construction, but also to private ones, where condominium owners often do not agree on the interventions to be implemented. The fragmentation of ownership makes it more complex not only to implement redevelopment improvement projects but also projects that bring added value to the building itself, such as the installation of renewable energy sources.

*Breaking the barrier:*

*Comprehensive training and information actions aimed at citizens, managers of public residential buildings and condominium administrators.*

*Action reference: Module C-1 "Multilevel governance, ANCI - ER training"; Module C-2 "Energy Desk"*

### **Mobility and transport (MT)**

The projects that the Municipality of Bologna has put in place together with the stakeholders involved in this area of action are ambitious and long-term.

#### **MT1 Barrier - Behaviours**

The major barriers encountered are behavioural and cultural: **resistance to change** and **lack of awareness of one's own behavioural habits** have repercussions on the effectiveness of projects relating to the strengthening of local public transport and the development of infrastructures linked to soft mobility. According to a recent survey conducted by Doxa, 34.8% of the citizens of the Municipality use the car every day or almost every day for their travels, a percentage that rises considerably if we consider the respondents belonging to the Metropolitan City (51.4%). The use of the bicycle is decidedly



less frequent within the Municipality than that of the car: only 8.6% of citizens declare that they use it every day, 7.3% 3 to 4 days a week. Traveling using urban public transport is also infrequent: 40.1% of citizens of the Municipality declare that they rarely or almost never use it for their travel. Despite these data, only 10.2% (about a third) of those living in the Municipality of Bologna experience difficulties in traveling by public transport

Very often, the mere economic incentive is not sufficient to increase the use of public transport: **the crowding, safety and regularity of the journeys** represent the first signs of intolerance on the part of citizens who, often for these reasons, do not turn to public transport.

Alternatives to local public transport (such as, for example, shared means of transport) are not free from problems such as, for example, **availability during rush hours**, integration in the use of IT platforms, road safety.

*Breaking the barrier:*

*Information and training of citizens, education in schools, innovative sustainable mobility projects, intermodality, strengthening of sustainable mobility services.*

*A great resource are the agreements between transport companies and private companies, schools and public bodies: creating synergies with entities that include a large number of citizens, of different age groups, means creating a common awareness of the importance of our environmental actions. Added to this is also the practice of remote working, the objective is to spread it as much as possible in order to guarantee not only a reduction in emissions and city traffic but also a better balance between life and work and better social well-being which has an impact on the reduction of social costs related to health.*

*Action reference: Module C-1 Climate Assembly, Module C-2: Energy and Environment Showroom, EU sustainable mobility projects.*

### **MT2 Barrier – Costs and financing constraints**

An obstacle reported by both internal and external stakeholders is the factor of high investment costs and the need for significant financing in order to guarantee the economic sustainability of the actions in the long term. This barrier is linked to the context of European, national and regional policies and governance in support of the transition, as the change in political will and the regulatory framework significantly impacts the ability to carry out these interventions. In relation to the funds of the National Recovery and Resilience Plan (NRRP), the short timescales for the implementation of the financed interventions are a further challenge for innovative projects in this sector, which still have to deal with long and complex administrative procedures.

*Breaking the barrier:*

*Increased ability to attract public funding and activate public-private partnerships*

*Action reference: Module C-2: EU projects for sustainable mobility, Module B-2: PPP*

### **MT3 Barrier - Technologies**

Among the barriers highlighted by transport companies with respect to the renewal of their fleet of vehicles, there is certainly the rapid technological development and the high rate of renewal and maintenance that electric, hybrid or hydrogen vehicles require. Battery disposal has recently emerged is onerous in economic and environmental terms: the hope in the coming years is to make the process more efficient also thanks to technological innovation.

*Overcoming the barrier: collaboration between the world of research and innovation with public and private entities*

*Action reference: Module B-2: decarbonisation actions of Local Public Transport (TPer) and Private Transport (Airport, Ducati, Emil Banca Credito Cooperativo, University of Bologna); authorizations for installation projects in areas intended for the charging of electric vehicles with related stalls and columns.*

### **MT4 Barrier - Infrastructure and urban density**

A further barrier in the transition to zero-emission mobility is represented by the high density of the urban fabric of the Municipality of Bologna, by the limited spaces available for new transport infrastructures and therefore by the high conflict between the different uses of the land (green areas, parking lots etc.). This imposes a choice between different uses and different interests, which are often difficult to



reconcile, which is why the development of new infrastructures (e.g. trams, cycle paths, etc.) can be conflicting.

The “Città 30” project and new cycle paths, as well as the construction of new tram lines, will also improve the city from an infrastructural point of view.

*Breaking the barrier:*

*involvement of citizens in the development of municipal policies, participatory processes, synergies between objectives of the Climate Mission and other local policies by jointly identifying the co-benefits.*

*Action reference: C-1 “Citizens’ Assembly for the Climate”, C-2 “Participatory budgeting”, decarbonisation of Local Public Transport (LPT) and sustainable mobility projects.*

### **Waste and Wastewater (W)**

Among stakeholders operating in the waste sector, the most significant barrier is the **cultural one**.

The practice of separate waste collection must be both communicated effectively, through training sessions, and supported with the appropriate tools and widespread actions across the territory, also involving schools and companies.

At a technical level, plants for the recovery and valorisation of waste and for the treatment of waste water may encounter **delays in the authorization process** and **rigidity in the implementation times** of projects tied to public funding; furthermore, **laws and regulations** could also be blocking types of experimental plants with a high technological concentration. Added to this are the barriers of **technical and plant complexity** that are not always predictable.

Particular aspects concern the reduction of food waste, education on reuse, recycling and recovery and the promotion of healthy lifestyles from childhood. Awareness initiatives must involve all the city’s stakeholders. sector operators (catering, canteens, commercial establishments) to increase awareness towards more sustainable practices.

*Overcoming the barrier: spreading a culture of efficiency and circularity in the prevention and management of urban outputs (waste and wastewater).*

*Action reference: Module C -2 “Energy and environment showroom”; “Zero waste” competition; training and information campaigns for citizens and businesses; municipal regulatory and planning tools as prevention strategies in the production, recovery and reuse of materials and water.*

### **Industrial Processes and Product Use (IPPU)**

*Since this sector is not relevant in terms of emissions within the border of the Municipality of Bologna (ref. Module A-1), as the majority of production companies are located in the Metropolitan City area, no specific barriers have been identified.*

### **Agriculture, forestry and other land uses (AFOLU)**

“Nature-based solutions” (NBS in English) represent a relatively new area of interest within the urban planning of our cities and the Municipality of Bologna has begun to apply the principles by prescribing specific sustainability measures linked in particular to urban drainage and to the tree balance of the interventions, which must always be positive.

Examples of urban and peri-urban “forestation” are today limited to hilly areas or large infrastructures (Airport, Motorways).

There are physical and territorial limits of a city that has consolidated land uses, while greater opportunities are offered by the metropolitan dimension.

*Breaking the barrier:*

*To significantly increase peri-urban forested surfaces it is necessary to operate in a metropolitan dimension and, as regards municipal borders, involve buildings in greening scenarios (green roofs and green walls).*

*Actions reference: in order to mitigate these barriers and increase the “AFOLU” measures, the Municipality of Bologna has made its properties in the metropolitan area available and has moved with its own territorial planning tools (PUG and RE) by imposing for example the creation of multifunctional green strips in the case of new infrastructures and industrial expansions in rural areas, and making mandatory in some cases the creation of “green roofs and tree-lined green roofs in the city”.*





### **The main opportunities and co-benefits**

Through the paths described at the beginning of this chapter, together with the barriers, an attempt was made to identify, together with internal and external stakeholders, a series of opportunities and co-benefits deriving from the climate transition path linked to the CCC. It has often been underlined how these opportunities represent a virtuous circle of which Bologna Missione Clima becomes both facilitator and beneficiary at the same time. Furthermore, the Mission represents an opportunity to address and accelerate the overcoming of some of the barriers described in the previous paragraphs.

Below is a list of the opportunities and co-benefits identified.

### **Governance**

- Work in an integrated and transversal way, within the municipal administration and in connection with external and market actors;
- Experiment with new forms of collaboration between public and private;
- Facilitate social exchanges with the aim of enabling citizen participation and ensuring that Bologna Missione Clima is transferred to city level;
- Rethink current governance, democratize more the city and energy system, putting people at the center, so as to make them capable of contributing to climate neutrality.
- Develop a polycentric city that can be increasingly self-managed locally;
- Co-responsibilize the entire city system and make choices for change aimed at the long term.

### **Health and wellness**

- Air quality and urban greening are two aspects that mutually benefit from the Mission, having a considerable positive impact on the health of citizens.
- The new actions for active mobility and the promotion of public transport will have an impact on the quality of life and health of people, but also on the reduction of climate-changing gas emissions.
- Putting people's lives and their rights at the centre, reducing inequalities, promoting social well-being and reducing the risk of energy poverty in the most fragile communities.

### **Education and training**

- Form the basis of an information network and an infrastructure of innovative services for citizens through neighborhood homes.
- Raise awareness and engage citizens through cultural, museum and sporting events.
- Spread the Mission and raise awareness among citizens by integrating environmental and climate education into the school system that has an effect on the care of the territory, the protection of nature and the reduction of emissions.
- Communicate the contribution that certain policies can make to health and to Bologna Missione Clima.

### **Market and jobs**

- Experiment with innovative financial instruments, leveraging participation in the Mission and recognition of the quality of the CCC by the European Commission.
- Recognize and support virtuous economic activities in terms of reducing climate-changing gases.
- Increase workers' green skills.
- Develop a local market linked to renewable sources.
- Making the city and businesses more resilient to the dynamics and trends of energy prices linked to fossil fuels through the local diffusion of energy production plants from renewable sources.

### **Energy efficiency of buildings**

- Accelerate the energy efficiency of Bologna's buildings, avoiding the social exclusion of the most vulnerable.
- Fight against energy poverty.



**Communication**

- Communicate neutrality to citizens in accessible, clear and inclusive language.

**A-3.3**

The city's participatory model for climate neutrality is described and visually represented in Module C-1.



## 4 Part B – Pathways towards Climate Neutrality by 2030

The Municipality of Bologna has followed an innovative approach for the Mission based on three pillars:

- **innovative collaboration and governance** which concerned both the internal organization of the Municipality, with a transversal involvement of all municipal sectors, and the external organization with the identification of strategic partners and their subsequent active participation in the development of the CCC. Among the external stakeholders, a fundamental role is played by citizens who have been widely involved with innovative and unique initiatives in the Italian panorama, such as the Citizens' Assembly for Climate;
- **importance of co-benefits (also called indirect impacts)** of actions on transversal areas (e.g. health, inclusion, employment, energy poverty, etc.);
- **transversality of actions**, exploiting all levers of change such as technologies, economic resources/financing, governance/policy and regulations, social innovation, capacity building and information.

These elements are a founding part of the so-called **Theory of Change** (NZC), the model drawn up by NZC to identify changes and related impacts in terms of emissions reduction and co-benefits generated by actions, considering all levers of change, across all sectors/fields of action (Buildings, Waste and Wastewater, Transport, IPPU and AFOLU). The Theory of Change represents a source of inspiration and a tool for understanding all types of paths, technological and others, that actions contribute to create as a whole, highlighting their possible impacts in the short and medium term, up to 2030, on the basis of which to define appropriate monitoring indicators.

Part B represents the core of the Action Plan and describes the impact scenarios (B-1), the portfolio of actions introduced by the Municipality and the stakeholders (B-2), as well as the indicators for the periodic monitoring of the CCC (B-3).

In order to introduce part B, the most strategic areas of action contained in the portfolio are summarized below (then included in Module B-2 in the form of tables) which contribute to building a concrete perspective of emission neutrality on the territory of the Municipality of Bologna.

### Strategic areas of action included in the portfolio

#### Regulatory innovation

For a Public Administration, the first area in which to define its objectives and allow them to be translated into actions is its own planning and regulation, as well as proposals and stimulus towards the subjects who legislate at regional and national level.

Aware that regulatory innovation can accompany and stimulate technological and social innovations, the municipal administration has started and intends to continue active discussions with all other institutional levels, in order to build and update a regulatory and planning framework consistent with the objectives of reducing GhG emissions and increasing national and local energy autonomy through renewable sources.

The importance of this area of action is most evident in recent years, characterized by a crisis in the energy market linked to fossil fuels and related to global geopolitical instabilities which today manifest themselves in particular with the Ukrainian conflict and tensions in the Middle East.

Of absolute and recent importance, for example, was Law 34/2022 "*Conversion into law, with amendments, of Legislative Decree 17/22, containing urgent measures to contain the costs of electricity and natural gas, for the development of renewable energy and for the relaunch of industrial policies*".



This standard contains important forms of simplification for the installation of systems from renewable sources on buildings, in industrial areas, quarries, landfills, etc. which certainly contribute to accelerating the implementation of national potential, even if we are still operating in the absence of interministerial decrees, and subsequent regional criteria, of zones and areas suitable for the installation of renewable energy systems.

Also of great interest are the “Guidelines on Agrivoltaic Systems, published in June 2022<sup>6</sup>. The Municipality of Bologna believes that agrivoltaics represents a model of synergy between agri-food production and clean energy production capable of concretely modifying energy and climate scenarios at a national and local level, also considering that a quarter of the municipal territory is made up of agricultural areas (over 30 km<sup>2</sup>).

The Municipality has also activated various discussions with the national level, which currently focus on the drafting specific plans, such as the National Plan for Adaptation to Climate Change (NPACC) and the Integrated National Energy and Climate Plan (INECP) and on an overall review of the different forms of public economic support regarding renewable energy.

Within the conversation with the national institutional level, the Municipality of Bologna is highlighting that the current climate, energy and social emergencies require us to focus above all on renewable technologies that have a concrete possibility of rapid and widespread development on the national territory and that the technology that responds best to these requirements is photovoltaics, in its various forms: integrated into buildings, car parks, industrial environments or developed as “*innovative agrivoltaics*” in synergy with agri-food production and agriculture. The Municipality is therefore proposing the establishment of a control room for updating the complex system of economic support for the development of renewable sources, even with the same resources.

The Municipality's proposals are aimed at increasing and/or stabilizing the national tax bonuses for building redevelopment, and in particular the Photovoltaic Bonus for the residential sector, even going beyond 50% (e.g. 75%), or by contracting the time frame of the deductions (for example from 10 to 5 years), possibly recovering resources from the elimination of now obsolete forms of economic support to fossil fuels, especially in those cases in which a transition towards renewables is more cost-effective for beneficiaries. It is also proposed to strengthen the forms of economic support aimed at heat pump systems (air-water, water-water, air-air, geothermal), reaching deductions of 75% and therefore higher than the current Ecobonuses (65%) and Home bonus (50%), seeking economic balance through the reduction (up to the progressive elimination) of incentives for gas boilers.

Other proposals from the Municipality of Bologna regarding possible regulatory innovations at a national level that can provide a significant beneficial impact for the 2030 neutrality objective are:

- the overcoming, from a regulatory point of view (e.g. paragraph 5 of art. 7 bis of Legislative Decree 28/2011), of the “visual disturbance” linked to photovoltaic panels; this is consistent with recent jurisprudence and with progressive technological development which makes the panels increasingly easier to integrate into the roofs or facades of buildings.
- The search for a new balance between a conservative approach and a design approach in reference to the rules for the protection of cultural, architectural and landscape assets and energy production systems from renewable sources. The assessments of the Archaeological, Fine Arts and Landscape Superintendence are important for the protection of cultural heritage and landscape assets, but towards energy production plants from renewable sources, a more conservative rather than planning approach still prevails; it is necessary to take into account (as highlighted by recent jurisprudence) “*a system and a collective sensitivity that have accepted these technologies as normal elements of the landscape, the expression of an evolution that inevitably also involves the aesthetic-constructive aspects of buildings*”. The Municipality of Bologna also intends to propose the possibility of considering photovoltaic panels as “temporary” systems, which therefore, within the scope of national regulations, do not necessarily imply permanent changes to the landscape and architectural styles of buildings. This is both because the panels by their nature have a limited useful life in time (around 25

---

<sup>6</sup> [https://www.mase.gov.it/sites/default/files/archivio/allegati/PNRR/linee\\_guida\\_impianti\\_agrivoltaici.pdf](https://www.mase.gov.it/sites/default/files/archivio/allegati/PNRR/linee_guida_impianti_agrivoltaici.pdf)



years), and because they can be considered as a current but transitory energy solution in reference to the evolution of other technologies still in the development phase.

- The possibility of providing specific financing opportunities intended solely for new zero-emission buildings, to begin to orient the market and create virtuous examples throughout the national territory of what will be foreseen by the next European directives.

The Municipality of Bologna, awaiting the definition of the national location criteria, also participated with specific proposals in the work which led to the approval on 23 May 2023 of the Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 "*Specification of location criteria to guarantee maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and environmental value of the territory (Council Resolution no. 214 of 13 February 2023)*". The objective of the resolution is to promote the maximum development of photovoltaics in the territory to allow a real energy transition of the entire system and its innovative elements allow, at city level, a significant increase in the local photovoltaic production. For example, the resolution gives a greater boost to the development of photovoltaics in abandoned or reclaimed quarries, which cover an area of approximately 2.5 km<sup>2</sup> within the municipality of Bologna alone.

As regards the Municipality's own planning and regulatory tools, reference should mainly be made to the General Urban Plan (PUG) and the Building Regulations (RE).

The PUG and the RE provide for an innovative design approach aimed at orienting building interventions and transformations in the territory towards a positive balance of measurable climate performances (such as albedo, microclimatic well-being and RIE - Building impact reduction index, which measures the interventions buildings with respect to water runoff and greenery); from an energy point of view they also prescribe articulated levels of performance - higher than those imposed by national and regional regulations - to be achieved in the different types of intervention, even including negative emissions and positive energy balances from renewable sources. Through its planning and regulatory tools, the Municipality of Bologna pursues the objective of a progressive recovery of natural spaces, drainage and urban cooling performance; this is pursued by providing for an increase in the municipal tree balance, the greening of surfaces and buildings (green roofs and walls), an improvement in the albedo of materials, as well as the widespread application of Nature-based solutions - NBS.

During 2023, a revision phase of these tools began, consistent with the objective of achieving climate neutrality by 2030 as part of the Climate City Contract path, in particular through the expansion of the local photovoltaic field, the reduction of energy consumption in buildings, the strengthening of the energy infrastructure necessary for local production and the sharing of energy from RES (networks, transformation cabins, production plants), with a strong push for the installation of photovoltaic and solar on existing buildings.

In summary, by intervening on planning and regulatory tools and promoting interventions at the regulatory level by the competent actors, a large and widespread increase in the local potential for energy production from renewable sources is considered feasible which, taking into account the specific characteristics of the municipal area (total extension of 141 km<sup>2</sup>, 34 km<sup>2</sup> of agricultural areas, 57 km<sup>2</sup> of urbanized territory occupied largely by buildings and car parks), makes it theoretically and dimensionally possible to achieve, also benefiting from a progressive reduction in consumption, substantial energy autonomy through renewable sources, thus transforming the city from a center of prevalent energy consumption and emission production, to a generative and regenerative center of clean energy.

### Large local renewable energy production plants

#### **Energy Park and agrivoltaic systems**

The strategy of rapidly increasing local production of renewable energy finds its maximum expression in the Energy Park model proposed in collaboration with **Hera Group and other partners**, which foresees, through the wide engagement of other subjects and citizens, the multi-step development of energy parks serving the city and peripheral areas of the Municipality of Bologna. Each Energy Park will be defined by a standard configuration that includes:



- an area of land shared between agriculture and photovoltaic panels (innovative agrivoltaics) for the virtuous and synergistic production of agricultural products and renewable energy at the service of the community; the installation of photovoltaic systems will follow three successive phases at the end of which a total installed power of more than 1 GW is expected;
- a wooded area for the absorption of carbon dioxide, the protection of biodiversity, the regulation of the water cycle and usable space for citizens.

The underlying objective of such a project is the integration between the production of renewable electricity and agricultural production. Citizens are expected to be involved in several phases, starting from a crowd-funding campaign, up to the purchase of photovoltaic modules with consequent benefits in environmental and economic terms. Companies will be able to acquire shares of the Energy Park to supply themselves with renewable electricity at lower prices than market prices.

Also significant is the partnership with **Confagricoltura Bologna**, an important trade union organization of agricultural entrepreneurs which at municipal level has 60 members for a total of 1,140 ha and a theoretical photovoltaic potential of hundreds of MW. Confagricoltura aims at a widespread local installation of agrivoltaic systems, thus preserving the continuity of agricultural and pastoral cultivation activities on the installation site of the photovoltaic systems. Confagricoltura's attention towards agrivoltaic systems also arises from the awareness, shared with the Municipality of Bologna, that these systems can also contribute to the protection of biodiversity and adaptation to climate change, with particular reference to shading which can preserve the of soil moisture, allowing water savings for irrigation and greater resilience to drought events.

#### **“Power to Gas” system at the city's wastewater treatment plant**

**Hera Group** is planning to build an experimental system consisting of the two following plants at the Bologna Corticella wastewater treatment plant (IDAR):

- a plant that uses Power to Gas (PtG) technology to convert renewable electricity into synthetic natural gas (SNG), starting from "green" hydrogen, i.e. renewable, as it is produced on site through a hydrogen production plant powered by green energy certified with Guarantee of Origin. The plant uses waste water and renewable electricity to produce hydrogen and oxygen through an electrolyser. The hydrogen is sent to a subsequent conversion section into methane (biological methanation reactor). This conversion is achieved by exploiting the carbon dioxide contained in the biogas produced by the digestion of sewage sludge. The production of a renewable energy carrier (biomethane) is the main strong point. Other positive aspects, certainly not negligible, brought by the project are:
  - the increase in the pollutants reduction potential of the purifier;
  - the possibility of long-term storage of renewable energy and the reuse of "green" hydrogen obtained from the separation of CO<sub>2</sub> in the city gas distribution network;
- an upgrading plant for the production of biomethane, produced from biogas coming from IDAR digesters.

Hera plans to introduce the high quantities of biomethane produced by the two systems described above into the city gas network, as an alternative to methane of fossil origin.

#### **Expansion of the district heating network**

The project to expand the district heating network includes interventions aimed at creating the connection between the four district heating systems managed by the **Hera Group**, currently physically separated: CAAB-Pilastro, Berti-San Giacomo, Fiera and Navile (these last three respectively serve a portion of the historic center, the exhibition complex and the Municipality of Bologna). The project will be implemented through the laying of a few km of main network, which will increase the total development of the city's current district heating network by approximately 20%. The project includes



the increase in potential of the thermal generation section at the waste-to-energy plant (Waste to Energy Frullo), to power the four interconnected systems.

Through the interconnection of the networks, the recovery of the heat produced by the waste-to-energy plant, which currently powers only the CAAB-Pillastro, will be increased, as it will also power the other three systems currently running on methane gas. Furthermore, the pool of users that can potentially be connected to the network will expand.

### **Hydroelectric power plant in the historic center of the city**

The **Consorzio Canali di Bologna** (Bologna Canal Consortium) has almost completed the reactivation of the Cavaticcio hydroelectric power plant, which produces electricity by exploiting the drop of approximately 15 meters that the Cavaticcio canal makes at Largo Caduti del Lavoro, in the historic city center. The aforementioned power plant is the largest hydroelectric plant located in a historic center in Italy, and its reactivation demonstrates the company's concrete commitment to tackling the climate and energy crisis. The intervention is configured as a revamping of the current plant, obtaining a maximum operating power of approximately 1 MW. The Consortium's intervention is combined with the objectives of increasing energy produced from renewable sources, as the plant will produce a significant quantity of electricity, in the order of a few million kWh, available to the city; furthermore, it also satisfies the objectives of urban water regulation, providing an important contribution in relation to two of the biggest issues and problems of current times, energy and water.

### **Bologna Agri-Food Center - CAAB**

**CAAB** currently already has the largest photovoltaic rooftop system in Europe in use, amounting to 100,000 m<sup>2</sup> of surface area and 11,000 MWh of energy generated.

For the future, CAAB is aiming for full energy autonomy thanks to the construction of a biogas plant and a new photovoltaic system which, in the medium-term, will increase the MWh produced from 12 to 20. In particular, the main projects concern the creation of:

- a photovoltaic system, positioned on the roof of the main market building;
- a biogas cogeneration plant, built within the area and powered with organic waste produced by the fruit and vegetable market, as well as with the by-products of the agricultural companies located in the CAAB.

The systems described above will be integrated with a 500kWh electrochemical storage system; with this configuration the entire production of the two plants will be self-consumed, making it possible to satisfy 100% of the energy needs of the CAAB, whose main electrical consumption is related to: lighting internal lanes and common structures (loading areas etc.), street lighting, office lighting and auxiliary rooms of the management company CAAB spa. Furthermore, CAAB proposed a further action, the City Logistic project. This proposal involves the construction of photovoltaic shelters in the car parks around the site, covering an area of approximately 14,000 m<sup>2</sup>. The photovoltaic system on shelters will also be able to power charging infrastructures for electric vehicles.

### **Bologna Airport**

Bologna Airport aims to achieve complete decarbonisation by 2030 also through important electrification interventions, both related to buildings and transport. Specifically, the company envisages the decarbonisation of gas-fired power plants, the installation of photovoltaic systems for a total potential of approximately 5MW to date, with an installable potential of 20MW by 2030. Despite this, the supply of electricity from the public network is also necessary: the company commits to purchase exclusively certified green energy in the coming years. Also in the transport sector, the electrification objective is expressed concretely through the purchase of electric vehicles used by the company powered by e-charging columns installed inside the airport, both for the company vehicles and for airport carriers that carry out the passenger transport service.

### **Rete Ferroviaria Italiana SpA (RFI)**

RFI is an important presence for the city of Bologna and is engaged in a process aimed at integrating the principles of sustainability into its activities, also in a perspective of carbon neutrality of the railway



service. For this reason, RFI intends to promote initiatives in the municipal area for the production of renewable energy, mainly intended for self-consumption, in the areas of San Ruffillo and San Donato, for an estimated total power of 20 MW.

### **Public buildings**

#### **Innovative management of the municipal public building heritage**

One of the fundamental levers for "orienting the market" and encouraging innovation is certainly the *procurement system* of the public administration, both for works and management services, and the concession tool, being able to set the objectives of the decarbonisation of the heritage construction and public systems, therefore becoming central in new forms of public-private partnership. To this end, on 15 November 2023 the Municipality of Bologna published a public notice for the presentation of expressions of interest for a public-private partnership - regulated by art. 193 of Legislative Decree 36 of 2023 - for the unified management of maintenance services of the municipal buildings and plants asset. Through this notice, the Administration intends to seek a contractual partner to pursue the objectives of the Climate Mission and implement a new public-private collaboration model for the merging into a single concession management system of all maintenance services active on municipal buildings and systems, including network systems, the integrated energy service, property management (and therefore their energy efficiency) and other ancillary services.

The unified management is functional to the direct production of "clean energy", to the intervention on buildings with energy efficiency solutions, to the significant reduction of CO<sub>2</sub> emissions, optimizing consumption and resources management methods, thanks also to the ability to directly collect data from the sensors that will power the city's Digital Twin, another key tool of the Climate Mission.

Through the public notice, the Administration provides the essential elements for the knowledge of the current characteristics of service management as well as indications, on the basis of which, starting from the minimum requirement framework, the proponent will be able to develop and integrate the proposal, applying its own technical know-how and expertise. These indications constitute the guidelines in relation to which the Administration will orient its assessment:

- perspective of climate neutrality by 2030: implementation of a strategy that involves overcoming fossil fuels and using renewable energy sources, the production of "clean energy" also from photovoltaic systems with the aim of a drastic and consistent reduction in emissions of CO<sub>2</sub>;
- real reduction in consumption and energy needs of the buildings-objects-systems covered by the partnership initiative through the implementation of energy efficiency interventions (for example: heat pumps, replacement of window frames, insulation, Building Automation and Control systems, adaptive lighting and smart lighting systems, etc.);
- service management systems included in the object of the partnership aimed at the implementation of innovative techniques and systems capable of resulting in consumption reduction, economies of scale and improvement of the current standards in use.

The Concession will have a duration of 15 years and will concern more than 250 buildings, with a total surface area of almost 500,000 m<sup>2</sup>. The annual fee cannot be higher than the expenditure foreseen by the Municipality of Bologna in the economic and financial planning tools, equal to approximately €25 million. A public contribution is also envisaged for the construction of photovoltaic systems on buildings that the proponent deems suitable for installation, up to €18 million. The Municipal Administration held an in-person "information day" which took place on 24 November 2023 at the headquarters in Piazza Liber Paradisus, which was widely attended, thus demonstrating strong interest from operators in the sector. Proposals must be received by March 4, 2024.

#### **New municipal public buildings**

Strategies that aim for maximum local energy production from renewable sources and the electrification of consumption find widespread application in new public building projects. In fact, the Municipality has the objective, also expressed in its planning tools, to build new buildings with high energy performance of the building-system system, i.e. with global energy performance index values expressed in non-renewable primary energy (E<sub>pgl</sub>, n<sub>ren</sub>) equal to zero (ZEB) or, if it is not technically possible to obtain





this result, the achievement of a positive balance on an annual basis between renewable energy produced and supplied to the grid compared to that withdrawn.

### **Energy strategy in public housing stock**

The Municipality of Bologna together with its partner **ACER Bologna (Azienda Casa Emilia-Romagna of the Province of Bologna)** intends to implement a new energy strategy for the ERP (Public Residential Buildings), aimed at promoting renewable sources and at the same time contrasting energy poverty.

ACER is a public economic body with legal personality and organisational, financial and accounting autonomy and its activity concerns:

- the management of real estate assets, including public residential buildings (ERP), and maintenance, recovery and qualification interventions of properties;
- the supply of technical services, related to programming, planning, concession and implementation of building or urban planning interventions or of complex programs;
- the management of services relating to meeting the housing needs of families, including rental agencies;
- the provision of services to beneficiaries of ERP housing and rented housing.

The redevelopment of public housing stock is capable of making a significant contribution to the objectives of decarbonisation and combating climate change. Together with the efficiency interventions of the building envelopes, planned for the next few years with ordinary resources, the "Garden of resilience" project will be concluded in the ERP area between via Malvasia/Casarini/Dello Scalo/Pier de Crescenzi which has the objective of experimenting interventions to combat extreme weather and climate phenomena in a large public space. Through the measure called "Safe, Green, Social" of the Complementary Fund to the National Recovery and Resilience Plan (NRRP), work is being done on approximately 100 dwellings with the aim, by 2026, of significantly improving their energy performance and seismic response. Through the partner **ACER (Azienda Casa Emilia-Romagna)**, interventions have been activated on ERP buildings using the 110% Superbonus mechanism which will allow energy consumption to be contained and expenses to be reduced for many families in difficult conditions. With the resources of the Integrated Urban Program (part of the NRRP), further buildings will be redeveloped, improving their energy performance; the relevant open spaces will be recovered for better usability and resilience.

The energy strategy for ERP buildings in the Municipality of Bologna envisages to:

1. implement the greatest possible installation of energy production systems from renewable sources on buildings in the public housing stock, currently it is estimated that there is a possibility of installing photovoltaic systems on 26,000 m<sup>2</sup> of roofing, a surface that can be expanded through regulatory innovation interventions;
2. implement energy redevelopment/saving interventions;
3. share the economic benefits of the two previous points with the widest possible audience of tenants of the municipal public housing stock, also as a measure to fight energy poverty.

### **Strategy for buildings with social and emergency purposes**

The **ASP - Azienda Pubblica di Servizi alla Persona Città di Bologna** (Public Company for Personal Services of the City of Bologna) is a non-economic public body, 97% of which belongs to the Municipality of Bologna, which plans and manages social and socio-health services for the elderly, adults in difficulty, migrants and asylum seekers, as well as projects that respond to housing needs.

The Company manages an important real estate asset, made up of approximately 1,200 properties, the result of the centuries-old closeness of the citizens of the City of Bologna and established through bequests and inheritances. ASP's assets are used for social purposes to contribute to meeting housing



needs, and allows to support development plans and the construction of new services for the local community.

The attention to social and climate issues finds in this partner an example characterizing the Mission for the city of Bologna. The interventions proposed by ASP on its building stock, aimed at reducing the emission of GhGs, are:

- energy efficiency interventions (building/plant);
- installation of RES systems (Renewable Energy Source);
- installation of remote-control systems, BMS (“Building Management System”);
- activation of a Public - Private Partnership which involves the installation of RES systems, the management and optimization of electricity consumption, the partial relamping of buildings.

### **The energy strategy for university buildings**

The **University of Bologna** is a protagonist of the city and a fundamental partner of the Municipality of Bologna in the Mission. It is the oldest university in the Western world, its nine centuries of history (conventionally reference is made to 1088 as the date of the beginning of the Bolognese Study) have marked the history of the city and today the University continues to evolve, developing an ever-increasing interest towards new technologies and respect for the environment, fundamental elements to be a competitive and cutting-edge reality in the 21st century.

The University not only promotes research and innovation actions on clean mobility, energy efficiency and urban planning but also proposes direct and concrete actions to reduce GhG emissions as part of the management of its 204 buildings in the city. The main actions on its building and plant asset are indicated in the new University Energy Plan (PEA 2023-2030), which includes Actions to Improve Energy Efficiency, interventions on building envelopes to reduce consumption, the widespread installation of photovoltaic systems on building roofs and the purchase of green energy.

### **The strategy for research centres (CNR)**

The **CNR (National Research Council)** is a public national research body founded in 1923 which has the task of carrying out scientific research projects in the main sectors of knowledge and applying the results for the development of the country, promoting innovation, internationalization of the "research system" and promoting the competitiveness of the industrial system.

The CNR, in addition to activating a research infrastructure in the field of nanosciences and nanotechnologies specifically dedicated to the theme of energy transition, plans important interventions on its buildings located in the municipal area of Bologna which aim to contain energy consumption (thermal insulation, replacement of boilers and refrigeration units) and the self-production of energy from renewable sources, thus contributing to the city's climate neutrality objective.

### **The strategy of the healthcare sector**

The healthcare sector represents one of the most important sources of GhG emissions and the production of non-recyclable waste. In Bologna, it is represented by three entities: **Azienda Unità Sanitaria Locale (AUSL)**, **Azienda Universitaria Ospedaliera (AUO)** and **Istituto Ortopedico Rizzoli (IOR)**.

All the companies move together in defining a common strategy that reduces the impact of their buildings on consumption: there are numerous energy efficiency interventions, replacement of boilers and redevelopment of buildings according to the NZEB principles. Furthermore, it should be considered that since 2018 all healthcare companies have been supplying themselves with certified green energy and the prospect is to continue in this direction until 2030.



### **Buildings of the Emilia-Romagna Region**

The Emilia Romagna Region building located in via Aldo Moro, in the business district adjacent to the exhibitions center on the north-eastern outskirts of the city of Bologna, is the first building built by the Region in this area, the subject of the city's development plan towards North in the late 1960s. The headquarters includes the numbers Aldo Moro 30, 50 and 52.

With Regional Council Resolution 159 of 01/29/2024, "*Approval of carbon footprint analysis of regional buildings in via Moro 30-50 and 52 and estimate of GhG emissions reduction following energy improvement and efficiency interventions as a contribution to the Climate City Contract of the Municipality of Bologna*", the study of the Carbon Footprint of the regional buildings in via Aldo Moro 30, 50 and 52 was approved, which includes the 'Plan for the improvement and reduction of GhG emissions', within which estimates of the reduction of emissions resulting from the efficiency measures planned until 2030 are reported.

The intervention represents the Region's commitment to widespread energy efficiency of properties which includes thermal insulation, replacement of windows and lighting, replacement of heating elements, circulation pumps and the thermal distribution network, installation of BACS systems, as well as the installation of photovoltaic systems, for an overall annual CO<sub>2</sub> reduction of approximately 1500 tonnes, resulting from the expected thermal and electrical energy savings, as well as the production of electricity from RES.

For the inclusion of these actions within the CCC portfolio as a contribution to the reduction of the City's emissions, the energy benefits estimated and expressed within the Council Resolution above were considered, applying - for consistency and homogeneity with the other actions - the CCC's own emission factors.

### **Decarbonization of Local Public Transport (LPT)**

In a context of profound transformation of the mobility sector, the Municipality of Bologna has identified Local Public Transport as a crucial issue to respond to the challenges of the Climate Mission.

The decarbonisation of Local Public Transport is envisaged through a plurality of projects and important investments linked to the NRRP. The Municipality is working on a wide range of projects related to the tram network, the strategy for strengthening the Metropolitan Railway Service and the extension of the 260 km existing cycling network (surveyed March 2023): currently the network for daily mobility has 65 km of already financed projects.

The intervention of greatest strategic importance is certainly the new tram network, which introduces 4 connection lines between the city center and four strategic areas on the immediate outskirts of the city, for a total of approximately 60 km of network.

For the first line (Red Line), work began in 2023 and its completion is expected by 2026 with a financed amount of €513,644,482. The works relating to the Green line are currently being awarded and will cover the two-year period 2024-2026 for a total amount of €222,142,224; the Blue line (also including the cable car to San Luca hill) is at the design and technical feasibility stage: the investment allocated to date is €1,722,000. Finally, the feasibility of the Yellow line is still under studying.

These projects imply complementary interventions such as car parks, electric charging stations, underpasses and cycle-pedestrian crossings which will significantly change the face of the areas subject to the intervention.

In terms of impacts, the tram network is part of careful transport studies, conducted by the companies appointed by the Municipality of Bologna, which confirm the solidity of the project intentions.

The numbers show that there are approximately 700,000 journeys within the Municipality of Bologna, of which 42% take place within the Municipality by car, 21% are covered by local public transport, 27% by journeys on foot. The objective for the city is to increase travel via LPT by 35%, diverting the approximately 93 million annual passengers who use urban road transport towards more sustainable forms of transport, such as the tram. The case of the Green line is symbolic as it presents a route that overlaps with the bus number 27 towards Corticella, a line which is the second most used at city level and which alone covers 12.7% of all urban demand of TPL. The results obtained showed how the tram service would absorb over 41% of users who regularly use traditional TPL throughout the day and over 39% in the peak time slot. Furthermore, it was highlighted how the construction of the new Green tram



line (in synergy with the Red one) will lead to an increase in users of over 30,000 passengers per day (+28%).

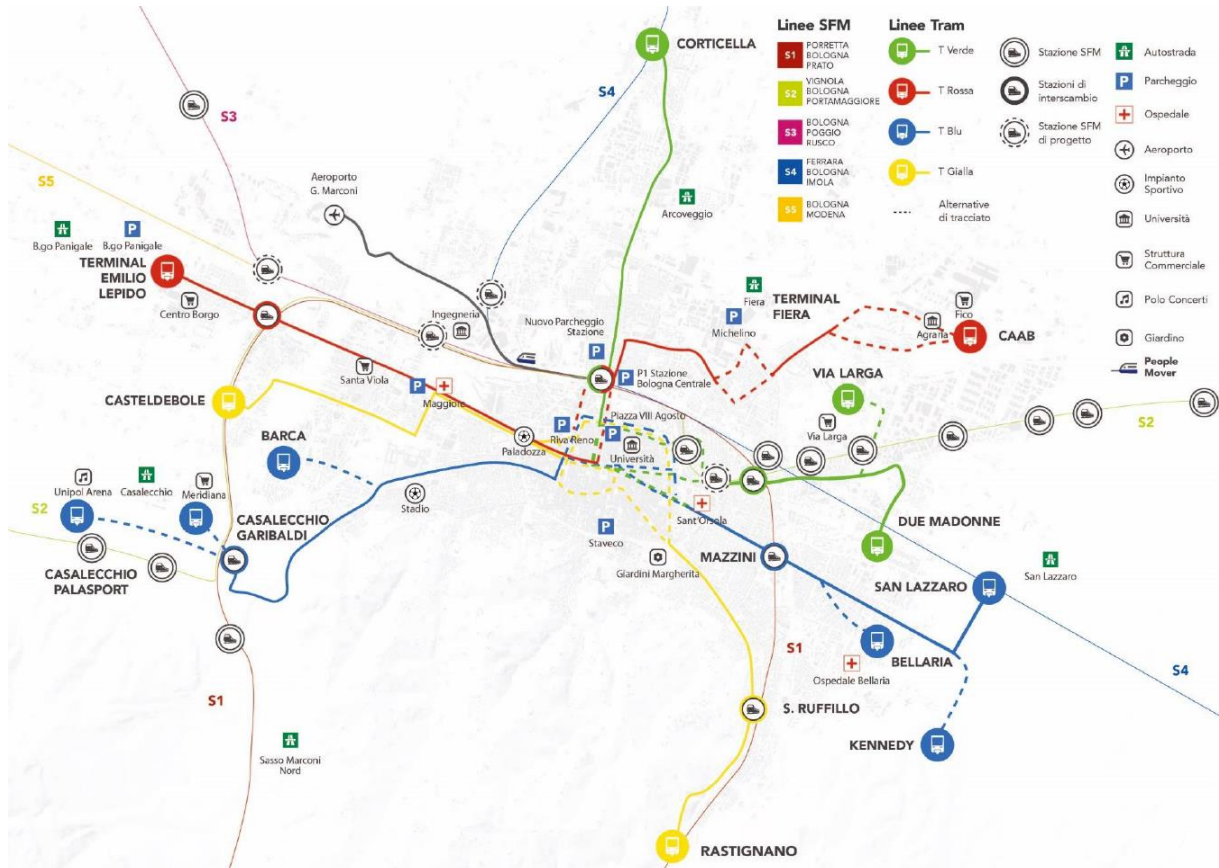


Figure 18: Project of the four tram lines in Bologna

In terms of transport and mobility, the Municipality can count on an important partner and external player, the **TPER** - Trasporto Passeggeri Emilia-Romagna company which, in synergy with the objectives presented by the municipal council, has started an important electrification process which is accompanying the renewal of the bus fleet serving the city, also creating dedicated charging stations at the terminals. The Municipality - TPER partnership also includes an important and innovative specific action which concerns the renewal of the local public transport fleet with hydrogen buses, also providing H<sub>2</sub> production and recharging stations at the depots. In particular, over the next three years the purchase of 157 new hydrogen vehicles is planned which will mainly replace diesel vehicles with obsolete technology. There will be 3 refuelling plants in the company's depots, located in strategic points of the city identified by the company. Preliminary assessments are currently underway for two of these sites to evaluate the project feasibility, while the design of the plant in the Due Madonne area is underway. The path that the TPER company is following to raise awareness of the use of local public transport also starts from the strengthening of sharing platforms (cars, scooters, scooters and bicycles), made available not only to citizens but also to private entities through discounts and partnerships. Finally, the "Biciplan" (bike-plan) is fully part of the city mobility strategy: the number of users who use bicycles to travel within the city of Bologna is significantly increasing according to the data collected from the meters installed in the key points of the city (+62% in the last 10 years), with a real boom for the so-called bicycle ring road which connects the city in a south-east/south-west direction. 65 kilometres are being planned for the next few years within the urban belt. Various interventions are also envisaged which could favour the development and use of LPT compared to the use of private cars, including:

- **"Bologna Città 30"**: project which involves extending the 30 km/h limit to approximately 70% of the streets of the entire town centre (currently representing 30%); the percentage is close to



90% if we consider only the perimeter of the most densely populated part of the city. The first objective of the initiative is to reduce the probability of fatal accidents in the city for pedestrians and cyclists: according to a study conducted by Polinomia on behalf of the Municipality of Bologna, this probability is reduced by approximately 8 times with the speed reduced to 30 km/h; furthermore it is more pleasant and safer to travel on foot and by bicycle in the city, the dangers on the road, chaos and noise which today represent the main obstacles for those who would like to move differently in the city are reduced; the "stop and go" driving style typical of city mobility is avoided, reducing fuel consumption and sudden braking, which produces greater emissions. In this context, Città 30 promotes greater equity in the access and use of public space, promoting shared, safe use of the streets by all citizens. The greater influx of pedestrians and cyclists can represent an opportunity for local economies, with an increase in sales for shops and nearby businesses, favouring greater economic vitality spread throughout all neighbourhoods of the city, not just the centre.

- **Environmental Limited Traffic Zone ("ZTLA") and the Green Area:** the Environmental Limited Traffic Zone is the evolution of the Limited Traffic Zone of the historic center obtained by adding environmental criteria to the current access limitation criteria. All residents in the historic center, whose ZTLA access permit will be progressively revoked, and who voluntarily choose not to ask for a new permit, will be entitled to the sustainable mobility bonus for a duration of one year, extendable up to a maximum of two years. The bonus, provided by Tper, consists of vouchers for public transport, taxi/NCC, car sharing or bike sharing chosen by the user. Other initiatives to support the most sensitive groups of citizens are discounted bus passes for second and following children within the age group of 14 to 19; the free subscription for ten years for those over 70 who remain without a permit.

The ZTLA is connected to another important initiative, the so-called Green Area which represents a sort of Limited Traffic Zone extended to the entire town center and regulated mainly on environmental criteria (Low Emission Zone) based on the installation of cameras at the entrances to the town centre. The system will be active starting from 1 January 2024 to monitor the traffic flows that cross the delimited area: the objective of the initiative is to collect data in order to develop statistics useful for the development of future mobility plans. A monitoring period of at least two years is envisaged, which can be extended based on the consistency of the data collected. This project will work synergistically with the Digital Twin.

### Involvement of businesses and economic activities

The Municipality of Bologna involvement approach towards the entrepreneurial and industrial entities operating within the municipal borders has been widespread since the first moments of the process that led to the city's candidature for the Climate Mission. In fact, the Administration believes that a synergy of objectives with business entities is fundamental and their involvement therefore represents a fundamental step in achieving climate objectives.

Among the most representative players at a territorial level, operating in two crucial sectors such as the automotive and large-scale retail trade, are Ducati and Coop. **Ducati** has presented numerous initiatives regarding the modernization of its buildings and systems in use, supplying itself with certified green energy purchased from the grid but also self-produced by its own systems, reaching a potential of around 1,000 MWh/year, part of which relating to new RES plants being installed. The company has also shown sensitivity to the electrification of its fleet, not only through awareness-raising actions towards its employees (company Car Pooling Program) but also through the increase in the number of electric vehicles in the company fleet and the consequent installation of charging stations recharge with the expectation of installing ten additional ones compared to the existing ones. Finally, sensitivity towards environmental protection has led the company to an urban reforestation project with the creation of a biopark of approximately 20,000 m<sup>2</sup> near the Borgo Panigale site.

In the same north-west area of the city, there is one of Coop's largest commercial offices. Precisely in this area the installation of an agri-voltaic park is planned, the power and extension characteristics of which are still being studied, in addition to the photovoltaic system already present with a total annual power production of 800 MWh. Given the numerous sales points in the Bologna area, the company is focusing on making the buildings more efficient, even though some of these are not their property: the



interventions mainly concern LED relamping and the management of the internal temperature through special remote-control systems.

Another company active in the area in the field of electricity and gas supply is **Illumia** which, consistently with its corporate mission, is investing in renewable sources. Illumina plans to install photovoltaic systems in the city, also at the company headquarters in Bologna, with the aim to power its headquarters as well as to make green energy available to the grid from an agrivoltaic photovoltaic system of approximately 1MWh. Finally, awareness towards shared energy production practices is leading the company to the establishment of a Renewable Energy Community in the area of the historic city centre.

The credit and financing market on an ESG basis also counts in the ecological transition process: in this sector **Emil Banca Credito Cooperativo** (local cooperative bank) is standing out for its subsidized financing initiatives in the agricultural sector, encouraging conversion initiatives to organic farming and more environmentally friendly processes and machineries. Furthermore, the acquisition of tax credits from building owners or from companies carrying out redevelopment works (also in the national context of the building Superbonus) has made it possible to finance redevelopment interventions for a wide range of interested parties who otherwise would not have had financial availability. The company is also equipped with a sustainable urban logistics plan which is based on a bicycle courier service for the transport of internal correspondence between the various branches in the city, as well as having approved a plan for the electrification of the fleet by 2030. Added to this are widespread interventions on all branches for the energy requalification and revamping of buildings, underway since 2019 and which will involve the company until 2024. Finally, each branch is powered by purchased green energy.

Within the municipal territory there is an important global player in the field of goods handling and logistics such as **Toyota Material Handling Manufacturing** which extends in the north-east area of the city across two large factories for a total extension of 3,881 square meters. The PV panels provide approximately 8.9GWh, equal to a third of the total energy used by the plant in a year. The company is strongly projected towards the innovation of its systems and the factories themselves through, for example, the replacement of highly polluting painting systems and the redevelopment of internal spaces with the installation of heat pumps for heating and cooling the environments. Confirming the strategic nature of the company for the entire territory, the completion of the new logistics hub will meet sustainability criteria both in terms of self-production of energy and in terms of consumption.

The involvement of the entrepreneurial and productive world also passes through trade and business associations which can raise awareness of the issues of sustainability, circularity and the culture of energy efficiency through the use of alternative sources. This is the objective that **Confindustria** and **Confederazione Nazionale dell'Artigianato (CNA)**, industry and production business associations, have set themselves and are actively involved in training events and initiatives aimed not only at their members but also at citizens (for example through the Building Bonus Help Desk or the Confindustria Circular Project), as the climate neutrality objectives are ambitious and require widespread involvement.

As part of the involvement in the Mission of external economic activities, there is also **Crif**, a company founded and developed in the Bologna area operating in the provision and management of consumer credit, offering credit reference information for the prediction and control of financial risks. The company is very busy in the conversion towards photovoltaic. Furthermore, since 2017 the company has a corporate Mobility Manager, whose objective is to measure, analyse, design and monitor new mobility solutions that meet the travel needs of the company population: the contribution of all employees is considered fundamental. In fact, a survey is launched annually which investigates the travel habits of the Group's employees and their propensity to change the means of transport used for commuting between home and work.

### **Citizen involvement and support**

The Municipality of Bologna considers the involvement and participation of citizens in the Climate Mission and in the city's energy and climate transition process to be of fundamental importance.

The city of Bologna has stood out for years for the active participation of citizens in city policies, also thanks to the participation paths activated by the Municipality, for the involvement and listening of citizens in various areas. In particular, the "Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi" has just been established and brings together three Foundations that operate in the area. In recent



years, one of the three foundations, the Fondazione per l'Innovazione Urbana (FIU), an evolution of the city's Urban Center, has operated in synergy with the Municipality for social innovation and in support of all the participatory processes activated by the Municipality (participatory budgeting, neighbourhood workshops, civic imagination, etc.). This commitment also immediately accompanied the Climate Mission, with a design of processes aimed at maximum involvement of citizens and local subjects (ref. Processes described in Modules C1 and C2) for the construction of the Climate City Contract. The response in this case too was characterized by broad participation, confirming that the city of Bologna has an active and participatory social fabric, also in relation to the climate issue.

“Bologna Partecipa” is the digital platform of the Municipality of Bologna to encourage participation, civic collaboration and care of common goods, with the aim of supporting processes of listening, participation and collaboration, in line with shared administration approaches. This portal contains all the information relating to municipal participation initiatives, including the participatory budget, neighbourhood workshops and collaboration agreements. Given the important role that the system of private buildings has in the city's emission balance, the acceleration of the local climate transition cannot ignore citizenship, as a key actor for achieving neutrality, both through virtuous behavior and for the contribution it can lead to municipal policies. Further communication tools relating to the Mission are:

- the **Chiara.eco portal** (<https://www.chiara.eco/>): Project coordinated by the “Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi” with the support of Formicablu and promoted by the Municipality of Bologna, created to inform about Bologna's Climate Mission and the ecological and climate crisis, as well as to explain how to act to address it, and to spread experiences with the aim of activating new and concrete processes of change; Chiara.eco has published over 160 articles, podcasts and news raising awareness on environmental issues and Bologna Missione Clima.
- The **new website dedicated to the Mission**: [www.bolognamissioneclima.it](http://www.bolognamissioneclima.it) is the new site coordinated by the Municipality of Bologna and the Foundation. An information container of the initiatives and actions carried out in the city that concern the climate mission. To this end, the site will also integrate the Chiara.eco portal both with the articles and news already published and with the new content planned.
- a **communication campaign** related to the Mission, with the creation of a coordinated visual identity “Bologna Missione Clima” for all communication materials and the display of posters in the city (Annex 6).

Among the numerous participation tools promoted by the Administration, three are the fundamental tools activated for the involvement, information and education of citizens closely connected with the Climate Mission:

1. **Citizen Assembly for Climate**: fundamental process of involvement of a random and representative sample of citizens and city users in the development of the Climate City Contract and the city's climate policies. The Assembly is an instrument of deliberative democracy introduced in the Municipal Statute in 2021, following a participatory process of listening and discussion with organized subjects of the city. The first Assembly was called by the City Council in December 2022, with the mandate to define “*proposals and recommendations to make Bologna a solar, renewable and sustainable city, accelerating the right energy transition, towards a model based on the reduction of energy consumption, energy efficiency, production and use of renewable energy, individual and collective self-consumption, energy communities*”. The Citizens' Assembly for Climate took place from May to November 2023, with a total of 9 meetings, and very positive results in terms of participation (on average around 80% of members throughout the entire process) and interest. The outcomes are 6 recommendations and 24 proposals concerning mitigation and adaptation to climate change at the local level and overcoming existing administrative barriers. The Assembly process and the outcomes are described in Module C-1, while the final outcomes are reported entirely in Annex 1. The proposals are evaluated by the City Council and those accepted have to be included in the Municipality's programming, after a technical-economic feasibility check and then constantly monitored.
2. **Energy help desk of the Municipality of Bologna**: activated in March 2023 as an action of the Climate Mission, it is a free information tool aimed at citizens on the energy topic. The Help



Desk, promoted by the Municipality and managed by AESS, also acts as an important tool for listening to the needs of citizens regarding energy, with the aim of being able to understand the barriers and needs of the city and therefore to strengthen the support provided in the future through the enhancement of this tool, also thanks to the exchange of best practices with other cities in the Mission and beyond, regarding One Stop Shops. The Help Desk is described more fully in Module C-2.

- 3. Energy and Environment Showroom:** activated in 2003 by the Municipality of Bologna to plan and implement environmental awareness and education actions in schools, the Center reaches more than 5000 students every year for learning on the themes of ecological transition and the fight against the climate crisis. The Energy and Environment ShowRoom is a free service for local schools and focuses its environmental education actions on the urban dimension, with the aim of training active and aware citizens. With Bologna Missione Clima the Showroom's offering has focused more on the climate theme, offering practical and interactive paths to face the "zero climate impact" challenge. The Showroom is described more fully in Module C-2.
- 4. Neighbourhood network offices:** these decentralized units in the neighbourhoods of the Municipality of Bologna coordinate and support information, awareness-raising and training activities on the ecological and climate transition of citizenship by local associations and neighbourhood houses - workshops, walks, conferences, workshops, farmers markets, training.

The more strategic areas of action described above are included and completed by the entire list of actions that make up this Action Plan portfolio in Module B-2. All of these actions contribute synergistically to outline a series of expected impact paths and scenarios, which are summarized in Module B-1. On the basis of these paths, the main indicators that will be used for monitoring the Plan are then defined (Module B-3).

## 4.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

This Module presents the impact pathways that the actions of the Action Plan will help to create, for each sector (Buildings, Waste and wastewater, Transport, IPPU and AFOLU). The impact pathways are organized by levers of change to which the actions refer, i.e. technologies, economic resources/funding, governance/policy, social innovation, capacity building and information. A further paragraph of transectoral impact pathways is added to the sectors, i.e. which contribute to creating changes and impacts on all sectors.

### **Buildings (Built environment and RES)**

Within the Buildings sector, the most relevant in terms of emissions, the main areas of interest of the Mission are the production of energy from renewable sources, the electrification and energy efficiency of the building stock, with particular attention to social housing, school buildings and other public buildings, municipal and not. Private residential buildings are also under attention, already identified by the SECAP as a priority sector for the reduction of GhGs in the city.

Thanks to the **technological lever**, the main changes expected thanks to these initiatives in the medium term are the improvement of the energy class of buildings, reducing the energy-intensive potential, the self-production of energy from renewable sources, the enhancement of the electricity grid infrastructure as fundamental step for the energy transition, in addition to the development of decision support systems, such as the Digital Twin. The redevelopment and regeneration of large city areas and the development of multifunctional projects can generate co-benefits, such as: improving the healthiness of the urban environment, stimulating the local economy with the reconversion of construction supply chains, job creation, increase of the quality of spaces and indoor well-being, also contributing to climate adaptation (e.g. heat waves), improving air quality. One of the expected changes in terms of renewables is also the spread of innovative agrivoltaic systems, which could bring, in addition to the benefits already





listed above, also important synergies with local agri-food production, for example by studying and monitoring the co-benefits in terms of climate adaptation of crops.

A fundamental lever for the purpose of reducing emissions in the buildings sector is that of **Governance and Policy**, where the Municipality of Bologna is committed to regulatory innovation both of its own instruments and through the dialogue with institutions at the regional, national and European level.

**In terms of financing**, attention is high, given the high potential in terms of buildings redevelopment, at a public and private level: the strengthening of the various forms of economic support (tariffs, incentives, deductions, etc.) and administrative simplification are the main objectives on which the Administration is committed within the Mission, together with overcoming the barriers analysed in Module A-3. The awarding of a highly innovative Public Private Partnership contract for the management of the entire municipal building and plant assets will also offer important opportunities for change in the medium term.

Finally, of fundamental importance for the sector is **the information and capacity building** of citizens, especially in reference to private residential assets. To activate this lever, the Municipality has activated the Energy Desk, as a fundamental tool to support the energy transition of private buildings.

<b>B-1.1: Impact pathways - Buildings (Built environment and RES)</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>
Technology and infrastructure	Energy efficiency of buildings	Energy efficiency of buildings	Reduction of consumption and emissions  Increase in local energy production from renewable sources  The value in tCo2eq of the direct impacts linked to the systemic lever "technologies and infrastructures" and the related short and long-term changes are linked to the reduction of emissions in the "buildings (built environment and RES)" sector whose overall value is 507,250.13 tCo2eq.	Greater local energy autonomy  Fight against energy poverty  Improvement of the healthiness of the urban environment (starting from air quality)  Development of employment opportunities and a local market for renewable sources  Greater attractiveness and competitiveness of the territory  Increase in value of properties
	Installation and diffusion of renewable energy sources	Greater local energy autonomy		
	Development of large innovative renewable energy production projects	Greater local supply of energy from renewable sources		
	Agrivoltaic systems	Sustainable agriculture and increase in RES		
	Mapping of buildings with digital twin	Data collection platform as a decision support tool		
Governance and Policy	PUG and RE alignment to mission objectives	Further diffusion of renewable sources in the area	Increase in local energy autonomy from clean sources  Reduction of consumption and emissions	Increased awareness and consensus towards the energy transition and climate neutrality



	Establishment of dialogue and cooperation with regional and national institutions	Multi-level governance	The value in tCo2eq of the direct impacts linked to the systemic lever "governance and policy" and the related short and long-term changes mentioned here, are linked to the reduction of emissions in the "buildings (built environment and RES)" sector whose overall value is 507,250.13 tCo2eq.
	Assignment of Public Private Partnership for the management of municipal assets	Innovative management of municipal assets consistent with the objectives of the Mission	Strengthening collaboration between public and private
Financing	Incentives at national and regional level for the energy efficiency of buildings and for the widespread self-production of energy from renewable sources	Increase in the energy class of buildings and local energy production from clean sources	Greater investment capacity on RES and energy efficiency.
Information and capacity building	Continuation and strengthening of the activities of the Energy Desk	Strengthening of the help desk with additional services	<p>Increased awareness</p> <p>Increase in virtuous behaviors</p> <p>Increase in private initiatives for the energy transition.</p> <p>The value in tCo2eq of the direct impacts linked to the systemic lever "Information and capacity building" and the related short and long-term changes mentioned here, are linked to the reduction of emissions in the "buildings (built environment and RES)" sector whose overall value is 507,250.13 tCo2eq. It should be underlined that the systemic lever "Information and capacity building" acts on all sectors of the CCC.</p>

## Transport

The Transport sector, together with the Buildings sector, represents the largest in terms of public and private interventions. This sector brings with it important impacts on the daily life of citizens which are often underestimated in the overall evaluation of projects, such as the effects in terms of competitiveness and attractiveness. In a holistic approach of the Mission, interventions in favor of safer and more integrated sustainable mobility have a very strong positive impact in terms of the health and well-being of citizens.

As described in the introductory part of Module B, the Municipality of Bologna has identified Local Public Transport as a crucial variable to be pursued in designing strategies to respond to the challenges of the Climate Mission, with important interventions for the decarbonisation of Local Public Transport, through a plurality of projects and important investments also linked to the NRRP, including the new tram lines, the renewal of the local public transport fleet, both with electric vehicles and hydrogen technology, which act through **technological and infrastructural lever**.

Also in this sector the lever of **governance and local policies** is fundamental: important changes are foreseen thanks to local mobility planning tools, such as the SUMP, as well as important interventions by this Administration, such as 30km Zone and the Environmental Limited Traffic Zone, which will be able contribute to further discouraging the use of private cars in favour of public transport.



Also **Financing and information/capacity building** are two important levers that can contribute to changing the transport and mobility system of the city of Bologna, for example through the use of funds obtained from the NRRP for infrastructure projects and soft tools such as the mobility desk and other innovative actions implemented through European projects.

<b>B-1.1: Impact Pathways - Mobility and Transport</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>
Technology and infrastructure	Tramway project	Decarbonization of public transport	Reduction of dependence on fossil fuels  Reduction of emissions of both GhG and air pollutants  Sharing economy development  Urban traffic de-congestion  Increased active and sustainable mobility  Increased road safety	Improvement of citizen well-being and air quality  Greater safety and liveability  Equity in access to public space  Positive impacts on health
	Digital twin	Digital platform to support mobility planning		
	Greater diffusion of Mobility managers in public and private entities	Alignment between corporate and public objectives		
	Production and distribution of innovative fuels (i.e. hydrogen)	Creation of proximity distribution hubs		
	Greater diffusion of electric charging infrastructure	Replacement of combustion cars with electric cars		
Governance and Policy	Implementation of sustainable mobility planning programming tools, monitoring and periodic updating	Introduction and strengthening of innovative measures from an integrated perspective	Greater diffusion in the purchase of e-bikes and cargo-bikes, and of LPT subscriptions.	The direct impacts linked to the systemic levers for the transport sector are related to the reduction of emissions in the sector whose overall value is 99,189.49 tCo2eq.
	Environmental Limited traffic zone	Reduction of car use in the historic center		
	30 km Zone	Reduction in the use of private cars		
Financing	Use of NRRP funds obtained for important infrastructure projects	Change in the city mobility system		
	Greater diffusion of incentives for sustainable mobility	Dissemination of further agreements, conventions and collaborations to facilitate the use of LPT and bicycles		



	Implementation of approved or ongoing European projects in the mobility sector	Innovation, capacity building, greater involvement of stakeholders and citizens		
Information and capacity building	Confirmation of the Urban Mobility Help Desk	The help desk may be enhanced with additional services		

## Waste and wastewater

From a regulatory and planning point of view, the lever **Governance and Policy**, the Municipality intervenes significantly on these issues with the General Urban Plan (PUG) and the Building Regulations (RE), which contain specific strategies for the circularity of resources (materials and water) and prevention with respect to the production of waste and wastewater.

In particular, these tools:

- provide for buildings to be progressively equipped with spaces dedicated to the separate collection of urban waste and promote the creation of new collection and reuse centres;
- they stimulate a circular economy of construction and demolition materials aimed at containing the withdrawal of poorly renewable natural resources and extending the life cycle of products. The city is therefore considered not only as a center of consumption but also as a place of production of building materials, in this sense the PUG and the RE prescribe that a part of the volume of inert materials necessary for the realization of new urban and building interventions, variable from 10 to 35% depending on the type of interventions, must be made up of recovered or recycled material.
- They prescribe the accumulation and reuse of rainwater, as well as the creation of gray water treatment and reuse systems in urban and building interventions.

For this sector, the territory of the Municipality of Bologna can also currently count on an important player in the management of services such as Hera, which is actively engaged in projects with high technological added value aimed at emissions reduction, circularity of materials and other innovative solutions under experimentation. The presence of a national leader in the sector represents a stimulus not only for the competitiveness of the labor market, but also for the municipal administration so that any experiments find fertile ground for development at a regulatory level and attractiveness at an investment level. The main technological innovation projects in the sector therefore participate in important changes and impacts related to the **Technology lever**.

Also in this sector, the **information and participation of citizens** plays an important role in the success of municipal policies: involvement, starting from the young population segment belonging to every level and degree of education, represents the key to have a concrete impact on consumption styles and awareness of the impact of individual actions on the environment.

<b>B-1.1: Impact pathways – Waste and wastewater</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>
Technology and infrastructure	Use of low-emission technologies	Development of new technologies	Less production of waste, wastewater and emissions.	Greater competitiveness of innovative companies
	Accumulation and reuse of rainwater	Greater water availability	Greater focus on the principles of circular economy.	Increase and stimulus of the circular economy



Financing	Tax relief	Greater participation in separate waste collection	Greater investment capacity given by the circular economy.  The direct impacts linked to the systemic levers for the waste and wastewater sector are related to the reduction of emissions in the sector whose overall value is 403.03 tCo2eq.	Change in consumption styles  Improvement of the healthiness of the urban environment  Greater diffusion of sustainable practices
	Innovative finance for the circular economy	Increasing circular economy projects		
Governance and policy	PUG and RE adaptation to the Mission objectives	Reduction in the use of natural resources following circularity actions of materials and water		
Information, capacity building and citizen involvement	Implementation and continuation of current municipal policies and initiatives for the training and involvement of citizens for reduction, reuse, and recycling	Increase in virtuous practices by citizens	Greater permeability of circular economy principles	

### Industrial Processes and Product Use (IPPU)

As emerged from the analysis of the emissions inventory (Module A-1), this sector is not relevant in terms of emissions within the border of the Municipality of Bologna, as the majority of production companies are located outside the municipal borders.

For the same reason, the contributions collected in terms of actions are also limited. Consequently, the impact pathways identified below mainly concern the increase in efficiency of existing procedures by local health authorities, the impact of which also transversally concerns other sectors such as mobility and digital skills.

<b>B-1.1: Impact pathways - IPPU</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>
Technology and infrastructure	Innovation in the processes and services provided	Technological development	Reduction of emissions	Increased competitiveness
	Digitalization of the service offering	Change in usage habits	Process efficiency	Greater capillarity of health services Improvement of the healthiness of the urban environment



**Agriculture, forestry and other land uses (AFOLU)**

The increasingly frequent extreme climatic episodes affecting the Emilia Romagna region, among which the recent flood that hit several areas in May 2023, require reflection to implement synergistic and long-term responses that put the environment at the center of actions of collective interest. The redevelopment of the urban environment allows not only greater resilience of the territory but also its liveability for citizens with consequent health benefits. In this context, both mitigation and adaptation actions to climate change are equally important.

As already described in the analysis of barriers (Module A-3), the Municipality of Bologna has begun to apply the principles of Nature Based Solutions within its existing planning tools (SECAP, PUG, RE), prescribing specific measures of sustainability linked in particular to urban drainage and the tree budget of the interventions, which must always be positive. The **Governance and Policy lever** also reports the impact pathways envisaged for the main urban and peri-urban "forestry" interventions, included in the portfolio of actions and foreseen by the policies of some local stakeholders.

<b>B-1.1: Impact pathways - AFOLU</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>
Local Governance and Policies (public and private)	Increase in the municipal tree budget and urban greenery	Increase in the municipal tree balance and urban green area	Reduction of pollutants and climate impacts on urban areas	Increase in urban green spaces
	Innovative solutions for restoring nature in the urban environment	Increasing introduction of Natural-Based Solution	Absorption of greenhouse gases.  The direct impacts linked to the systemic levers for the AFOLU are related to the reduction of emissions in the sector whose overall value is 2713.00 tCo2eq.	Increase in biodiversity  Greater ecosystem services  Improved health of citizens  Increased urban drainage

**Transectoral**

This paragraph brings together the three systemic levers that most characterize the actions of governance innovation, social innovation and increased awareness among citizens and stakeholders, which the Municipality of Bologna has activated and intends to carry forward in the coming years in relation to the Mission. The impacts and co-benefits activated by these levers can be considered transversal to all sectors, as they relate to the energy and climate transition of the entire city.

<b>B-1.1: Impact pathways – TRANSECTORAL</b>				
<b>Systemic levers</b>	<b>Early changes (1-2 years)</b>	<b>Late outcomes (3-4 years)</b>	<b>Direct impacts (emission reduction)</b>	<b>Indirect impacts (co-benefits)</b>



Governance and Policy	Consolidation of Climate Neutral Task force	Sharing and co-participation of all sectors in achieving the objective of a neutral city	Reduction of energy consumption and greenhouse gas emissions	Improved dialogue and collaboration between institutions, citizens and stakeholders  Increased social inclusion  Improvement of the quality of the urban environment and life  Increased resilience of the city system  Reduction of inequalities and energy poverty  Strengthening the local economy and attractiveness
	Consolidation of local external governance	Local ecosystem institutionalized for climate neutrality		
	Consolidation of multilevel dialogue and cooperation	National and regional policy and regulatory framework to support neutrality		
	Evaluation of Citizens Assembly for climate's proposals by the City Council	Implementation of actions approved by the City Council		
Social innovation, information, capacity building and involvement of citizens and stakeholders	Continuation and strengthening of the activities of the Energy Desk	Strengthening of the help desk with additional services	Increased awareness  Increase in virtuous behaviors  Increase in private initiatives for the energy transition  Expansion of the stakeholder audience for the Climate Mission	Reduction of energy poverty  Greater access to clean and affordable energy  Greater community participation in the Mission  Increased access to information, awareness and behavior change
	Continuation and strengthening of the activities of the Energy and Environment Showroom	Strengthening of Showroom activities		
	Activation of a community of good practices linked to the Climate Mission	Active design by the community of good practices		
Increasing knowledge and skills for the climate transition	Internal training within the municipal administration	Dissemination of a basic culture of climate neutrality across all Departments	Greater capacity for coordination between Departments and transversal planning consistent with neutrality  Greater number of projects compliant with neutrality requirements	Greater diffusion of sustainable practices
	Training outside the municipal administration	Widespread increase in skills for the energy and climate transition among professionals and sector operators		

**B-1.2: Description of impact pathways**

The description of the impact paths has been presented for each sector analysed in the previous paragraphs.



The infographic in Annex 2 represents the impact pathways based on the systemic levers previously seen.

## 4.2 Module B-2 Climate Neutrality Portfolio Design

For several years, the Municipality of Bologna has been engaged within its municipal territory in planning and implementing concrete actions aimed at mitigating GhG emissions through specific plans and strategies.

The following chapter represents the core of the entire Climate City Contract as it presents the individual actions that the stakeholders involved at a territorial level have contributed to the Mission. The added value of the CCC compared to what is already in place is precisely the identification of the individual actions that have been planned from 2018 (reference year of the SECAP baseline) up to 2030. To give completeness to the contribution of all stakeholders, the analysis also includes **future actions** currently being planned: the broad time horizon of the document allows them to be considered in all respects as actions that contribute to the reduction of the city's GhG emissions.

The portfolio of actions is the result of a co-planning process, described in detail in Module C-1, initiated by the Municipality of Bologna together with stakeholders. The work, conducted in a synergistic manner between all the actors, led to identifying not only the actions and impacts on the city, but also those that emerged as barriers and opportunities for the specific sectors involved within the territory in which they operate, as illustrated in Module A-3.

Following the indications of the Net Zero Cities platform, the actions are divided into **sectors**: Buildings, Transport, Waste and Wastewater, IPPU (Industrial processes and use of products), AFOLU (agricultural, forestry and other land uses).

Each action is also characterised, according to the NZC guidelines, as a measurable, behavioural or policy/governance action. Measurable actions refer to those directly quantifiable in terms of GhG emissions and/or in economic terms. Behavioural actions are related to training and/or socio-cultural activities which can imply changes in lifestyle habits and increase sensitivity and awareness towards issues related to the Mission. Finally, policy/governance actions are those that directly impact policies, rules and governance.

In order to make the reading of the individual actions more complete, **Table B-2.1** presented in **Annex 3** will highlight the extended description of the individual actions, dividing them based on the sectors mentioned above.

The actions presented in Tables B-2.2a, B-2.2b are measurable. For each action the **timing of the intervention is specified**: the actions collected may have been approved by the respective actors, close to the start of the works, or in the implementation phase. As mentioned, future actions being planned are accounted for in the overall CO<sub>2</sub> reduction budget calculated in this CCC, but are illustrated separately in Table B-2.2b. They fully fall within the path of reducing CO<sub>2</sub><sub>eq</sub> emissions within the broader time horizon to 2030 that the document covers. The proposing stakeholders, given the relevance of the proposals, have been included as partners of the Climate Mission thanks to the commitment they make with the Municipality and the city. CO<sub>2</sub><sub>eq</sub> reductions for each action are calculated, contributing to the reduction of the annual baseline by 2030. The "Timing" column therefore corresponds to the implementation times of the action.

Regarding the impact, for each action CO<sub>2</sub> equivalent reductions are estimated based on the methodology defined by Net Zero Cities. Starting from the data that quantifies the activity, reported by each stakeholder for each individual action, the corresponding emission factor is applied, measured in tonnes of CO<sub>2</sub> equivalent per unit of energy, expressed in MWh. Each individual activity is therefore directly associated with an emission reduction in tonnes of CO<sub>2</sub> equivalent. The table below identifies the emission factors for the most common activity data.





EMISSION FACTORS	Methane	Heat from District Heating System	LPG	Heating oil	Diesel	Petrol	Solar thermal	Biomass	Biofuels	Electricity
tCO <sub>2</sub> /MWh	0.202	0.196	0.227	0.268	0.268	0.250	0	0.018	0	0.296

As an example, in the event that there was an action that provides for the production of renewable electricity equal to 1 MWh/year, the conversion factor relating to electricity (0.296 tCO<sub>2</sub>/MWh) would be applied to obtain the corresponding annual reduction in emissions due to the generation of renewable electricity.

The value reported in the "CO<sub>2</sub> eq reduction" column therefore follows the above methodology starting from the activity data made available by the stakeholders and expresses the annual contribution of the single action to the reduction of baseline emissions. In some cases, the CO<sub>2</sub>eq reduction value reported by the stakeholder was directly entered, once the calculation methodology used had been verified.

Where the indication "NA" (Not Available) is present, this indicates that the data or information was not provided by the relevant stakeholder, but the action was still considered because it was relevant. The future monitoring of these actions will provide them, if possible, in a more precise way.

The **behavioural actions** of the Municipality and the signatories of the CCC are presented in Table B-2.2c. The most significant actions that the Municipality is implementing in terms of behaviour and strategies/governance will also be reported and explored in more detail in the C Modules.

Added to these are the numerous actions implemented by the stakeholders who have joined the Call to action. As will be explained later, these have been included in the behavioural part, as they mainly involve information, awareness or training actions, or actions which are not currently quantifiable in terms of emissions reduction. Given the numerousness of these actions, they have been reported in **Annex 4**.

The reference to the investment per single action of the external stakeholders is not reported in this document but will be identified in the Investment Plan, in which, for each stakeholder and each action, the investment amounts will be identified - where available. This choice was made to protect the investment plans of the individual partners, while respecting the need for confidentiality. However, investments by the municipal sectors are always reported - where available.

As detailed later on, the majority of the actions concern the Buildings and Transport sectors, the most relevant sectors in terms of emissions, as highlighted by the baseline (Module A-1).



Table B-2.2a – Measurable actions

## Buildings sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [Mln€]	Systemic Levers		
Biomethane production	HERA	4,927	2020-continued	-	Technologies	Financing	-
Energy efficiency of the IDAR water treatment plant	HERA	136	2020-2022	-	Technologies	Financing	-
Energy efficiency improvement of IDAR plant lifting	HERA	40	2022- 2026	-	Technologies	Financing	-
Energy efficiency of pumping systems	HERA	236	2020-2022	-	Technologies	Financing	-
DHS efficiency	HERA	858	2018-2022	-	Technologies	Financing	-
LED revamping	HERA	34	2019-2020	-	Technologies	-	-
Energy efficiency of gas systems and networks	HERA	91	2018-2021	-	Technologies	Financing	-
Power to Methane	HERA	1,450	2021-2024	-	Technologies	Financing	Governance and Policy
Calderara RES installation	HERA	1,798	2021-2025	-	Technologies	Financing	-
PV 161.3 kWp	CAAB	62	NA	-	Technologies	Financing	-
Food City Logistic: PV on shelters - 1.4 MWp	CAAB	555	NA	-	Technologies	Financing	-
BHS photovoltaic system, North Terminal and Airside (first phase)	Airport	1,715	2022-2024	-	Technologies	-	-
Energy efficiency of Bologna provincial headquarters	CNA	30	2017-2018	-	Technologies	-	-
PV installation on the roof of the Illumia headquarters	Illumia	39	2023-2024	-	Technologies	-	-
Establishment of REC Pallavicini	Illumia	370	2023-2025	-	Democracy and Participation	Governance and Policy	Technologies
RES installation on agricultural land	Illumia	370	2022-2024	-	Technologies	-	-
NZEB Building (Hall 26)	AUO BO	86	2023-2026	-	Technologies	-	-
NZEB Building (Hall 17)	AUO BO	76	2023-2025	-	Technologies	-	-
NZEB Building (Hall 7)	AUO BO	-	2024-2026	-	Technologies	-	-



NZEB Building (Hall 12)	AUO BO	173	2025-2027	-	Technologies	-	-
Redevelopment of hospital building	AUO BO	5	2023-2026	-	Technologies	-	-
Sant'Orsola Polyclinic trigeneration plant	AUO BO	1,589	2017-2030	-	Technologies	-	-
Trigeneration plant	AUSL BO	5,042	2018-2022	-	Technologies	-	-
Cooling system intervention	AUSL BO	130	2023-2024	-	Technologies	-	-
Widespread energy efficiency interventions	AUSL BO	627	2024	-	Technologies	-	-
Energy efficiency of headquarters in via Castiglione	AUSL BO	27	2022-2023	-	Technologies	-	-
Energy efficiency of Polo Roncati	AUSL BO	174	2022-2023	-	Technologies	-	-
Energy efficiency of clinic Montebello	AUSL BO	20	2022-2023	-	Technologies	-	-
Energy efficiency of clinic Mengoli	AUSL BO	63	2022-2023	-	Technologies	-	-
Energy efficiency of clinic Borgo Panigale	AUSL BO	44	2022-2024	-	Technologies	-	-
nZEB building: new community house	AUSL BO	51	2023-2025	-	Technologies	-	-
Rizzoli Hospital trigeneration plant	IOR BO	722	2024-2025	-	Technologies	-	-
Energy efficiency of Rizzoli thermal power plant	IOR BO	546	2023-2024	-	Technologies	-	-
Widespread energy efficiency interventions at Rizzoli Hospital	IOR BO	118	2023-2025	-	Technologies	-	-
Cavaticcio hydroelectric plant	Canali di Bologna	770	2022-2023	-	Technologies	-	-
Nzeb Building	Emilbanca	-	2022	-	Technologies	Governance and Policy	-
Relamping of Pilastro branch	Emilbanca	3	2023	-	Technologies	-	-
Relamping of the Azeglio branch	Emilbanca	1	2023	-	Technologies	-	-
Relamping San Donato branch	Emilbanca	2	2023	-	Technologies	-	-
Relamping Pianoro branch	Emilbanca	1	2023	-	Technologies	-	-
Relamping Headquarters Business Park	Emilbanca	14	2022	-	Technologies	-	-
Relamping Mazzini headquarters	Emilbanca	39	2023	-	Technologies	-	-
New NZEB building	Ducati	-	2022	-	Technologies	Governance and Policy	-
Installation of RES systems	Ducati	95	2023-2024	-	Technologies	-	-
Energy efficiency of systems	Ducati	56	2022	-	Technologies	-	-
Relamping	Ducati	112	2018-ongoing	-	Technologies	-	-



Energy diagnosis of systems	Ducati	-	2023	-	Technologies	-	-
Digital platforms, consumption optimization software	Ducati	-	2023-2025	-	Technologies	-	-
Relamping shops	Coop Alleanza	1,072	2019-2022	-	Technologies	-	-
Existing photovoltaic systems	Coop Alleanza	232	2018-2023	-	Technologies	-	-
Remote management of BMS adjustments	Coop Alleanza	-	2019-2022	-	Technologies	-	-
Public Private Partnership	Municipality of Bologna	6,122	2025-2030	155.48	Governance and Policy	Financing	-
Photovoltaic systems	Municipality of Bologna	7,400	2024-2030	6.00	Governance and Policy	Financing	-
Construction of the "New hub 0-6 via Menghini" school	Municipality of Bologna	31	2023-2025	4.98	Technologies	-	-
Extension of the children's center via Monterumici, Marzabotto	Municipality of Bologna	-	2023-2025	4.77	Technologies	-	-
New Volta Mazzini school - EIB financing	Municipality of Bologna	30	2023	5.00	Technologies	-	-
New Besta schools, viale Moro	Municipality of Bologna	137	2023-2024	18.50	Technologies	-	-
Construction of a new gym in the Bonori sports center	Municipality of Bologna	13	2022-2026	6.05	Technologies	-	-
Construction of new nursery via Barbacci	Municipality of Bologna	51	2023	4.65	Technologies	-	-
Redevelopment of Villa Aldini and new nursery school in the woods	Municipality of Bologna	5	2023	2.93	Technologies	-	-
Creation of a children's museum	Municipality of Bologna	4	NA	5.00	Technologies	-	-
Redevelopment and valorisation of the municipal theatre	Municipality of Bologna	6	2023-2026	7.10	Technologies	-	-
Reconstruction of Carracci primary and secondary school	Municipality of Bologna	23	2022-2023	8.20	Technologies	-	-
Construction of a new nursery school in the Pozzati garden	Municipality of Bologna	3	2021-2023	2.90	Technologies	-	-
Construction of a new nursery school and Tempesta primary school	Municipality of Bologna	3	2021-2023	3.89	Technologies	-	-
Interventions at the Rocca nursery school	Municipality of Bologna	-	2021-2023	1.00	Technologies	-	-
Completion of the Rita Levi Montalcini school	Municipality of Bologna	2	2021-2023	3.80	Technologies	-	-
New nursery school "Giancarlo Cerini" in via Abba	Municipality of Bologna	1	2023	2.70	Technologies	-	-
Interventions at Farini secondary school and P. Marella primary school	Municipality of Bologna	89	2023	1.00	Technologies	-	-
New Federzoni school center via Cage	Municipality of Bologna	3	2023-2025	8.87	Technologies	-	-



Construction of new Armandi Avogli schools	Municipality of Bologna	51	2024-2026	3.30	Technologies	-	-
New construction of Dozza secondary school	Municipality of Bologna	105	2023	17.35	Technologies	-	-
Demolition and reconstruction of the Cavazzoni nursery	Municipality of Bologna	37	2023	4.65	Technologies	-	-
Renovation of Fortuzzi Primary School	Municipality of Bologna	-	2023	0.67	Technologies	-	-
Construction of Parco Grosso nursery - Project Financing	Municipality of Bologna	-	2023	3.50	Technologies	-	-
Redevelopment of building envelopes to increase energy efficiency	Municipality of Bologna	306	NA	11.40	Technologies	-	-
Water dispensers - Water houses	Municipality of Bologna	11	2019-2023	0.06	Democracy and Participation	Social Innovation	-
Redevelopment of sports buildings	Municipality of Bologna	-	2022-2026	11.09	Technologies	-	-
Superbonus program	ACER	779	2021-2023	-	Democracy and Participation	Governance and Policy	-
Energy efficiency via Gnudi	ACER	53	NA	-	Democracy and Participation	Technologies	-
Energy efficiency via Bentivogli	ACER	187	NA	-	Democracy and Participation	Technologies	-
Energy efficiency via Libia	ACER	221	NA	-	Democracy and Participation	Technologies	-
Energy efficiency via Fioravanti	ACER	43	NA	-	Democracy and Participation	Technologies	-
Energy efficiency through replacement of window frames	UniBo	56	2023-2027	-	Technologies	-	-
Energy efficiency through roof insulation	UniBo	115	2023-2027	-	Technologies	-	-
Energy efficiency through insulation of vertical walls	UniBo	-	2023-2024	-	Technologies	-	-
New NZEB building	UniBo	-	2024-2027	-	Technologies	-	-
Relamping buildings	UniBo	-	2024-2027	-	Technologies	-	-
Building Automation	UniBo	-	2024-2027	-	Technologies	-	-
Replacement of heat generators	UniBo	-	2024-2027	-	Technologies	-	-
RES installation	UniBo	206	2024-2027	-	Technologies	-	-
Purchase of green energy	UniBo	12,525	2024	-	-	-	-
DH network implementation	UniBo	-	2026	-	Technologies	-	-
Energy management interventions	UniBo	490	2027	-	Technologies	-	-
Energy efficiency of the Giovanni XXIII Service Center	ASP	53	2023-2024	-	Technologies	-	-



Integrated Energy Service "Consip"	ASP	505	2022-2030	-	Governance and Policy	Financing	-
System of sustainability objectives	Confindustria Emilia	7	2020-continued	-	Increase of Knowledge	Democracy and Participation	-
RES installation	Toyota MHM	33	2023-2024	-	Technologies	-	-
New ZEB building used as a canteen	Toyota MHM	28	20223-2024	-	Technologies	Governance and Policy	-
Electrification of buildings	Toyota MHM	33	2023-2024	-	Technologies	-	-
New logistics hub	Toyota MHM	-	2023-2027	-	Technologies	Governance and Policy	-
New heating and cooling system	Toyota MHM	-	2023-2025	-	Technologies	-	-
Installation of photovoltaic system	Toyota MHM	260	2018-2021	-	Technologies	-	-
Heat pumps for offices	Toyota MHM	-	2019	-	Technologies	-	-
Public tender "Roveri area"	Companies in the "Roveri" Industrial Area	34	2018-2019	-	Technologies	Governance and Policy	-
Photovoltaic San Donato	Rete Ferroviaria Italiana	3,701	2024-2026	-	Technologies	-	-
Efficiency improvement of the Viale Aldo Moro offices	Regione Emilia Romagna	965	2022-2028	-	Technologies	-	-
New photovoltaic system on building	CRIF	64	2023	-	Technologies	-	-
LEED certification	CRIF	-	2023-ongoing	-	Technologies	Governance and Policy	-
Construction of new building	CRIF	-	2023	-	Technologies	-	-
New ground-mounted photovoltaic system	CRIF	888	2024	-	Technologies	-	-
Energy efficiency on a building	CRIF	-	2025	-	Technologies	-	-

### Transport Sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers		
Biofuel from waste oils	HERA	360	2020-continued	-	Technologies	Financing	-
Purchase of electric vehicles	Airport	299	2023-2030	-	Technologies	-	-



Installation of electric car charging stations	Airport	-	2023-2025	-	Technologies	-	-
Eurovelo 7 creation	Airport	-	2022-2025	-	-	-	-
Actions to promote soft mobility	Airport	5	2022-2025	-	-	-	-
MuoviAMOCi project	Airport	334	2020-continued	-	Social Innovation	Democracy and Participation	-
Public transport employees	AUO BO	966	2024-2027	-	-	-	-
Bike to Work project	AUO BO	24	2021-2027	-	Social Innovation	-	-
Soft mobility	AUO BO	-	2023-2024	-	Social Innovation	-	-
Car pooling project	AUO BO	-	2023-2024	-	Social Innovation	-	-
Soft mobility promotion	AUSL BO	-	2023-2024	-	Social Innovation	-	-
Bike to Work	AUSL BO	26	2021-2027	-	Social Innovation	-	-
Incentives for commuting to work	AUSL BO	1,032	2006-2027	-	Social Innovation	-	-
Fleet electrification and purchase of hydrogen vehicles	TPER	3,254	2023-2027	-	Technologies	-	-
Behavioral innovation and MAAS	TPER	-	NA	-	Social Innovation	-	-
Electric car sharing	TPER	256	NA	-	Social Innovation	-	-
Bus fueling with biomethane	TPER	1,102	NA	-	Technologies	Financing	-
Adoption of Mobility Manager	Emilbanca	-	2021-continues	-	Social Innovation	Democracy and Participation	-
Car sharing / Car Pooling	Emilbanca	58	2017-continued	-	Social Innovation	-	-
New car charging infrastructure at Mazzini headquarters	Emilbanca	-	2022	-	Technologies	-	-
New Business Park car charging infrastructure	Emilbanca	-	2022	-	Technologies	-	-
Electrification of the company fleet	Emilbanca	4	2022-continued	-	Technologies	-	-
Sustainable Urban Logistics (Cargo bike / Green fleets)	Emilbanca	1	2022-continued	-	Social Innovation	Democracy and Participation	-
Fleet electrification and new refueling stations	Ducati	-	2022-2028	-	Technologies	-	-
Bologna Città 30	Municipality of Bologna	-	2023-2024	24.00	Social Innovation	Governance and Policy	Financing



Green area	Municipality of Bologna	-	2021-2030	3.20	Social Innovation	Governance and Policy	Financing
Environmental Limited Traffic Zone	Municipality of Bologna	-	2020-2025	0.32	Social Innovation	Governance and Policy	Financing
Incentive for intermodality	Municipality of Bologna	-	2023-2026	NA	Social Innovation	Governance and Policy	-
Free subscriptions for students	Municipality of Bologna	-	NA	NA	Social Innovation	Governance and Policy	-
Electric monorail for Airport-Station connection	Municipality of Bologna	300	2020-2022	99.90	Technologies	Financing	-
New Red Line tram network	Municipality of Bologna	69,915	2019-2030	513.00	Technologies	Financing	Governance and Policy
New tram network Northern section of the Green Line	Municipality of Bologna	13,833	2024-2026	272.00	Technologies	Financing	Governance and Policy
Metropolitan Railway Service completion	Municipality of Bologna	-	2019-2030	101.20	Technologies	Financing	Governance and Policy
Trolleybuses	Municipality of Bologna	-	2019-2031	146.75	Technologies	Financing	Governance and Policy
Bologna-Portomaggiore underground works	Municipality of Bologna	-	2019-2032	57.37	Technologies	Financing	Governance and Policy
Cycle network	Municipality of Bologna	6,800	2019-2024	30.00	Social Innovation	Governance and Policy	-
Active mobility promotion: cycle stations and bicycle parking	Municipality of Bologna	-	2019-2030	2.10	Social Innovation	Governance and Policy	-
Bike sharing	Municipality of Bologna	265	2018-2025	0.40	Social Innovation	Governance and Policy	-
Free-floating car sharing	Municipality of Bologna	-	2020 - 2024	NA	Social Innovation	Governance and Policy	-
Car and bike sharing mobility vouchers	Municipality of Bologna	-	2023	0.40	Social Innovation	Governance and Policy	-
Incentives for the purchase of electric bikes and pedal-assisted cargo bikes	Municipality of Bologna	-	2022-2023	1.80	Social Innovation	-	-
PV systems for charging stations	Authorized photovoltaic systems	89	2024-2030	-	Technologies	-	-
Installation of charging stations	Toyota MHM	-	2024	-	Technologies	-	-
Vehicle replacement for company transport	Golinelli Foundation	-	2023-2029	-	Technologies	-	-





### IPPU sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers
Green Anesthesia	AUSL BO	-	2023-2024	-	Technologies - -

### AFOLU sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers
Woodland belt	Airport	2,300	2023-2024	-	- -
Green works in the city	Municipality of Bologna	303	2018-2030	1.52	Governance and Policy Democracy and Participation Financing

### Waste Sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers
Good practices for waste reduction	AUO BO	-	2024-2030	-	Social Innovation Governance and Policy -
Implementation of use of multipurpose material	AUSL BO	-	2022-2030	-	Social Innovation - -
AUSL washable napkins	AUSL BO	202	2025-2030	-	Social Innovation Technologies -
Second Life reuse area	Municipality of Bologna	-	2014-continued	0.08	Democracy and Participation Social Innovation -
Projects for the reuse of municipal administration assets	Municipality of Bologna	-	2020-continued	NA	Democracy and Participation Social Innovation -



Discount on the "anti-waste" waste tax	Municipality of Bologna	-	2018- ongoing	0.18	Democracy and Participation	Social Innovation	-
Discount on waste tax	Municipality of Bologna	-	2018-ongoing	0.10	Democracy and Participation	Social Innovation	-

### Transversal sector

Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers		
Purchase of green electricity	Airport	2,988	2020	-	-	-	-
Purchase of certified green electricity	AUO BO	3,587	2018-2030	-	Social Innovation	Governance and Policy	-
Purchase of certified green electricity	AUSL BO	8,981	2018-2030	-	-	-	-
Purchase of certified green electricity	IOR BO	3,407	2018-2030	-	-	-	-
Purchase of electricity from renewable sources	TPER	-	ongoing	-	-	-	-
Purchase of green energy	Emilbanca	397	2019 - ongoing	-	-	-	-
Purchase of certified green energy	Ducati	664	2018-ongoing	-	-	-	-
iENTRANCE@ENL project	CNR	-	2022-2025	-	Increase of Knowledge	Financing	-
Purchase of green energy	Golinelli Foundation	210	2024-2029	-	-	-	-

**Table B-2.2b – Measurable future actions under planning (all sectors)**

Sector	Action	Stakeholders	Direct impacts (reduced emissions) tonCO <sub>2</sub> eq/y	Timing	CapEx [MIn€]	Systemic Levers		
Buildings	Energy Park	HERA/other subjects	390,842	2023-2030	-	Technologies	Financing	Governance and Policy
Buildings	Energy Park agriPV Technopole and reforestation	HERA	6,840	NA	-	Technologies	Financing	Governance and Policy
Buildings	Expansion of the DH network	HERA	14,900	2021-2025	-	Technologies	Financing	-



Waste	Biogas project	CAAB	201	NA	-	Technologies	Financing	-
Buildings	Establishment of a REC	CAAB	-	NA	-	Technologies	Financing	-
Buildings	Electrification of buildings	Airport	5,093	2023-2030	-	Technologies	Financing	-
Buildings	North airside photovoltaic system Phase 2	Airport	5,626	2024-2030	-	Technologies	-	-
Transport	Implementation of charging stations for airport carriers	Airport	-	2024-3020	-	Technologies	-	-
Buildings	PV agrivoltaic (22.5 MW)	Confagricoltura	8,328	2024-2027	-	Technologies	-	-
Transversal	Telemedicine implementation	AUSL BO	-	2023-2024	-	Technologies	-	-
Transport	Increase in use of public services	IOR BO	268	2023-2024	-	Social Innovation	-	-
Transversal	Telemedicine implementation	All healthcare companies	-	2023-2024	-	Technologies	Financing	-
Buildings	Energy audit of Business Park	Emilbanca	-	2019-ongoing	-	Technologies	-	-
Buildings	Development of new RES plants	Ducati	222	2025-2028	-	Technologies	-	-
AFOLU	Urban reforestation	Ducati	110	2027-2029	-	Social Innovation	Democracy and Participation	-
Buildings	New relamping interventions	Coop Alleanza	36	2027	-	Technologies	-	-
Buildings	Photovoltaic systems to be installed	Coop Alleanza	88	2018-2023	-	Technologies	-	-
Buildings	Energy remodeling	Coop Alleanza	104	2024-2027	-	Technologies	-	-
Buildings	Photovoltaic Borgo Panigale	Coop Alleanza	366	NA	-	Technologies	Financing	-
Buildings	Replacement of refrigerator units	CNR	1	2023-2024	-	Technologies	-	-
Transversal	Memorandum of Understanding between the Municipality and CNR	CNR	-	2023-2025	-	Financing	Governance and Policy	Democracy and Participation
Buildings	Boiler replacement	CNR	152	2023-2024	-	Technologies	-	-
Buildings	RES installation	CNR	28	2023-2025	-	Technologies	-	-
Buildings	Thermal insulation of buildings	CNR	122	2023-2025	-	Technologies	-	-
Buildings	Agrivoltaic system	Authorized photovoltaic systems	5,060	2023	-	Technologies	-	-
Buildings	Photovoltaic system ex San Luca quarry	Authorized photovoltaic systems	1,480	2023	-	Technologies	-	-
Buildings	Photovoltaic system Via Persicetana	Authorized photovoltaic systems	3,849	2023	-	Technologies	-	-
Buildings	Public Private Partnership	ASP	-	2024-2030	-	Governance and Policy	Financing	-



Buildings	Replacement of painting burners	Toyota MHM	-	2023-2033	-	Technologies	-	-
Buildings	Heat pump system for the workshop	Toyota MHM	-	2023-2033	-	Technologies	-	-
Buildings	Photovoltaic installation on a building	Toyota MHM	130	NA	-	Technologies	-	-
Buildings	Photovoltaic San Ruffillo	Rete Ferroviaria Italiana	3,701	2025-2028	-	Technologies	-	-



## Summary of measurable actions by sector

The multiplicity of actions introduced by both the Administration and the stakeholders confirms the commitment towards the redevelopment and energy efficiency of private and public **buildings** and those with industrial and/or commercial purposes. The principles of redevelopment from an NZEB perspective are now consolidated at regional level with a law that has prescribed the obligation to respect the minimum requirements for almost zero energy buildings from 1 January 2017 for public buildings and from 1 January 2019 for all the other buildings. The opportunities made possible by the energy market see a significant number of interventions aimed at self-consumption, with various actions aimed at the self-production of electricity through renewable sources, thus internalizing an increasingly strategic resource, energy. The purchase of certified green energy is also spreading: important players and partners such as the **Local Health Authorities, Emil Banca Credito Cooperativo, Ducati, the University of Bologna** and the Municipality of Bologna itself declare that in the next few years, and in any case by 2030, they will cover their energy needs exclusively with green energy.

In the field of **transport and mobility**, the territory of the Municipality of Bologna can count on an important external player (TPER) which, in synergy with the objectives presented by the municipal council, has started an important process of electrification of the fleet with the aim of achieving complete decarbonization by 2030, also through the purchase of energy coming exclusively from renewable sources. In the electrification process of the territory, the installation of charging infrastructure for electric vehicles is becoming widespread, also by private stakeholders. The Transport and mobility sector is the subject of awareness campaigns for citizens, city mobility plans, and incentives for the use of alternative mobility. In fact, the involvement of citizens plays an essential role within municipal policies to increasingly increase the use of LPT. The Municipality is working on wide range of projects regarding the tram network, the strategy for strengthening the Metropolitan Railway Service and the extension of the 260 km of existing cycle network (survey March 2023): currently the network for daily mobility has 65 km of network projects already financed.

The **IPPU** sector is marginal within the overall portfolio, considering the limited weight of emissions from the industrial sector within the municipal territory of the city.

In the **waste and wastewater sector**, the city is home to one of the most important multi-utility companies at national level, the Hera Group. The company is aiming to produce large quantities of clean energy as part of the management of public services, including the production of biofuel from waste sources such as used oils and biomethane from organic waste and wastewater produced by the city. Another highly impactful sector in the waste sector is the medical-health sector: the three healthcare companies involved in the Climate Mission are implementing virtuous waste reduction actions through experiments in the purchase of green products, multi-purpose materials and washable nappies.

**The AFOLU** sector sees an overall limited contribution from external stakeholders. The Municipality is committed to make the city greener, to increase its tree balance and square meters of greenery per inhabitant, to reduce urban pollution and to improve healthiness and sociability.

The objectives of safeguarding, increasing the quantity and improving the performance of the city's green areas are included in the "Green Plan" (integrated within the General Urban Plan), in the Building Regulations and in its annex Public and Private Green Regulations and in the Green Footprint (Impronta Verde) project. Fields of action concern public greenery, private greenery, usable and mitigation greenery, tree phytomass, agricultural areas, parks, gardens, protected natural areas and also the greening of building envelopes (roofs, green walls and green roof), with a view to finding the opportunities and contexts to strengthen the urban eco-network and provide new ecosystem services of regulation, mitigation and adaptation, also in new buildings, urban and infrastructural transformations. From a quantitative point of view, the objective is to significantly increase the municipal tree budget (number of municipal public trees in the territory) from the current 85,000 to 100,000, to guarantee at least 1 public tree for every 4 inhabitants, and to increase by at least 10% (about 100 hectares) public green areas.



### Behavioural actions

Behavioural measures must be considered as crucial for reducing CO<sub>2</sub> emissions in the city. Changing people's behaviours and habits through training, information and promoting a culture of energy efficiency, renewable sources and climate neutrality can produce significant results even without requiring large investments. The role of facilitator within this process can be played both by the municipal administration and by numerous other local entities: the synergy between the actors represents an important added value that guarantees greater participation and awareness of all citizens.

Table B-2.2c below highlights the projects and initiatives for each stakeholder with a summary description. Behavioural actions include:

- Innovative governance actions of the Municipality of Bologna, which are presented in detail in Module C of this document.
- Training and awareness actions, information campaigns, citizen involvement activities and events, promotion of good behavioural practices, implemented by the Municipality, associations, foundations or other external stakeholders.
- Actions linked to an obligation deriving from national legislation, as in the case of the appointment of the Mobility Manager for companies and entities with more than one hundred employees. This orientation responds to the need to place more sustainable choices at the centre of interest not only concerning the business but also employees and their choices, as an integral part of the contribution that every single citizen can make towards reducing emissions. Furthermore, the diffusion of these practices at a territorial level means that positive emulation dynamics are created between competitors and positive synergies between the same actors both for the individual entities and for the territory.

The following behavioural actions were collected through:

- dialogue with CCC partners engaged already during the application phase;
- The dialogue with the CCC partners who also presented concrete and quantified actions for the reduction of emissions and related investments.

Added to these are further actions presented by numerous local entities who responded to the Call to Action activated between October and December 2023, therefore supporting the Climate Mission.

The actions presented in the call are mostly of a behavioral nature (information, training and dissemination actions). There are also some environmental, digital and technological innovation actions and projects.

### Potential energy savings from behavioural change measures

Interventions	Range of energy savings
Feedback	5 - 15 %
Feedback in real time (ex. Smart meters)	5 - 15 %
Indirect feedback (ex. Energy bills)	2 - 10 %
Energy audits	5 - 20 %
Initiatives promoted within the community	5 - 20 %
Combination of interventions	5 - 20 %

Source: EEA (European Environment Agency - [www.eea.europa.eu](http://www.eea.europa.eu))

Figure 19: Potential energy savings from behavioural measures (EEA)



**Given the processes activated by the Municipality for the involvement and support of citizens (Assembly for Climate, Energy Help Desk and Energy and Environment Showroom first and foremost), and the numerous actions collected by the CCC partners and the subjects who support Bologna Missione Clima having joined the call to action, it has been estimated that the contribution to the reduction of GhG emissions by behavioural actions can effectively reach 20% of the "Emissions gap to be addressed in the CCC Action Plan.**

<b>B-2.2c: Behavioural actions of the Municipality and Mission partners</b>		
<b>Stakeholders</b>	<b>Action name</b>	<b>Description</b>
Municipality of Bologna - Ecological Transition and Climate Office Sector	Citizens Assembly for Climate	The Citizen Assembly is an instrument of direct democracy that involves a sample of citizens to help propose and implement municipal policies. The Assembly is deliberative, that is, it is based on a method of dialogue and argumentation between all participants. It is convened at most once a year, on a temporary basis, on a particularly relevant topic, falling within the competence of the Municipality of Bologna. Details of the Citizens' Climate Assembly 2023 are set out in Module C of this document.
Municipality of Bologna - Ecological Transition Sector and Climate Office	Energy Help Desk (Sportello energia)	Tool aimed at citizens to improve information and knowledge on the benefits deriving from the use of renewable sources, increase awareness on their energy consumption, orient behavior towards energy efficiency. Further details are reported in Module C of this document.
Municipality of Bologna - Sustainable Mobility and Infrastructure Sector	Mobility Desk	Tool aimed at citizens for reporting issues and submitting proposals on mobility. Through email contact it is possible to request authorizations for exceptional access lasting more than 96 hours in remote controlled areas (University/T/bus lanes etc.), electric bicycle incentives, areas reserved for disabled people/for loading and unloading areas, Public Interest markings, certifications on the functioning of traffic lights, administrative classification of roads. Furthermore, it is possible to obtain first-level telephone information (how to submit the request, forms to use, procedures times), for many aspects concerning urban mobility.
Municipality of Bologna - Ecological Transition Sector and Climate Office and Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi	Energy and Environment Showroom	The Energy and Environment Showroom, managed and coordinated by the Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi, is engaged in environmental awareness and education actions in schools and involves more than 5000 students every year for training on ecological transition and the climate crisis. It is a fundamental tool of the municipal administration to increase awareness on how to tackle the Bologna Climate Mission and therefore the "zero climate impact by 2030" challenge, with educational actions dedicated to schools. The Energy and Environment ShowRoom focuses its environmental education actions in the urban dimension, with the aim of training active and aware citizens.
Municipality of Bologna - Sustainable Mobility and Infrastructure Sector	Promotion of active mobility for schools	Community project which aims to spread sustainable school mobility at neighborhood and/or school level. Total financing of €260,000 for the three-year period 2019-2023.



Municipality of Bologna - Sustainable Mobility and Infrastructure Sector	Adoption of Mobility Manager	It promotes the creation of organisation, management and rationalization systems for the demand for private transport, in particular for the mobility of Municipality employees and the implementation of sustainable mobility policies applied to home-work travel.
Municipality of Bologna - Public Goods Management Sector	Education in schools and workshops for citizens	Projects aimed at schools and citizens; repair workshops, material regeneration with associations present in the area involving schools and neighborhoods.
Airport	Adoption of Mobility Manager	The airport area mobility manager has been appointed with the task of analysing, managing and monitoring traffic flows and transport to and from Bologna Airport, activating agreements, promoting and enhancing new, more sustainable methods of access to the airport.
All healthcare companies	Purchase of green products	Purchase of products with characteristics that could contribute to the reduction of net waste produced by healthcare companies.
	Training course	Environment and Health Programme: the course aims to actively involve healthcare workers in training and information courses on environmental and health issues and in concrete actions to reduce the use of plastics in favor of separate waste collection and recycling.
	Smart Working Plan	Plan for reducing employee travel with a view to reducing CO2 emissions.
CNA	Training/information/awareness	Diffusion of the culture of energy efficiency and the use of renewable sources in companies. The project allocates funds with a time horizon up to 2030.
CNA	Building Bonus Help Desk	Management of citizen requests for the redevelopment of residential buildings with the use of tax bonuses.
TPER	Mobility management	Agreements with local companies to reserve a portion of the "Corrente" vehicle service as well as agreements and discounts for the use of LPT.
Emil Banca Credito Cooperativo	Acquisition of tax credits	The bank, through the acquisition of tax credits from buildings owners or from the companies carrying out the works, allowed the immediate monetization of the credits and pre-financed the interventions, giving the possibility of carrying out efficiency improvement interventions also for a group of beneficiaries.
	Subsidized financing with energy and environmental objectives	A total of 58 loans were raised in 2023.
	Information campaigns on ESG topics	631 companies involved in 2023; training meetings with 1500 companies and 2500 entrepreneurs of which 32.5% in the province of Bologna.
	Subsidized financing for investments with environmental objectives	Type of investments financed: energy efficiency, organic conversion, sustainable mobility.
	Information campaigns for the agricultural sector on environmental issues	Creation of training and awareness meetings with operators in the agri-food sector on the topics of energy saving and efficiency, energy production systems from renewable sources, conscious use of water resources.





Ducati	Energy management system	Energy management system in accordance with ISO 50001 to obtain certification.
	Environmental and energy training of employees	Development of mandatory training for all employees and collaborators on the topic of energy saving and the environmental impact of greenhouse gases.
	Corporate carpooling	The program provides a number of parking spaces reserved for those who join the program.
	Adoption of Mobility Manager	Ducati has equipped itself with a Mobility Manager, has drawn up the Home-Work Travel Plan and has signed the Mobility Management Agreement with the Municipality of Bologna.
CNR	Dedication of a square to Piero Angela	As part of the city of knowledge project, the square in front of the CNR headquarters will be named after Piero Angela.
	CNR centenary	Initiatives to raise awareness, disseminate and inform the public of the research activities carried out within the CNR.
University of Bologna	Strengthening local public transport	Through an agreement with TPER, discounts and preferential rates to promote annual public transport. The agreements also concern the branch offices of Forlì, Cesena, Ravenna and Rimini.
	Enhancement of cycling mobility	Encourage an increase in the use of bicycles by offering parking, charging stations, bicycle maintenance and marking services.
	Adoption of Mobility Manager	The three-year annual mobility management plan has been prepared with the Municipality of Bologna as well as the annual Home-Work Travel Plan
Confindustria Emilia	Sustainability Service Desk	The Sustainability Desk is a service to help companies set up their sustainability plan. Through this service, Confindustria provides support to companies to carry out an initial analysis that identifies the intervention priorities for the individual company and sets up a corporate sustainability strategy.
	"Albo Circular" Project	Free circular economy platform designed for companies to make services, products and production processes more sustainable. Through quick matching between companies it is possible to identify operators and consultancy services, certifications, analysis and validation, and announcements to sell or purchase materials or production waste.
Golinelli Foundation	Young Digital Entrepreneurship Camp project	Free training course oriented towards entrepreneurship in the "digital" innovation sector, which promotes technical skills and abilities essential for the future by stimulating resourcefulness through the development of creative and innovative ideas in the environmental and digital fields
	Climate change Teacher Academy project	The foundation is a partner of the three-year teacher training project on climate change, financed by the Erasmus+ Teacher Academy, the new flagship action of the Erasmus+ 2021-2027 programme. Financing 80% European funds, 20% Foundation
	Big Data & Climate change School Program project	Born from the collaboration between the Carisbo Foundation and the Golinelli Foundation, it is a free path dedicated to students in the 2nd and 3rd year of lower secondary schools and in the first year of upper secondary schools in the Metropolitan City of Bologna. The initiative offers a series of free workshops to explore an innovative sector with strong growth and development prospects such as that of Big Data and climate change. The project



		promotes transversal skills and technical capabilities that are essential for the future. Financing partly Carisbo partly Golinelli.
CRIF	Sustainable mobility	<ul style="list-style-type: none"> <li>• Inclusion of sustainable mobility among the 4 pillars of the CRIF Environmental Policy.</li> <li>• Adoption of a corporate Mobility Manager with the aim of measuring, analyzing, designing and monitoring new mobility solutions that meet the travel needs of the company population.</li> <li>• Three-year Mobility Management agreement with the Municipality of Bologna</li> <li>• Introduction of a Mobility Plan to support employees in travel, home-work and personal mobility which includes agreements for the use of alternative transport modes to the private car (e.g. contribution for the purchase of an annual LPT subscription and discounts on the use of urban car sharing)</li> <li>• CRIF is evaluating further actions in 2024 including the introduction of a carpooling platform and joining the bike-to-work tender of the Municipality of Bologna.</li> <li>• There is a specific MOBILITY section on the company intranet in which all the news and discounts on mobility are periodically promoted (e.g. bonus for the purchase of electric bikes, bonus for the use of the bike or local car sharing)."</li> </ul>

### B-2.3 Strategy for residual emissions

The residual emissions for the City of Bologna are not attributable to specific critical issues, but can be associated with systemic conditions of a transversal nature. The reduction of these emissions can therefore take place within the framework of evolving scenarios at a territorial, regulatory and technological level, partly exogenous with respect to the municipal territory of Bologna. The result of these scenarios will predictably lead to the abatement of the residual emissions by 2030.

For example, the planned local photovoltaic potential is expected to increase significantly due to the technological improvement with the panels efficiency progressively increasing, and it is more than plausible that a large part of the photovoltaic surfaces will be created with new and more performing solar cells, thus reducing residual emissions (considering the same surface area).

Another aspect expected to increase local energy autonomy through renewable sources and reduce the city's residual emissions is that related to regulations and plans which will contribute positively to the objectives of emission neutrality in Bologna, for example:

- **The Pact for Work and Climate** of the Emilia-Romagna Region<sup>7</sup>, signed in December 2020 by 55 regional entities, such as local authorities, trade unions, businesses (industry, crafts, commerce, cooperation), universities (Bologna, Modena and Reggio Emilia, Ferrara, Parma), environmental associations (Legambiente, Zero Waste Municipalities Network), Third sector and voluntary work, professionals, Chambers of commerce and banks (Abi). Bologna, as the capital municipality of the Emilia-Romagna Region, participates in this pact which, among other things, provides for the elimination of GhG emissions to achieve carbon neutrality before 2050, and the transition to 100% renewable energy by 2035. In particular, the aim is to share a single strategy capable of generating quality work and fighting inequalities, while promoting the ecological transition, in order to achieve the objectives of the 2030 Agenda for sustainable development and obtain the results necessary to address the climate emergency. Among the main objectives included in the Pact are the following:
  - Complete decarbonization by 2050;
  - 100% renewable energy by 2035;

<sup>7</sup> <https://www.regione.emilia-romagna.it/pattolavoroeclima>



- 3% of regional GDP in Research;
- NEET (Not in Education, Employment or Training, i.e. young people who do not study or work) below the 10% threshold.

The Pact for Work and Climate is based on the quality of relations between institutions, economic and social representatives, on the mutual recognition of the role that each of the signatories plays in society, on the sharing of strategic objectives and the consequent assumption of responsibility. The new Pact establishes shared commitments and responsibilities to improve the quality of people's lives and limit the conflict between social/economic development and the environment. The Pact's objective, alongside the challenge of the climate emergency, is to safeguard employment and combat inequalities by creating new quality jobs. Priority is given to the rights and duties of individuals, especially young people and women. Alongside the main objectives, four transversal processes have been identified through which to achieve the aforementioned strategic objectives: digital transformation; simplification; legality; participation.

- **National decree for the definition of areas suitable for the installation of renewable energy production systems.** Over the last few years, both the national and regional regulations regarding areas suitable for the installation of renewable energy systems have undergone numerous changes. With Legislative Decree no. 387/2003, the national legislator wanted to base the implementation and development of the discipline in question on the basis of Guidelines drawn up thanks to the joint work of ministries and regions, then entrusting the latter with the possibility of providing for particular limitations based on to specific types of systems or particular characteristics of the individual areas included in the urban plans. Recently, Legislative Decree no. 199/21 has given a decisive turning point to the discipline, expanding the range of areas deemed suitable throughout the national territory and promoting the installation of new RES plants on them by virtue of special dedicated simplified authorization processes. Furthermore, the art. 20, paragraph 1 of the Legislative Decree. n. 199/21 provided for the publication of a new decree by the Ministry of the Environment and Energy Security - to be adopted in concert with the Minister of Culture, the Minister of Agricultural, Food and Forestry Policies, subject to agreement at the State Conference, Regions and Autonomous Provinces - through which to establish new principles and homogeneous criteria for the identification of surfaces and areas suitable and unsuitable for the installation of renewable source plants with a total power at least equal to that identified as necessary by the Integrated National Energy and Climate Plan (INECP) for the achievement of the development objectives of renewable sources. Pending the publication of the aforementioned decree, some regions have taken steps to adapt their internal provisions to those contained in articles 20 and following of the Legislative Decree. n. 199/21, thus updating the individual regional disciplines (ex multis, see the Resolution of the Emilia-Romagna Region no. 214/23, which introduced the provisions indicated above within the previous DAL no. 28/10, of Resolution no. 1458/21 and of DGR no. 194/22). Given the high number of properties subject to environmental, cultural and artistic constraints located in the historic centers of Italian cities, on which the possibility of installing RES plants is often prevented or extremely limited, the strategic use of the suitable areas mentioned above is fundamental for achieving the ambitious objectives set by the Climate City Contract and by the national and EU legislator. The expectations are that of an expansion of renewable production at a national and local level, starting with photovoltaic ones. In particular, the Municipality of Bologna will promote further regulatory and procedural simplifications, a greater possibility for innovative agrivoltaics, eroding the limitations provided for by the current regulations.
- Remodulation of the **forms of economic support related to energy sources**. Strengthening incentives for renewable sources aimed above all at the diffusion of small plants and eliminating those relating to fossil fuels. Furthermore, in this area we also mention the measures regarding widespread self-consumption from renewable sources. The new configurations on the matter, conceived following the EU provisions of the early 2000s and the Paris Agreement of 2015, Directive (EU) 2018/2001 (so-called RED II), represented a real turning point in energy and environmental policies of the European Union, placing the development of energy production from renewable sources at its centre. Among the tools introduced to accelerate the diffusion of these sources, a central role is undoubtedly played by the innovative concept of sharing



renewable electricity individually produced by public and private entities in the territories of the member countries. After an initial experimental phase introduced with art. 42-bis of law no. 8/20, Legislative Decree no. 199/2021 came into force in December 2021, through which the Italian legislator completed the transposition of the RED II directive. Articles 30 and following articles of the aforementioned decree further regulate the three different configurations of shared self-consumption through which it is possible to virtually share green energy, i.e. the "remote" individual self-consumption of renewable sources (AID - Autoconsumo individuale a distanza), the group of self-consumers of renewable energy acting collectively (AUC - Autoconsumo collettivo) and Renewable Energy Communities (RECs). Shared by the same technical structure, the three configurations differ in some singular characteristics. As for the common aspects, the three configurations are based on the provision by the Energy Services Manager (GSE) of an incentive - established by an imminent decree of the Ministry of the Environment and Energy Safety (MASE) based on the provisions of Legislative Decree. lgs. n. 199/21 and the ARERA Resolution of 27 December 2022 727/2022/R/eel - calculated on the share of renewable energy supplied into the grid by the plants of individual members, members or third-party producers relevant to the configuration and withdrawn from the connection and withdrawal points within the same hour within the same primary cabin (so-called shared energy). Regarding the differences, the configurations mentioned above diverge on various aspects: the first concerns the minimum number of members (only one consumer in the AID, at least two in the AUC and in the RECs); the physical limits of operability (same building or condominium in the AUC, while there are no limits in the AID and RECs); finally, the need to establish a new ad hoc legal entity or adapt a suitable existing one for the configuration (requirement required only for RECs). Given the peculiarities of each configuration, it is easy to understand how they can all coexist and integrate within an urban context, adapting to the needs and characteristics of private citizens, businesses, local authorities and other public and private entities present in the area. In conclusion, the configurations of widespread self-consumption from renewable sources introduce and give life to a new model of self-consumption and energy sharing which, thanks to the economic support provided by the incentives, will be able to reduce the economic impact relating to electricity consumption and provide a new stimulus to the installation of RES plants, while contributing to the achievement of the targets established for the reduction of emissions.

- Review of the **Integrated National Energy and Climate Plan (INECP)**. On 21 January 2020, the Ministry of Economic Development (now MASE) published the definitive text of the Integrated National Energy and Climate Plan (INECP). The main aim of the INECP is to create a new national energy policy that can simultaneously ensure environmental, social and economic sustainability and that accompanies this transition. In the Plan, objectives such as decarbonisation, the circular economy, efficiency and the rational and fair use of natural resources also represent tools for an economy that is more respectful of people and the environment, within a framework integrating the national energy market in the European market and with attention to security of supply. The Plan is structured into five main lines of intervention: decarbonisation; energy efficiency; energy security; development of the internal energy market; research, innovation and competitiveness. For each macro-objective the INECP defines policies and measures, provides future projections starting from the description of the current situation and gives an assessment of the impact of the policies and measures envisaged. The general objectives pursued by Italy with the INECP are multiple, interconnected, including:
  - accelerate the decarbonisation path, with 2030 as an intermediate stage and final objective of deep decarbonisation of the energy sector by 2050;
  - promote the evolution of the energy system, from the centralized structure based on fossil sources to the distributed one based mainly on renewable sources;
  - promote energy efficiency across all sectors;
  - promote the electrification of consumption;
  - promote research and development activities to support and accompany the energy transition;
  - continue to ensure adequate energy supplies, while adopting measures that improve the ability of renewables to contribute to security;



- promote market structures, infrastructures and rules which in turn contribute to the integration of renewables.

The INECP also sets national objectives for 2030 on energy efficiency, renewable sources and reduction of CO<sub>2</sub> emissions, such as, for example, the objective of covering at least 32% of national energy consumption in all sectors with renewable energy (55% share of renewables in the electricity sector). On 19 July 2023, the Ministry of the Environment and Energy Security sent the proposal to update the INECP to the European Commission. The aforementioned proposal will have to be revised following the observations received from the European Commission. In February 2024, the Ministry of the Environment and Energy Security started the consultation of the Competent Subjects in Environmental Matters as part of the Strategic Environmental Assessment (SEA) procedure for the Plan, making the SEA Environmental Report available. The approval of the definitive text must be concluded by June 2024. The objective is to reach a target of 52 GW of photovoltaic capacity by 2030 and this will also contribute positively to the neutrality objectives of the city of Bologna, reducing, through external actions, the percentage of residual emissions.

- **National Plan for Adaptation to Climate Change (NPACC)** represents the implementation tool of the National Strategy for Adaptation to Climate Change, approved with Directorial Decree no. 86 of 16 June 2015 by the Ministry of the Environment and Protection of Land and Land Sea (today MASE). In December 2022, the Ministry of the Environment and Energy Security published the text with the proposed Plan, updated compared to the 2018 version, then subjected to the public consultation envisaged by the Strategic Environmental Assessment (SEA) procedure. The main objective of the NPACC is to provide a national framework for the implementation of actions aimed at reducing the risks deriving from climate change to the minimum possible, improving the resilience and adaptive capacity of natural and socio-economic systems, as well as drawing take advantage of any opportunities that may arise with the new climatic conditions. The structure of the NPACC is structured as follows:
  1. The legal framework of reference;
  2. The national climate framework;
  3. Impacts of climate change in Italy and sectoral vulnerabilities (cryosphere, water resources, terrestrial ecosystems, soil and territory, etc.);
  4. Adaptation measures and actions;
  5. Adaptation governance.

This is an essential planning tool for a country like Italy, marked by serious fragilities, primarily the hydrogeological one; correct land management and the implementation of adaptation works are absolutely necessary to make cities, countryside and mountainous areas, inland and coastal areas more resilient to climate change. Following the Strategic Environmental Assessment procedure, the text was approved by the Minister of the Environment and Energy Security, with decree no. 434 of 21 December 2023. In a second phase, adaptation actions will be identified in the different sectors, through the definition of priorities, the identification of interested parties and sources of financing, as well as measures to remove obstacles to adaptation. This plan can have an important role on residual emissions by promoting, throughout the national territory, a rapid and widespread development of Nature Based Solutions (NbS), providing, among the various ecosystem services, also a greater sequestration capacity and CO<sub>2</sub> storage.

- **A Climate Law:** The Municipality of Bologna deems necessary and will promote the proposal for a national climate law. It is believed that this law could constitute a positive opportunity, as happened for other European countries (such as France, Germany and Spain) to define, sector by sector, the actions and tools, at a national level, to achieve climate neutrality, even by transferring the different forms of economic support for activities and actions that aggravate the climate crisis, towards activities and actions that favor mitigation and adaptation to climate change. This new national regulation could provide a significant external contribution to Italian cities currently committed to the 2030 climate neutrality objective.

Furthermore, a progressive increase is also expected, at a national and regional level, in biomethane and hydrogen produced as clean and renewable gases, which can be used above all for heating residential buildings. In fact, biomethane production projects starting from agricultural biomass, agro-industrial waste, the organic fraction of municipal solid waste, sludge purification, etc. are increasingly



widespread. On this, the city of Bologna presents an innovative project at its wastewater treatment plant, which will be able to produce more than 1 million m<sup>3</sup>/year of biomethane; of absolute importance is the replicability of the project, which can involve thousands of wastewater treatment plants in Italy, with a consequent significant contribution also to the decarbonisation of the city of Bologna.

The Municipality of Bologna then intends to pursue the objective of increasing the diffusion of the application of Nature Based Solutions (NbS), applying them to most of the city's transformations.

The strategy is to make every building, urban or infrastructural regeneration intervention transformative and with a positive balance of measurable climate performance (such as albedo, microclimatic well-being, RIE - Building Impact Reduction Index, project tree budget). This will of the Municipality finds explicit references in the General Urban Plan and in the Building Regulations, for example through the following territorial "rules":

- every felling of a tree for construction purposes must include two tree replantings;
- new permeable parking lots, grassed and with at least 1 tree for every 3 stalls;
- obligation of green roofs for new buildings with tourist-accommodation, production, management and commercial functions;
- increase in the private tree budget, providing that in building interventions new trees are planted at a minimum rate of 1 plant for every 100 m<sup>2</sup> of surface area of the lot not covered by buildings;
- the increase in ecological facilities, with particular reference to the multifunctional green strips for protection, mitigation and setting of the industrial/production areas and along the main infrastructures.

These prescriptions and rules will produce during time an increase in natural performances of the urban environment, with clear benefits in terms of CO<sub>2</sub> storage capacity.

Bologna then aims to build a food policy consistent with the Neutrality objectives for 2030, in particular by working on the distribution of local agri-food products through a new market regulation that goes in the direction of stabilizing farmers' markets, to facilitate access to quality food and promote the culture of non-waste. The Municipality also wants to strengthen the synergy between public administration and private individuals with the creation of urban fields and gardens through the assignment of publicly owned agricultural land located around the city for organic and sustainable urban agriculture projects.

Finally, the main strategy for reducing the city's emissions relating to residual emissions (20% of the baseline) is represented by the **installation of photovoltaic energy plants**.

It must be considered that the Municipality of Bologna is the capital municipality of the Metropolitan City of Bologna and in Italian law the metropolitan Mayor is by right the Mayor of the capital municipality. In the metropolitan dimension it must be considered that the Municipality of Bologna includes 40% of the metropolitan population (around 400,000 residents out of 1 million) which reaches over half (exceeding 500,000) if workers, students and city users are also considered, but has an extension equal to only 3.8% of the metropolitan territory (141 km<sup>2</sup> out of 3,703 km<sup>2</sup>).

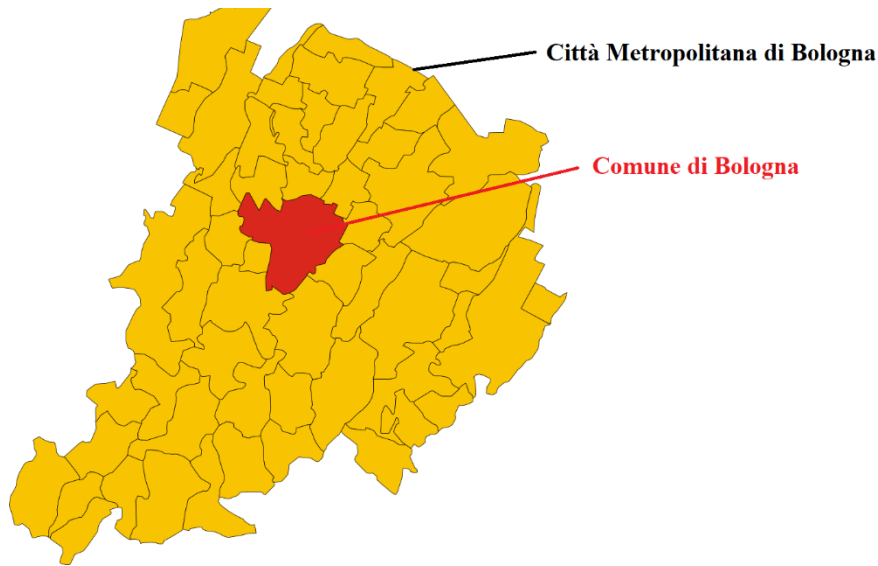


Figure 20: Municipality and Metropolitan City of Bologna

This means that the majority of metropolitan energy consumption and emissions are produced within the municipal perimeter, but also that in the metropolitan area we find the greatest opportunities both for the production of energy from renewable sources (starting with agrivoltaics) and for the creation of forestation interventions and expansion of green infrastructures, which can therefore significantly contribute to the reduction and compensation of emissions also in the Municipality of Bologna. It is considered that, by scaling the energy consumption of residents in the Municipality of Bologna over the entire metropolitan population, the diffusion of photovoltaic and agrivoltaic systems on a surface area between 1.5 and 3% of the metropolitan territory would be able to guarantee the complete metropolitan energy autonomy through renewable sources. The Bologna Plan already involves partners who will be able to implement these strategies, for example energy players (Hera and Illumia) and trade associations of specific economic sectors (Confindustria, CNA and Confagricoltura).

The concrete possibility that the Municipality of Bologna can be an innovation laboratory for neutrality with actions that can be easily replicated in the metropolitan dimension will also be the main strategy through which to address and neutralize residual emissions.

Therefore, with a view to achieving complete climate neutrality and on the basis of the hypotheses reported above, the Administration's strategy is outlined in the macro actions defined below, relating to the production of electricity from photovoltaic solar sources. The objective is in fact to eliminate residual emissions, previously quantified at 314,563 equivalent tonnes of CO<sub>2</sub> (equal to 20% of the baseline value), through the installation of a total power of 900 MWp by 2030. In particular, the strategy envisages that this need can be covered through the installation of:

- in the area of the Municipality of Bologna, at least 400 MWp of energy production plants from renewable sources (through photovoltaic and agrivoltaic systems);
- in the metropolitan area of Bologna, additional photovoltaic power is expected to meet the energy needs of the municipal perimeter. The basic hypothesis, for the reasons set out above, is in fact that in the metropolitan area we will achieve at least the installation of 1.2 GWp of new energy production plants from renewable sources (through photovoltaic and agrivoltaic systems). Of these, it is estimated that 40% (and therefore approximately 480 MWp) can be used for the energy needs of the City, in consideration of the fact that 40% of the metropolitan population resides within the municipal territory, even though it represents only the 3.8% of the metropolitan area.



The cost relating to strategies for reducing residual emissions will be shown in module B of the Investment Plan.

### Overall tables and graphs of emissions reduction

The overall results of the action portfolio for the reduction of GhG emissions are represented in a table below.

<b>Emission Gap</b>	<b>Total tCO<sub>2</sub>eq/year</b>
Baseline emissions	<b>1,572,816.36</b>
Baseline emissions reduction target (80% of baseline)	<b>1,258,253.09</b>
Emissions reductions in existing strategies	<b>376,812.74</b>
Reduction of emissions from Action Plan	<b>881,440.34</b>
Residual emissions (20% of baseline) (managed with future strategies)	<b>314,563.27</b>
Final emission gap	<b>0</b>



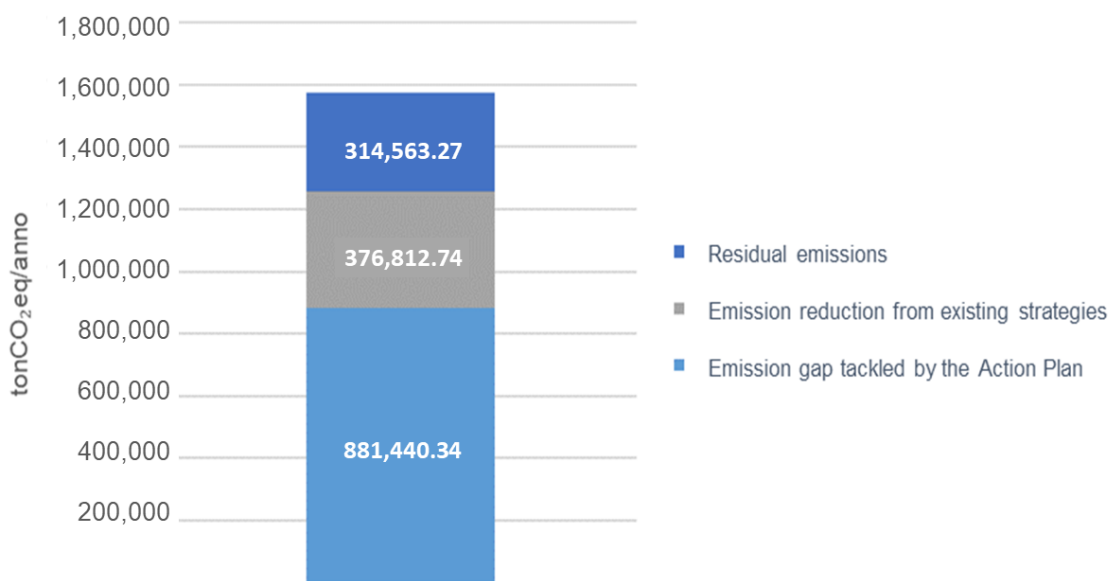


Figure 21: Overall values of emission reduction

The table below shows a focus on emissions reductions by sector within the CCC.

Emission reduction by sector in the CCC	
Sectors	tCO <sub>2</sub> eq/year
Buildings (Built environment and RES)	507,250.13
Transport	99,189.49
Waste and wastewater	403.03
IPPU	0.00
AFOLU	2,713.00
Transversal	20,234.07
Behavioral	251,650.62
<b>Total</b>	<b>881,440.34</b>



## 4.3 Module B-3 Indicators for Monitoring, Evaluation and Learning

The purpose of this chapter is to follow up on the analysis of the Impact Pathways, highlighting a set of metrics and indicators useful for monitoring and evaluating the actions implemented over the years.

The added value of this section is the possibility of monitoring actions for future years: the reference target values reported for the years 2025, 2027 and 2030 represent an estimate of what can be expected in terms of technological, infrastructural and awareness raising of the entire city ecosystem towards the issues of carbon neutrality.

As already explained in the section dedicated to barriers, the availability of quantitative data represents an important challenge for all public administrative entities in Italy that wish to monitor their work: the objective of this document and of the indicators themselves is precisely that of directly raising public administration awareness of the importance of collecting, analysing and continuously monitoring data relating to the actions implemented to ensure continuous improvement of the interventions and the overall benefits perceived. It is important that the awareness-raising process also affects all the stakeholders involved so that there is cooperation in data collection and synergy towards medium and long-term objectives. The Municipality of Bologna has created an open data sharing platform called *I numeri di Bologna*, which makes statistical data available to all citizens in various areas such as environment and territory, economy, health, work, healthcare, transport and education.

The following table reports, on the basis of the impact pathways exposed in Module B-1, the main indicators that the Administration will monitor with a view to achieving climate neutrality by 2030: based on the impact that the indicator aims to monitor, the targets that the city expects to achieve are here reported, based on ongoing projects and future actions being planned. These are estimated on the basis of ongoing investments, the growing sensitivity of citizens and stakeholders, and the technical and scientific improvements that will provide higher efficiency to interventions. The objective of this document and future editions is therefore to supervise the individual ongoing projects and in doing so to provide feedback on the macro objective at an impact level every two years.

Each indicator refers to multiple actions, which can be deduced from the impact pathway tables of Module B-1, based on the impacts highlighted here. For this reason, the Actions column has not been filled in (Not Applicable - NA), as it cannot be traced back to individual actions.

<b>B-3.1: Impact pathways and indicators</b>						
Outcomes/Impacts	Actions / projects (if applicable). NA - Not applicable)	Indicator identification number	Indicator name	Target		
				2025	2027	2030
Reduction of emissions in the Built Environment and RES sectors	All actions in the Buildings-built environment and RES sector of the CCC	#1	Greenhouse gas (GHG) emissions from stationary energy	46,600	450,000	496,615
Reduction of emissions from the transport sector	All the actions of the Transport sector of the CCC	#2	Greenhouse gas (GHG) emissions from transport	9,400	75,000	99,189
Reduction of emissions from the waste and wastewater sector	All the actions of the CCC Waste and	#3	Greenhouse gas (GHG) emissions from waste	11	302	414



	Wastewater sector					
Reduction of emissions from the IPPU sector	NA	#4	Greenhouse gas (GHG) emissions from the IPPU sector	0	0	0
Reduction of emissions from the AFOLU sector	All stocks in the AFOLU sector of the CCC	#5	Greenhouse gas (GHG) emissions from the AFOLU sector	2,400	2,600	2,713
Reduction of residual emissions	NA	#6	Residual emissions	18%	15%	0%
Increase in local energy production from renewable sources	NA	#7	Power (MW) of photovoltaic installed in the city	100	250	650
Increase in urban green spaces	NA	#8	Municipal tree budget	90,000	95,000	100,000
Improving the healthiness of the urban environment	NA	#9	Concentration of pollutants in the air: NO2	35	30	20 µg/m3
Change in consumption styles	NA	#10	Domestic water consumption per capita (l/day/inhabitant)	141	137	130
Modal split movements	All stocks in the transport sector	#11	%	-	-	Car: 22% TPM: 28% Feet 27% Bike: 18% Motorcycle: 4% Other: 1
Biciplan implementation	Biciplan	#12	% Biciplan strategic cycle network implemented	70% (61km)	-	100% (86km)
Per capita reduction in emissions	NA	#13	Net GHG emissions per capita			0
Total reduction of emissions	NA	#14	Total net GHG emissions			0

To support the definition of the indicators set out above, table B-3.2 reports some of the main types of data that underlie the indicators themselves and compose and/or describe them.

The selection criterion through which the details of the indicators are presented in the following tables is based on their relevance in monitoring the impacts pursued and on the availability of data in relation to the challenges that the city of Bologna has set itself to achieve climate neutrality to 2030: for example, the monitoring of public and private photovoltaic potential represents a fundamental indicator that



provides evidence of the city's ability to reduce its dependence on fossil fuels; in the same way, the monitoring of the tree budget reflects the sensitivity of the Administration in projects that involve the redevelopment of city areas with a view to greening and mitigating climate change.

<b>B-3.2: Indicator Metadata</b>	
Indicator Name	Photovoltaic power installed in the city
Indicator Unit	MW
Definition	Power from photovoltaic panels generated for public and private consumption
Calculation	Panel power per square meters installed
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Reduction of dependence on polluting fossil fuels
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Greater local energy autonomy
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Actions that contribute to the increase in local energy production from renewable sources
Data requirements	
Expected data source	GSE Energy Services Manager
Is the data source local or regional/national?	The data source is national
Expected availability	Annual
References	
Other indicator systems using this indicator	DUP (Documento Unico Programmazione) - the Municipality Programming Document

<b>B-3.2: Indicator Metadata</b>	
Indicator Name	Municipal tree budget
Indicator Unit	Number of municipal public trees in the city
Definition	Census and evaluation of the existing tree heritage
Calculation	Evaluation of the number of trees and shrubs without the cutting carried out
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	Improved air quality
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Increase in urban green spaces
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Green Footprint (Impronta Verde) project for the regeneration of urban spaces from a sustainable perspective
Data requirements	
Expected data source	Municipal tree budget (from Law 10/2013)
Is the data source local or regional/national?	The data source is municipal
Expected availability	The document is published every 5 years
References	
Other indicator systems using this indicator	Municipal tree budget



<b>B-3.2: Indicator Metadata</b>	
Indicator Name	NO2 index parameter (annual average)
Indicator Unit	µg/m3
Definition	Pollutant produced by the oxidation of nitrogen monoxide (NO) in the atmosphere
Calculation	Through a catalytic converter capable of reducing the NO2 present in the NO and highlighting the concentration of nitrogen oxides.
<b>Indicator Context</b>	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	-
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improvement of the healthiness of the urban environment
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	For all actions that contribute to improving air quality and reducing NO2 emissions
<b>Data requirements</b>	
Expected data source	Arpae - Regional network of meters in the Municipality of Bologna
Is the data source local or regional/national?	The data source is regional
Expected availability	Monitoring is carried out daily
<b>References</b>	
Other indicator systems using this indicator	Air quality report

<b>B-3.2: Indicator Metadata</b>	
Indicator Name	Domestic water consumption per capita
Indicator Unit	l/inhabitant/day
Definition	Domestic water consumption per capita
Calculation	Total domestic consumption/resident population/365
<b>Indicator Context</b>	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Reduction of water losses
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Greater diffusion of sustainable practices
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Dissemination of sustainable good practices for citizenship
<b>Data requirements</b>	
Expected data source	Municipality of Bologna and Atersir/Hera
Is the data source local or regional/national?	Municipal
Expected availability	Annual
<b>References</b>	
Other indicator systems using this indicator	DUP (Documento Unico Programmazione) - the Municipality Programming Document



## 5 Part C – Enabling Climate Neutrality by 2030

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

### 5.1 Module C-1 Governance Innovation Interventions

Referring to Modules A-2 and B-2, the organisational and governance interventions implemented by the Municipality of Bologna are presented below. These actions should not be underestimated in their effectiveness as they are the enabling framework to support the emissions reduction path that the city is undertaking. Given the time frame 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 well beyond the single action, also and above all with a view to changing the overall system to support the climate transition.

**The quantification of the effect of these actions is included, within Module B, in the set of behavioural/governance actions that contribute to the reduction of emissions.**

<b>C.1.1: Enabling organisational and Governance innovations</b>						
<b>Intervention name</b>	<b>Description</b>	<b>Responsible organisation/department/person</b>	<b>Stakeholders involved</b>	<b>Enabling impact</b>	<b>Co-benefits</b>	<b>Reference to barriers</b>
<b>Climate Transition Team</b> (refer to chapter 2.1 of the Action Plan for details)	A core team that manages the Mission. The team is coordinated by the Deputy Mayor in charge of the Mission, and composed of representatives of the Municipality, supported by two external parties (AESS and Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi).	Deputy mayor in charge of the Mission  Person in charge of strategic urban projects at the Municipality Chief Administrative Office	Municipality of Bologna  Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi  Agency for Energy and Sustainable Development (AESS)	The team manages the Mission and the development of the Climate City Contract, coordinating the key processes (internal and external to the Municipality) to achieve the objectives.	Improved dialogue and collaboration within the municipal administration  Greater cross-sector coordination  Greater effectiveness of local policies and local action for the climate transition	Barrier T2
<b>Building internal transversal governance for the</b>	Involvement of all sectors of the Municipality and the City Council in the Mission, through:	Climate Transition Team	Municipality of Bologna, representatives of all sectors and deputy	This intervention is aimed at overcoming the silos functioning of the local	Increased awareness and consensus towards the	Barrier T2, T4, T5



<p><b>climate transition</b></p>	<ul style="list-style-type: none"> <li>- Specific <b>Focus Groups</b> on the Mission with all municipal Departments and Sectors and with the City Council (December 2022 - May 2023);</li> <li>- <b>1:1 meetings</b> with the Sectors involved in raising actions and investments for the construction of the CCC (2022-2023);</li> <li>- <b>Strengthening awareness and internal skills within the Municipality</b> on the climate and energy transition through courses aimed at technical specialists and transversal actions also for less technical departments.</li> </ul>		<p>mayors of the city council</p> <p>Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi (support for the implementation)</p> <p>AESS (technical support)</p>	<p>authority, activating widespread awareness on the objectives of the Mission and transversal coordination for the construction, implementation and continuous monitoring and updating of the CCC.</p> <p>The Focus groups identified the obstacles and opportunities towards climate neutrality from the point of view of each municipal Department/Sector and contributed to the identification of synergistic and transversal actions and strategies. They also contributed, together with actions to strengthen skills, to increasing awareness of the Mission and laid the foundations for greater collaboration between Departments and municipal sectors.</p>	<p>energy transition and climate neutrality</p> <p>Greater effectiveness and efficiency of public policies</p>	
<p><b>External governance at local level</b></p>	<p>In order to open up the possibility of participating in the Bologna Missione Clima to all the city's stakeholders, thus creating a shared governance of the Mission in the municipal territory, the following have been activated:</p> <ul style="list-style-type: none"> <li>- <b>a launch event</b> of the Climate Mission (19 December 2022)</li> <li>- <b>numerous 1:1 meetings</b> with Mission partners and new potential local partners to collect and define actions and investments for the CCC;</li> <li>- <b>an envisioning event</b> of Bologna as a neutral city (5 June 2023);</li> </ul>	<p>Climate Transition Team</p>	<p>Municipality of Bologna</p> <p>Local stakeholders</p> <p>Citizenship</p>	<p>The action is fundamental for the engagement and coordination of local actors who can contribute to the Mission with specific actions and investments included in the CCC, or join the Mission with behavioural actions or innovation interventions in a broader sense.</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders</p> <p>Greater community participation in the Mission Increased awareness and</p>	<p>Barriers T4,5,6, B1,2,3,</p> <p>MT 1,2,3,4, W</p>



	- <b>a call to action</b> for the widest possible involvement of the territory (October 2023).				consensus towards the energy transition and climate neutrality	
<b>Multilevel governance</b>	<p>The city has started working groups at different levels, both with institutions and with public and private entities relevant to the climate transition.</p> <p>Fundamental in this sense is the network of the nine Italian cities of the Mission</p>	Climate Transition Team	<p>Municipality of Bologna</p> <p>Metropolitan City of Bologna</p> <p>Emilia Romagna Region</p> <p>National Government</p> <p>The other eight Italian cities of the Mission (Bergamo, Florence, Milan, Padua, Parma, Prato, Rome, Turin)</p> <p>Relevant subjects and institutions at different levels (e.g. energy infrastructure managers, ANCI-ER, ARPAE, etc.) - see paragraph C1.2</p>	The construction of multilevel governance is fundamental to enable and support the transition at the local level and overcome barriers arising from supra-local levels	<p>Improved dialogue and collaboration between institutions</p> <p>Increased awareness and consensus towards the energy transition and climate neutrality</p> <p>Greater coordination between national, regional and local policies</p>	Barrier T1, T3, T4, T7, B1, B2
<b>The Let'sGOv pilot project</b>	The pilot project financed by Net Zero Cities (June 2023 - May 2025), sees the nine Italian cities of the Mission, coordinated by the Municipality of Bologna and supported by three technical-scientific partners, working together to strengthen internal and external governance for neutrality climate. The project addresses common barriers identified by cities around stakeholder engagement, data and innovative financing.	<p>Responsible for Strategic Urban Projects - Chief Administrative Office</p> <p>Europe and International Sector,</p> <p>Ecologic Transition Sector and</p>	<p>Project partners:</p> <p>Municipality of Bologna</p> <p>The other eight Italian cities of the Mission (Bergamo, Florence, Milan, Padua, Parma, Prato, Rome, Turin)</p>	Fundamental for strengthening internal (training and exchange of good practices) and external (multi-level governance) governance actions for climate neutrality	<p>Increased awareness and consensus towards the energy transition and climate neutrality</p> <p>Greater effectiveness and efficiency of public policies</p> <p>Improved dialogue and collaboration between institutions, citizens and</p>	Barrier T4, T5, T7





		Climate Office	University of Bologna		stakeholders	
			AESS		Greater community participation in the Mission	
			Energy Center (Polytechnic University of Turin)		Increased awareness and consensus towards the energy transition and climate neutrality	
<b>The Citizens' Assembly for Climate</b>	The Citizen Assembly is an institute of deliberative participatory democracy, formally introduced in the Statute of the Municipality of Bologna in 2021. The first assembly was called by the City Council in December 2022 on the climate theme.	Responsible for Strategic Urban Projects - Chief Administrative Office	Municipality of Bologna Members of the Assembly Assembly governance committees	Fundamental tool for involving citizens for the formulation of proposals to the City Council merged into the Action Plan.	Greater community participation in the Mission Increased awareness and consensus towards the energy transition and climate neutrality	Barrier T6, MT1, MT4
		Ecological Transition Sector and Climate Office	Experts selected for the training phase Stakeholders who joined the expression of interest to interact with the Assembly		Improved dialogue and collaboration between institutions, citizens and stakeholders	
		Fondazione Innovazione Urbana-Rusconi-Villa Ghigi				

<b>C.1.1: Regulatory innovations</b>						
<b>Intervention name</b>	<b>Description</b>	<b>Responsible organization/department/person</b>	<b>Stakeholders involved</b>	<b>Enabling impact</b>	<b>Co-benefits</b>	<b>Reference to barriers</b>
National Climate Law	The Municipality of Bologna believes it is necessary to promote a national climate law as it has happened in other European countries	National Government	Municipality of Bologna Network of Italian Mission cities Other institutions	This new national law could provide a significant external contribution to Italian cities currently committed to the 2030 climate neutrality objective	Greater local energy autonomy Fight against energy poverty	Barrier T1



Consolidated law on energy	The Municipality of Bologna deems it necessary to promote a Consolidated Law on energy	National Government		This new national law could provide a significant external contribution to Italian cities currently committed to the 2030 climate neutrality objective	Development of employment opportunities and a local market for renewable sources  Greater attractiveness and competitiveness of the territory	Barrier T1
National decree for the definition of areas suitable for the installation of energy production systems from renewable sources.	Compared to the existing Decree, the Municipality of Bologna believes that it is necessary to promote further regulatory and procedural simplifications, a greater possibility for innovative agricultural sources; strengthen incentives for designated renewable sources  especially to the spread of small systems, eliminating those referable to fossil sources.	National government	Municipality of Bologna  Network of Italian Mission cities  Other institutions	Expansion of renewable plants at national and local level, starting with photovoltaic ones, further simplification of authorizations and the review of the forms of public economic support for the various sources of renewable energy	Increase in value of properties Increase and stimulus of the circular economy  Greater access to clean and affordable energy	Barrier T1
Integrated National Energy and Climate Plan (INECP)	The Municipality has activated discussions with the national Government for the updating of the INECP together with the network of the nine Italian cities of the Mission, also proposing a review of the different forms of public economic support on the subject of sustainable energy	National government	Municipality of Bologna  Network of Italian Mission cities	The current phase of updating the Plan provides the opportunity to create a necessary national support framework to accelerate the energy and climate transition of cities.		Barrier T1
National Plan for Adaptation to Climate Change (NPACC)	The Municipality, together with the Emilia-Romagna Region, presented observations on the Plan for various environmental matrices	National government	Municipality of Bologna  Emilia Romagna region  Other bodies and institutions in the national territory	This plan can have an important role on emissions throughout the national territory also by promoting a rapid and widespread development of Nature Based Solutions (NbS) throughout the national territory, providing, among the various ecosystem services, also greater sequestration	Increase in urban green spaces  Increase in biodiversity  Greater ecosystem services  Increased urban drainage Increased resilience of the city system	Barrier T1



				and storage capacity of CO <sub>2</sub>		
Review of the General Urban Plan (PUG) and Building Regulations (RE)	The Municipality of Bologna has started the process of revising its General Plan and the Building Regulations, to align them with the current mandate lines, including the objectives of the Climate Mission.	Department of Urban Planning, Housing, Environment and Heritage	-	Among the objectives of the review are also the further expansion of the local photovoltaic field, the promotion and incentive of building and urban planning interventions for climate neutrality, the strengthening of the energy infrastructures necessary for local production and the sharing of energy from renewable sources, the refinement of climate and environmental provisions	Greater local energy autonomy Fight against energy poverty Development of employment opportunities and a local market for renewable sources Greater attractiveness and competitiveness of the territory Increase in value of properties Increase and stimulus of the circular economy Greater access to clean and affordable energy	Barrier T1, B1
Regional legislation in the field of location criteria for photovoltaic systems	The Municipality of Bologna participated with specific proposals in the work which on 23 May 2023 led to the approval of the Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 " <i>Specification of location criteria to guarantee maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and environmental value of the territory. (Council Resolution no. 214 of 13 February 2023).</i>	Emilia Romagna region	Municipality of Bologna (TEUC Sector) and other bodies in the regional territory	The Resolution has the objective of promoting the maximum development of photovoltaics in the regional territory	Greater access to clean and affordable energy Greater local energy autonomy Fight against energy poverty Development of employment opportunities and a local market for renewable source	Barrier T1, B1



### C-1.2: Description of organisational and governance interventions

The organisation and governance interventions relating to the Mission are coordinated by the Climate Transition Team, the management and control structure of the Climate Mission and the CCC, described in chapter 2.1 of the Action Plan. The composition of the Team guarantees on the one hand the possibility of engaging all the Departments and municipal Sectors for an effective internal involvement and transversal governance action, and on the other of activating and supporting an effective external governance action for the Mission, also thanks to the support of two bodies that have been operating for years in civic participation processes in the area (Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi) and in technical-scientific support for the sustainable energy transition (AESS).

#### **Construction of internal transversal governance**

The Municipality acted as an enabler for building the engagement process necessary for the Mission and for the construction of the CCC, as widespread and effective as possible within the municipal body. The Municipality of Bologna is in fact an organisation that has approximately 4300 employees (4299 as of 31/12/2022), made up of a complex and structured organisational chart, divided by skills and sectoral functions. This sectorality historically characterises all Italian public bodies and reflects the high complexity and specialisation of policies from the national to the local level.

The transversality of the climate challenge and the need to act in a systemic manner for effective climate action require the Administration to put in place processes to overcome this silos structure, which often limits interaction, the flow of information and collaboration between different Departments, Sectors and technical functions, as well as between the relevant representatives of the Public Administration and the related political directions. To this end, the Climate Transition Team carried out:

- **9 specific Focus Groups** on the Mission which involved high levels and representatives of all the municipal Departments and Sectors (December 2022 - March 2023) and **1 Focus Group with the City Deputy Mayors Council** (16 May 2023). The process had the following objectives:

- raise awareness and increase knowledge over the Mission;
- update the framework of commitments identified during the application phase to the Mission for the construction of the CCC;
- discuss expectations, opportunities and perceived barriers to the Mission goals;
- identify further synergistic strategies that can be developed transversally to overcome existing barriers.

The Focus Groups were therefore an opportunity for alignment and analysis between the municipal sectors to establish the foundations and fundamental connections within the Municipality of Bologna to overcome the cognitive, organisational and technical-administrative barriers that can hinder or slow down the path towards climate neutrality. The starting point was a questionnaire updating the actions identified during the application phase for the Mission. From the focus groups with the Sectors, a general interest and willingness to contribute to the Mission emerged, but also a limited ability to frame the climate neutrality objectives, especially among the Sectors that deal with topics not directly linked to those touched by the CCC such as energy, environment, buildings and infrastructure, mobility. This reveals a need to increase sensitivity and knowledge of the climate transition transversally within the institution, as well as to establish stronger links between the different Sectors for even more coordinated and synergistic action. However, points of contact and areas of work with all sectors have been identified, including potential "soft" interventions, i.e. measurement, communication, awareness-raising and education.

Numerous opportunities and ideas therefore emerge from this process to strengthen and further structure internal governance action for climate neutrality; in particular, the following opportunities related to the Mission emerged:



- work in a more integrated and transversal way (e.g. on data, communication, tenders and purchases);
- experiment with new forms of collaboration with the private sector;
- explore innovative financial instruments;
- strengthen the activities already underway to raise awareness and engage citizens by acting in a more widespread way through schools, museums, neighbourhood houses, cultural, museum and sporting events;
- broaden the Mission to the metropolitan area (e.g. mobility, production of renewables, compensation).

Finally, through the Focus Group with the City Council, synergies were identified between the policies of the various departments and the Bologna Missione Clima. Various municipal policies that have an impact on health, work and social inclusion will also be able to make a contribution to the Mission. Furthermore, the desire to organise further meetings aimed at examining the points of intersection between policies and their impact on the climate and other transversal themes emerged.

- **1:1 meetings with the municipal sectors (2022-2023) involved in interventions with an effect on the reduction of greenhouse gas emissions**, in order to explore these actions and the related investments included in the Action Plan and the Investment Plan.

- **Strengthening awareness and internal skills** within the institution on the climate and energy transition through courses aimed at technical specialists and transversal actions also for less technical departments. In particular, we mention:

- The School of Bioclimatic Design for Adaptation and Mitigation (SBAM): a project by ANCI Emilia-Romagna developed in collaboration with AESS Agency for Sustainable Development for the partner Municipalities – Bologna, Carpi, Cesena, Forlì, Imola, Modena, Parma, Piacenza, Ravenna, Reggio-Emilia and Rimini - and, in its online version, available to all municipalities and professionals in the Region. The Municipality of Bologna financed the course and saw the participation of several of its employees in both editions (2022-2023).<sup>8</sup>
- The EU funded Let'sGOv (Net Zero Cities) pilot project, strongly wanted by the Municipality of Bologna, also includes actions to strengthen knowledge and transversal awareness on the climate transition within the local administration body and exchange successful practices in terms of innovative governance between the Italian cities of the Mission and the Net Zero Cities network.

- **Strengthening the coordination capacity of climate transition processes:** the Ecological Transition and Climate Office Sector (TEUC) acquired a new highly specialised resource in 2022 dedicated full-time to supporting the Mission and the City Assembly for climate; furthermore, the support provided by AESS and the Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi constitutes an important element of strengthening the Climate Transition Team, as described in Chap.2.

### External governance at local level

In order to create shared governance for the Mission on the municipal territory, the Climate Transition Team has designed a path of involvement and direct dialogue with stakeholders and parallel to the processes of internal, multilevel governance and citizen involvement. The main steps of this process were:

- **The launch of the Climate Mission:** with a conference at the Biagi Auditorium in Salaborsa Library on 19 December 2022, the Municipality officially launched the path towards the drafting of the Climate City Contract. The event was opened by the institutional representatives of the Municipality, the Emilia-Romagna Region, the Minister of University

<sup>8</sup> <https://www.anci.emilia-romagna.it/sbam-materiali-didattici-2-edizione/>



and Research and the Commissioner "Innovation, Research, Culture, Education and Youth" of the European Commission. On this occasion the Municipality launched the call to all the city's actors to join the Climate Mission and outlined the main steps for the drafting and presentation of the CCC, as well as leaving space for two panels: in the first one some stakeholders who joined the Mission as partners discussed the opportunities and commitments put in place for the Mission, while the second one saw some interventions by local and national personalities underlining the systemic aspect and the various dimensions that the challenge of climate neutrality brings with it. The event saw the participation of around a hundred people in person, and was broadcasted live on the YouTube channel of the Municipality of Bologna<sup>9</sup>.

- **1:1 meetings with the Mission partners:** The engagement and dialogue with the various public and private entities that proposed to participate with actions and investments in the development of the CCC was carried out with direct and targeted interaction through numerous bilateral meetings, which took place starting from the submission of the application and throughout the development process of the CCC and conducted by the Deputy Mayor with responsibility for the Mission, by the Ecological Transition Sector and Climate Office of the Municipality and AESS. The result of this continuous work has flowed into the portfolio of actions of the Action Plan, into the strategies to fill the residual emissions gap, into the Investment Plan, as well as into the commitments undertaken in the Commitment Document.
- **Envisioning event “Bologna Missione Clima. Health, rights and economy facing the test of the climate crisis ”**, organised by the Municipality of Bologna in collaboration with the Foundation for Urban Innovation-Rusconi-Villa Ghigi as part of Bologna Missione Clima (5 June 2023): the event included an invitation-only session, where representatives of the third sector, the local economy and institutions worked to identify together the transversal co-benefits between the Mission and the issues of health, work and social inclusion, as well as a session open to public with the intervention of experts and journalists. The event was attended by 85 representatives of the Third Sector, the Local Economy, the Institutions and the world of Research. The event is connected to the internal municipal process of the Focus Group with the City Council in which the points of connection between the mandate policies and the Mission were defined. The objective of the day was to identify, together with the city's stakeholders, the impacts and co-benefits that climate neutrality can generate, for example in terms of health, well-being of citizens, combating social exclusion, work and more generally on attractiveness of the city. The participants worked in three working groups, divided in Third Sector, Local Economy and Institutions, with the transversal presence of researchers. In general, a willingness and desire to contribute to achieving the Mission's objective and a shared vision of the Mission as a path and a process emerged. Regarding co-benefits, the Mission was seen as an opportunity to work to overcome shared obstacles (e.g. bureaucracy, traditional vertical silos governance, etc.) and also to put in the forefront people's lives and their rights. In particular, the following opportunities arising from the Bologna Missione Clima process emerged:
  - the improvement of air quality and the strengthening of green areas as aspects that benefit from the Mission and at the same time have a considerable impact on the health of citizens;
  - the acceleration of energy efficiency in buildings, avoiding the social exclusion of the most vulnerable;
  - the opportunity to rethink the role of the institutions;
  - strengthening workers' green skills;
  - the integration into the school system of environmental education that has a greater effect on the care of the territory, nature and the reduction of emissions.
  - At the same time, the event allowed us to identify the major challenges that the Mission poses to the city, including:
    - the need to address a change in culture and habits;

<sup>9</sup> <https://www.youtube.com/watch?v=bwnElfg2png>



- communicate climate neutrality and the ecological transition in an accessible and inclusive way;
  - the need to democratise energy and develop a polycentric city that can be more locally self-managed;
  - a still insufficient feeling of co-responsibility to activate the entire city system;
  - a difficult bureaucracy that hinders the energy efficiency of buildings and social inclusion in the actions necessary to achieve climate neutrality.
- **A call to action**, launched on 27 October 2023 through the event "Bologna Missione Clima: a call to action". The event was attended by 130 participants from 83 organisations; to the Call to Action, published on the site <https://www.bolognamissioneclima.it/> from 27 October to 11 December 2023, over 80 organisations responded and 70 were admitted as supporters of the Bologna Missione Clima.  
The call was open to all public or private organisations or informal groups of citizens who wanted to join the Bologna Missione Clima through actions capable of contributing to the achievement of climate neutrality by 2030 in Bologna. Both subjects based within the boundaries of the Municipality of Bologna and subjects who, despite having their headquarters in a different municipality, are committed to carrying out actions with a direct or indirect impact on the reduction of climate-altering gas emissions in the city could join. The list of participating entities and actions is included in Annex 4.

**The following picture summarises the Local Governance Action for Bologna Missione Clima and therefore the participation ecosystem activated at a local level, both internal and external to the municipal administration. The labels show the main engagement tools described above.**

The infographic shows the model of Collaborative governance used to facilitate the city's climate transition journey:

- At the centre the Climate Transition Team for the coordination of the Mission;
- the transversal involvement of all municipal sectors through focus groups;
- the involvement of the city's stakeholders, through events and calls to action, resulted in the adhesion of the signatory partners with actions to reduce emissions and related investments and of those adhering to the call to action, with predominantly behavioral actions;
- the involvement of citizens through the Citizens' Climate Assembly;
- furthermore, other fundamental tools for supporting citizens are reported, activated or strengthened within the Mission, such as the Energy Help Desk and the Energy and Environment Showroom, which will be described in Module C-2.

The picture of the participatory ecosystem is completed by the following paragraph and related infographic on multilevel governance (Fig.23).

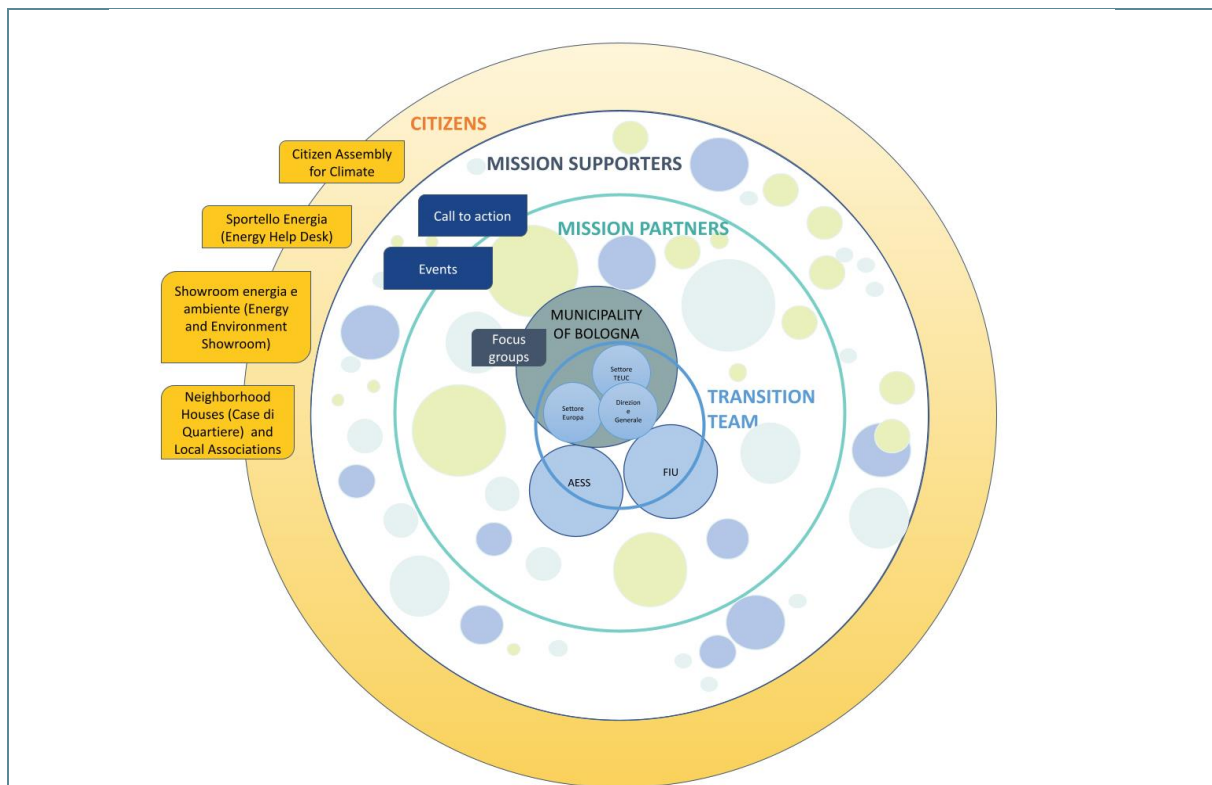


Figure 22: Local governance for Bologna Missione Clima

### Multilevel governance

The city has started dialogue and cooperation at different levels:

#### At European level:

Bologna has a long experience of presence in the international arena, taking part in important international/EU/city networks since the 1990s. Below is a list of the main partnerships:

- member of Eurocities since the foundation of the network and **Vice-Chair of the Eurocities Environment Forum** starting from June 2023;
- founding member of ICLEI in 1993;
- signatory of the Aalborg Charter (1996) and participant in the Aalborg commitments campaign (2006);
- one of the founding municipalities in 2000 of Local Agenda 21, a national network;
- signatory of the Covenant of Mayors since 2008;
- member of the POLIS network;
- Urban-LEDS Ph I Eu Resource City (low emissions strategies).
- Co-coordinator of the Urban Agenda partnership on Sustainable Use of Land and NBS.

The Municipality of Bologna is also in constant dialogue with the **Net Zero Cities platform**, which supports the European cities of the Mission in the development of the Climate City Contract; the annual meeting organised by NZC of the 112 Mission cities and the exchange throughout the year also through the online platform and dedicated City advisors, in addition to representing an accelerator for the exchange of best practices in support of the Mission, is also a way to gather needs, expectations and proposals from the cities of the Mission and consequently to strengthen the





dialogue in a synergistic way between the cities and the European Commission. Furthermore, through participation in the Mission Pilot program with the Let'sGOv project, Bologna actively participates in the exchange of best practices with other European and Italian pilot cities, in particular through the Net Zero Cities Twinning and Sensemaking program and through the Let'sGOv Observatory of follower cities envisaged by the project and coordinated by the Municipality of Bologna and which involves approximately 30 other Italian cities.

The Municipality of Bologna also participates in EU research and innovation projects labelled Horizon "Mission", strengthening networks with other European cities and contributing to innovation in Europe (e.g. Reallocate and Spine projects, for details see Module C2). An exchange is also active with other Mission cities such as Budapest, Stockholm, Antwerp, a strong dialogue also born thanks to joint participation in the Horizon FastTrack project, which ended in June 2023. Important exchanges also took place with the cities of Eindhoven, Leuven and Turku, in scope of the Horizon CITIES 4.0 project, of which the Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi is a partner, and which involved technicians from the Municipality of Bologna in dialogue with representatives of other cities on the themes of the Mission.

#### At the national level:

- **the 9 Italian cities** that were chosen by the European Commission to achieve climate neutrality by 2030 (Bergamo, Bologna, Rome, Turin, Prato, Milan, Padua, Parma and Florence) signed a **memorandum of understanding with the former Ministry of Sustainable Infrastructure and Mobility** (now MIT) for the pursuit of the objectives of the European Union Mission "Climate-neutral & smart cities 2030". The agreement has the purposes of:
  - propose possible solutions, including regulatory ones, to overcome potential design or implementation critical issues;
  - promote cooperation for the development of specific projects for the success of the Mission;
  - identify any additional resources intended to finance investments necessary to pursue the objectives of the Mission;
  - collect and share good practices, particularly important activities and projects developed and implemented by the 9 cities;
  - collaborate on further projects to be implemented in the territories of the 9 cities within the same objectives of the Mission and in the areas of competence of the Ministry.

The Municipality of Bologna coordinates this national network, in particular through the Deputy Mayor with responsibility for the climate mission, appointed Secretary of the Technical Working Group and Mission Manager.

- The Municipality has also activated various dialogues with the **national government, which currently focus on the drafting and updating of specific plans**, such as the National Plan for Adaptation to Climate Change (PNACC) and, together with the network of nine Italian Mission cities, the Integrated National Energy and Climate Plan (INECP), also proposing a review of the different forms of public economic support regarding sustainable energy.
- Furthermore, the Municipality is the leader of the **pilot project "Let'sGOv - GOverning the Transition through Pilot Actions"**, financed as a pilot project by the EU through the Net Zero Cities pilot programme, and in which all the 9 Italian Mission cities participate, which also has among its objectives that of strengthening multilevel governance necessary to support the transition process, in particular by acting on three challenges common to the Italian cities of the network: access to energy data, the involvement of stakeholders at all levels and citizens and the exploration of innovative financing tools (greater details in the next paragraph dedicated to Let'sGOv).
- Furthermore, discussions have been initiated between the **Municipality and the energy network managers**, including e-distribuzione and Terna, in order to address the issue of the adaptation of the infrastructure necessary for the energy transition. However, there is an urgent need to activate a working group with energy infrastructure managers also at regional



and national level, as the strengthening of infrastructure is essential for the purposes of the energy transition towards renewable sources and energy sharing for all cities and the Italian territories.

**At the regional level:**

- **The Municipality of Bologna is actively engaged in dialogue and discussion with the Emilia Romagna Region.** In fact, specific discussions on the Climate Mission were initiated with representatives of the Emilia Romagna Region, also in coordination with the Municipality of Parma participating in the Mission, which led to Resolution 102 of 01/22/2024 "*Approval of activities and initiatives to support the implementation of the 'Climate Neutral Cities by 2030' project of Parma and Bologna as well as of the measures aimed at disseminating and promoting the ecological transition and carbon neutrality throughout the regional territory*". With the resolution the Region defines the need to start an institutional collaboration relationship within the Mission aimed at developing initiatives for each of the following types of intervention:

a) financial: identify any dedicated and additional resources intended to finance investments necessary for the pursuit of the Mission's objectives;

b) regulatory: identify any solutions, including regulatory ones, to overcome possible design or implementation critical issues that may prevent or hinder the pursuit of the Mission in the areas of regional competence;

c) project-based: collaborate on further projects to be implemented in the regional territory within the same objectives of the Mission with the aim of creating a knowledge base also useful to other Municipalities, public administrations or public bodies to proceed more quickly and efficiently in the objectives of the Mission and the carbon neutrality of the region as envisaged by the Job and Climate Pact;

In particular, the resolution commits the regional Administration to the implementation of the following activities, which are particularly relevant for overcoming the barriers identified in Module A-3:

- Adaptation of regional regulations for the identification of suitable areas for the installation of renewable energy source systems for photovoltaic and agrivoltaic in line with the national regulatory framework;
- definition of guidelines at regional level for homogeneous accounting for the calculation/estimation of the CO<sub>2</sub> stored by trees (absorptions), for the estimate of gaseous pollutants and dust retention based on the tree species used;
- sharing of the mapping available for the definition of the installation potential of photovoltaic systems on built surfaces and on the ground, as well as the potential for energy generation from other renewable sources in order to facilitate the identification on an urban and municipal scale of the surfaces and areas potentially available for the aforementioned systems, and to evaluate the best tools for carrying out the interventions;
- discussion, through institutional channels, with energy infrastructure managers aimed at promoting an infrastructural transition suitable for distributing and sharing the energy produced efficiently and supporting the development of renewable energy plants;
- preparation of adequate digital tools to guarantee Municipalities access to an open flow of data, which is currently available to the regional administration, in order to share the wealth of information useful for defining policies on the energy transition;
- promotion, also through the implementation measures of the regional programming of the European structural funds, of actions aimed at the diffusion of soft and intelligent mobility, with the aim of reducing private vehicle traffic and polluting and climate-altering emissions, of system actions to support local authorities on energy transition issues; actions aimed at supporting investments in renewable energy systems serving forms of sharing the energy produced;



- definition of guidelines at regional level for the homogeneous accounting for the calculation/estimation of GHG emissions for the main mitigation actions implemented by the administrations;
  - promote the regional territorial Alliance for carbon neutrality with all the municipalities of the regional territory, in order to expand the number of administrations that adhere to the carbon neutrality objective, through the experience and tools used by the Municipality of Parma and Bologna within the Mission;
  - as part of the initiative financed by the ERDF Digital twin for air quality, combating and mitigating climate change and decarbonisation, cooperate with the cities of Parma and Bologna, with the aim of sharing analyses and studies, platforms and data which are useful in allowing territories to implement technological solutions that analyse data and build simulation systems (what if analysis) useful for achieving the 2030 objectives.
- The **Municipality** is also a signatory of the **Pact for Work and Climate**, signed in December 2020 by the Emilia-Romagna Region with all the social partners, adhering to the objectives set by it and participating in its periodic updating and monitoring. The Pact is a shared project signed by the Region together with local authorities, trade unions, businesses, schools, universities, environmental associations, third sector and voluntary sector, professions, Chambers of Commerce and banks for the relaunch and development of Emilia-Romagna based on environmental, economic and social sustainability. The main objectives are:
    - complete decarbonisation by 2050,
    - 100% renewable energy by 2035,
    - 3% of the regional GDP in research,
    - NEET (young people who do not study and work) under 10%.According to the data of the integrated reporting of the main regional strategic documents, which since 2022 monitors in addition to the Pact also the Regional Economy and Finance Document (DEFR) and the Regional Strategy Agenda 2030 for sustainable development, in 2021 the Pact for Work and Climate generated 341 actions, with a financial impact of 2,729.1 million euros programmed, 2,597.7 million euros allocated and 1,901.06 million euros committed. From the data it emerges that the choices signed within the Pact, and the method of sharing and comparison that distinguish it, have guided the entire planning of the Region's activities.
- **Lastly, the Municipality of Bologna participates in the regulatory review processes activated by the Emilia-Romagna Region**; an example is the contribution given to the work that led to the approval of the Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 " *Specification of location criteria to guarantee maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and environmental value of the territory. (Council Resolution no. 214 of 13 February 2023)*", which contributes to promoting the maximum development of photovoltaics in the area.
- Important collaborations have been initiated **with ANCI (National Association of Italian Municipalities) Emilia-Romagna**, of which the Municipality is a member, especially in terms of dissemination and training. The most relevant examples within the Mission are:
    - SBAM! Bioclimatic design school for Adaptation and Mitigation: developed in collaboration with AESS Agency for Sustainable Development for the partner Municipalities and, in its online version, available to all Municipalities and professionals in the Region. The Municipality of Bologna financed the course and saw the participation of several of its employees in both editions (2022-2023). The course illustrates 'nature based' strategies and pilot actions to improve the microclimate, quality and social function of urban spaces, rethinking the use of greenery, the management of rainwater, the use of permeable materials and the integration of infrastructure for soft mobility. SBAM also aims to contribute to the creation of an Emilia-Romagna network of competent technicians and officials capable of implementing regeneration projects of public spaces to combat climate change. The course can be used free of charge in online mode with five lessons (live or deferred) and is intended for technicians, officials or consultants in the public works, green management, environment, urban planning, energy and mobility sectors of all the Municipalities and Unions of the Emilia Romagna.



Only selected staff from SBAM partner municipalities and beneficiaries of the experimental program of interventions for adaptation to climate change in urban areas of the Ministry of Ecological Transition, including the Municipality, participate in the in-person lessons, which include additional workshops and study visits.

- Technical seminar 'Strategies for the electrification of heat consumption in existing buildings', first appointment of the series of in-person seminars 'Energies in the Municipality Beyond models: energy transition here and now' organized by the Emilia-Romagna Region and ANCI Emilia-Romagna in collaboration with Clust-ER Greentech and Clust-ER Build and with the Municipalities of Bologna, Parma and Cesena. The Seminar took place in Bologna on 11 October 2023, saw the participation of numerous technicians belonging to different professional orders and provided practical and operational tools to municipal technicians, sector professionals and condominium administrators to evaluate the options available for efficiency energy of buildings<sup>10</sup>.
- **With the Regional Agency for Prevention, Environment and Energy of Emilia-Romagna - ARPAE**, the Municipality has activated a dialogue on the topic of data since many years. In particular, on climate issues, it interfaces with the ARPAE IdroMeteoClima Service, and in particular with the Climate Observatory. The Observatory has in fact contributed to the drafting of the first Adaptation Plan of the Municipality (BlueAP 2015), to the SECAP (2021) and to the cognitive framework of the General Urban Plan of the Municipality, with the elaboration of sheet 39 - Climate, climate scenarios (2021). The representatives of the Arpae-Simc Climate Observatory were also invited to participate in the City Assembly for Climate in 2023, with a specific intervention on the "Climate profile of Bologna: current and future projections". Finally, the Municipality's Statistics Office actively collaborates with the IdroMeteoClima Service for the periodic sharing of data relating to climate observations, which are published on the portal managed by the Municipality and the Metropolitan City "I numeri di Bologna Metropolitana", Data section (Environment - Climatology).

The following figure graphically summarises the multilevel governance action activated within Bologna Missione Clima.

<sup>10</sup> <https://www.anci.emilia-romagna.it/eventi/seminario-tecnico-strategie-di-elettificazione-dei-consumi-termici-negli-edifici-esistenti/>

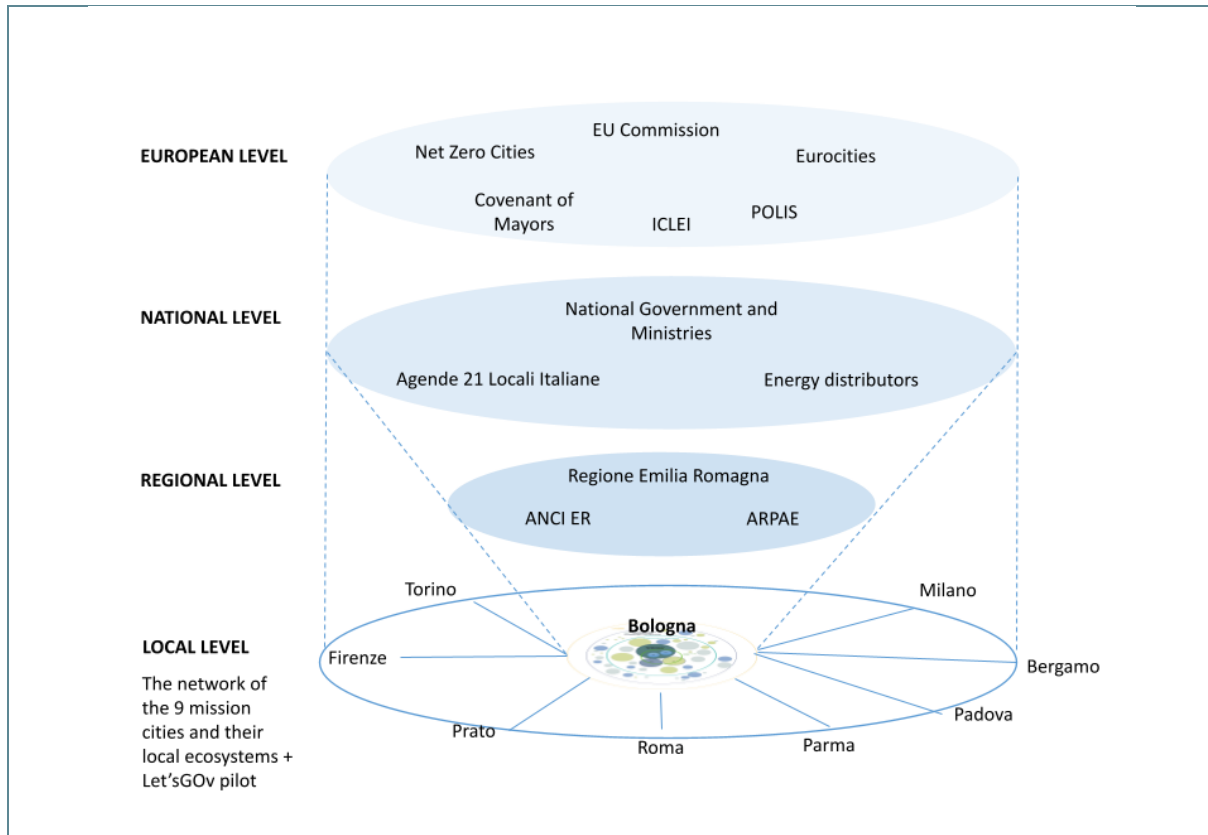


Figure 23: Multi-level governance for Bologna Missione Clima

### The Let'sGOv pilot project

The Let'sGOv - GOVerning the Transition through pilot actions project was selected as part of the Horizon 2020 Grant Agreement program nr. 101036519 - NetZeroCities Pilot Cities program H2020-LC-GD-2020-2 and provides overall project funding of €1,499,928.75. The project has a duration of 24 months starting from June 2023, it is coordinated by the Municipality of Bologna and encounters a partnership made up of the 9 Italian cities participating in the Mission, the University of Bologna as scientific partner and the two technical partners AESS (Agency for Energy and Sustainable Development) and the Energy Center of the Polytechnic of Turin. The project intends to address the common barriers identified by cities in the energy transition, both in internal governance (within Municipalities) and in external governance (multilevel and multi-stakeholder), focusing in particular on the processes of involving stakeholders and citizens, sharing of data and innovative financing models. Let'sGOv addresses internal barriers through a training and capacity building program in municipal departments on the topic of energy transition, also thanks to the study and exchange of best practices between partner cities and with other European cities (thanks to the NetZeroCities network of cities). This will contribute to the transition towards organisations that favour transversal processes and intersectoral coordination centres that allow the strengthening of internal strategic, operational and financial planning tools functional to achieving the strategic objective linked to the Mission. As regards external governance, Let'sGOv starts from the analysis of the barriers common to the 9 cities to propose improving solutions with respect to the regulatory framework, the quality and sharing of data and financing models, the absence of protocols, agreements or standardised procedures for energy transition processes at local level. At an international level, the innovative actions financed by the project in Bologna and in the other eight Italian cities of the network will be shared with the entire network of Mission cities. The pilot experimentation in Bologna will focus, on the one hand, on the consolidation of the already launched tools for involving and supporting citizens



on climate and energy issues, such as the Citizens' Assembly for Climate and the Energy Help Desk; the strengthening of networks between Italian and European cities and other relevant stakeholders at various levels will in fact allow the dissemination of results and the exchange of good practices relating to these tools, thus contributing to their evaluation and future improvement. On the other hand, Bologna will work together with other cities and technical partners to strengthen or launch multilevel working groups and networks, with public and private entities, necessary for the sharing and periodic updating of data and therefore for the construction of a model that contributes to the effective collection and monitoring of the data necessary for the periodic updating of the Climate City Contract.

### **Citizens' Assembly for Climate**

The Citizen Assembly is a democratic instrument of deliberative democracy, formally introduced in the Statute of the Municipality of Bologna on 12 July 2021 (City Council resolution 77/2021), which aims to directly involve a sample of randomly drawn citizens, to help propose and implement municipal policies.

The operating rules of the Assembly process are the result of a "Negotiating Table", which took place between February and June 2021, in which subjects from the economic world, the third sector, environmentalism and an institutional delegation of municipal councillors and representatives of the Council through a participatory process conducted by the Foundation for Urban Innovation-Rusconi-Villa Ghigi. The guidelines that emerged from this Table were certified by the regional participation guarantee technician and therefore formally introduced into the Regulation for the participation and information rights of citizens of the Municipality, with resolution of the City Council DC 74/2022 PG 465079/2022 of 01 /08/22, which in Chapter III regulates the Citizen Assembly, the rights of initiative, the methods of calling, the governance bodies and every aspect of its functioning.

On the basis of the Regulation, the Citizen's Assembly of the Municipality of Bologna can be called in three ways: on the initiative of the Municipal Council, with a request signed by the absolute majority of the Councilors (as in the case of the Climate Assembly); on a popular initiative, through a request presented by a promoting committee and signed by at least five thousand people; on the initiative of at least half plus one of the Neighborhood Councils.

The first Citizen Assembly was called by the City Council with resolution DC/PRO/2022/118 in December 2022, with the aim of defining "proposals and recommendations to make Bologna a solar, renewable and sustainable city, accelerating the fair energy transition, towards a model based on the reduction of energy consumption, energy efficiency, the production and use of renewable energy, individual and collective self-consumption, energy communities". In particular, there are three questions on which the Assembly was called to formulate proposals:

- How can we promote an energy transition in the city starting from the sectors with the most impactful climate-changing emissions, while at the same time guaranteeing the principle of equity and climate justice and combating the phenomena of poverty and marginalization?
- How can institutions and citizens address and contain the city's main climate risks (heat islands, extreme weather events, floods, droughts, etc.)?
- What are any obstacles found in the rules, services and regulations of municipal competence to the achievement of these objectives and possible improvements and innovations?

The sampling for the first City Assembly saw the selection of 100 members, of which 80 were residents over 16 years old, selected by lot according to a stratified random sampling, that is, ensuring that the sample represented the socio-demographic characteristics of the city (proportional to age groups, neighborhoods and gender). The other 20 members were instead drawn from "city users", in particular 10 university students from the University of Bologna and 10 season ticket holders for local public transport (TPER). The invitation to participate in the Citizen's Assembly was sent to 880 randomly selected people residing in the Municipality of Bologna and to 300 randomly selected non-resident students of the University of Bologna. To reach the 10 city user members of the Local Public



Transport, an invitation was sent to people who subscribed to metropolitan public transport and were not resident in Bologna and registered on the online service platforms (a few thousand) (Fig 24).

During the invitation sending phase, an information help desk was activated to answer all the questions of the people selected and a meeting was organized on 26 April to listen to experiences of other citizen assemblies in Europe, answer the latest questions and collect the latest memberships.

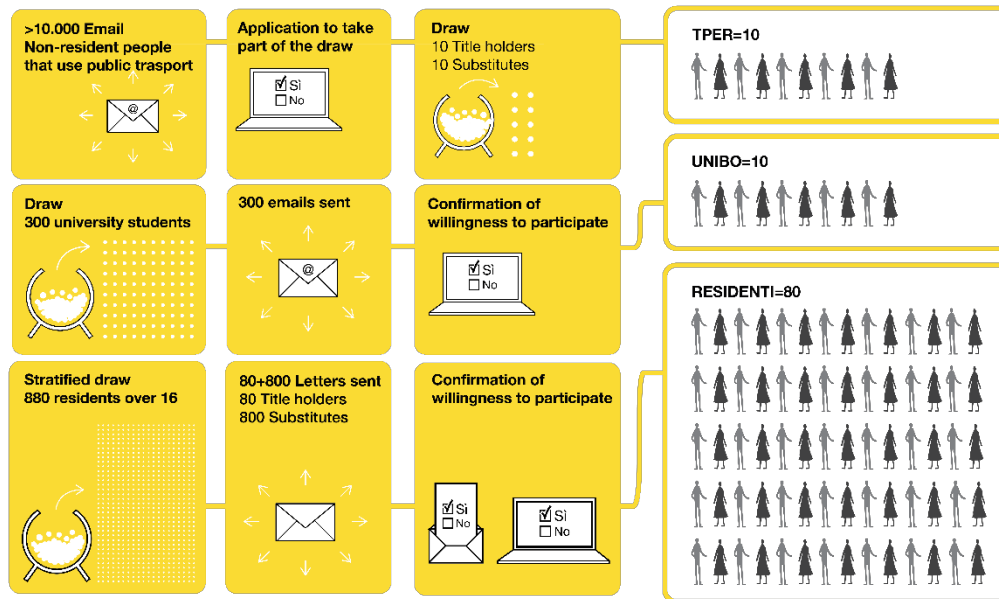


Figure 24: Selection criterion for the members of the City Assembly for climate of Bologna (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi)

Following the preparatory phase which saw the appointment of the various governance bodies, the random sampling, the sending of invitations, the communication campaign and the final selection of members, the Assembly formally began with the first session on 29 May 2023. The participation percentage has always been around 80%, reaching almost 90% in the first three meetings and in the eighth. During the process, as required by the regulations, 7 members were terminated for having made more than two consecutive absences and 5 members resigned after the second meeting; at the end of the process, the Citizen Assembly was therefore composed of 88 members.

The Assembly worked through four phases, in line with the Regulations and the Resolution that set it up (Fig.25).

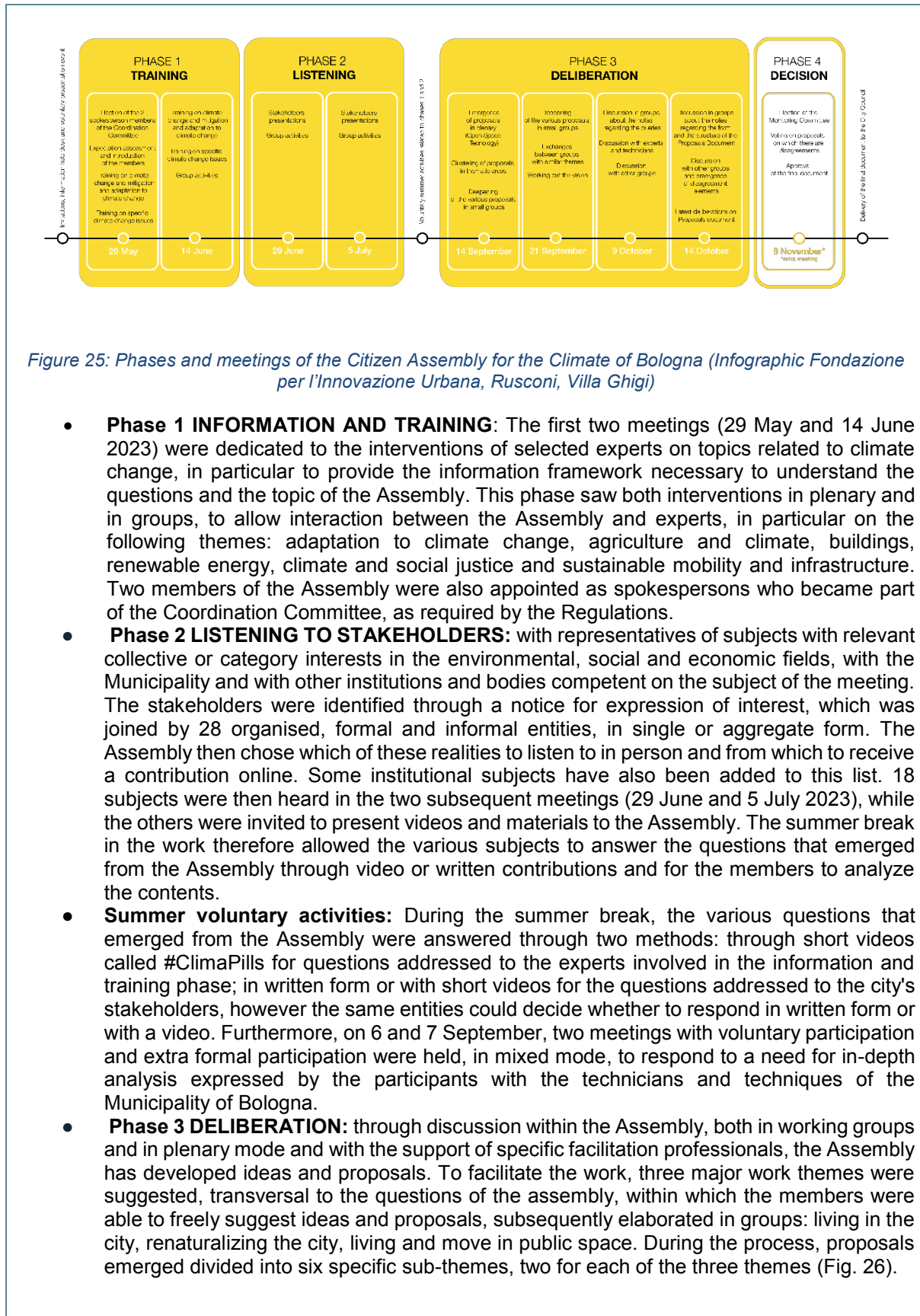


Figure 25: Phases and meetings of the Citizen Assembly for the Climate of Bologna (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi)

- Phase 1 INFORMATION AND TRAINING:** The first two meetings (29 May and 14 June 2023) were dedicated to the interventions of selected experts on topics related to climate change, in particular to provide the information framework necessary to understand the questions and the topic of the Assembly. This phase saw both interventions in plenary and in groups, to allow interaction between the Assembly and experts, in particular on the following themes: adaptation to climate change, agriculture and climate, buildings, renewable energy, climate and social justice and sustainable mobility and infrastructure. Two members of the Assembly were also appointed as spokespersons who became part of the Coordination Committee, as required by the Regulations.
- Phase 2 LISTENING TO STAKEHOLDERS:** with representatives of subjects with relevant collective or category interests in the environmental, social and economic fields, with the Municipality and with other institutions and bodies competent on the subject of the meeting. The stakeholders were identified through a notice for expression of interest, which was joined by 28 organised, formal and informal entities, in single or aggregate form. The Assembly then chose which of these realities to listen to in person and from which to receive a contribution online. Some institutional subjects have also been added to this list. 18 subjects were then heard in the two subsequent meetings (29 June and 5 July 2023), while the others were invited to present videos and materials to the Assembly. The summer break in the work therefore allowed the various subjects to answer the questions that emerged from the Assembly through video or written contributions and for the members to analyze the contents.
- Summer voluntary activities:** During the summer break, the various questions that emerged from the Assembly were answered through two methods: through short videos called #ClimaPills for questions addressed to the experts involved in the information and training phase; in written form or with short videos for the questions addressed to the city's stakeholders, however the same entities could decide whether to respond in written form or with a video. Furthermore, on 6 and 7 September, two meetings with voluntary participation and extra formal participation were held, in mixed mode, to respond to a need for in-depth analysis expressed by the participants with the technicians and techniques of the Municipality of Bologna.
- Phase 3 DELIBERATION:** through discussion within the Assembly, both in working groups and in plenary mode and with the support of specific facilitation professionals, the Assembly has developed ideas and proposals. To facilitate the work, three major work themes were suggested, transversal to the questions of the assembly, within which the members were able to freely suggest ideas and proposals, subsequently elaborated in groups: living in the city, renaturalizing the city, living and move in public space. During the process, proposals emerged divided into six specific sub-themes, two for each of the three themes (Fig. 26).



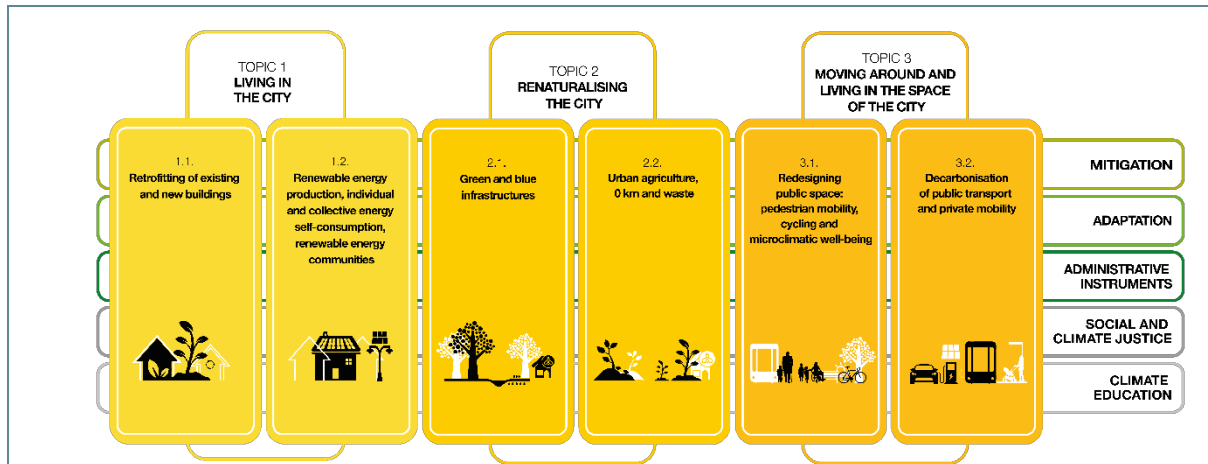


Figure 26: Themes that emerged during the deliberation phase of the Citizen's Assembly (Infographic Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi)

These meetings (14-21 September, 9-25 October) also included a direct discussion with municipal experts and technicians, for clarifications and insights requested by the Assembly for the development of the proposals.

- **Phase 4 DECISION:** In the last and ninth meeting (8 November 2023) the Assembly worked for the final definition and written approval of the proposals and recommendations that emerged. Since the Citizens' Assembly is based on a method of dialogue and argumentation between the participants, the recommendations and proposals contained in the final document are considered approved by consensus, as the result of joint work between the members. Only those proposals and recommendations for which one or more members disagreed were put to the vote. Following the Regulations, those proposals that reached a majority vote of 2/3 of the members present were considered approved. During the last meeting, a monitoring committee was also elected which will contribute, as per the regulation, to monitor the subsequent phase of evaluation and deliberation on the proposals by the City Council. The Monitoring Committee is made up of 22 members.

The final document approved by the Assembly contains 6 recommendations elaborated into 24 specific proposals, 4 for each recommendation. The recommendations relate to:

- Recommendation 1: buildings,
- Recommendation 2: renewable energy,
- Recommendation 3: green and blue infrastructure,
- Recommendation 4: waste, sustainable food and agriculture,
- Recommendation 5 and 6: sustainable mobility.

Below is an extract of the Recommendations and the titles of the related proposals; the entire document is attached to this Action Plan (Annex 1) and published on the Assembly website at the link in note<sup>11</sup>.

-----

### Recommendations and proposals of the Citizens' Climate Assembly

#### Recommendation 1. Neutral Bologna is our sustainable home

The building stock accounts for 75% of CO2 production in Bologna, making the redevelopment of existing buildings and new buildings a central theme for mitigating emissions and promoting adaptation to ongoing climate changes.



The Municipality and higher level bodies are already equipped with administrative tools and incentive tools that regulate the sector, from which it is important to start to facilitate and guarantee on the one hand their effective implementation and on the other the possibility for citizens and businesses to take advantage of it.

Tools such as the Building Regulations (RE) and the Action Plan for Sustainable Energy and Climate (SEAP) already identify sustainability objectives for new buildings and renovation interventions on existing buildings but for non-experts it appears it is difficult to be aware of their actual implementation and impact.

However, compared to the various incentives provided at national, regional, municipal level, citizens and businesses often have difficulty accessing them due to the continuous evolution of the legislation, the complexity of the information, and the lack of financial guarantees.

Given the economic impact of interventions in the construction sector, the challenge of the policies and measures implemented in this area is to find solutions and mechanisms that allow the interventions to be carried out, guaranteeing the provision of current services and paying particular attention to those who have greater economical difficulties.

**To overcome the challenge and achieve the above, it is recommended to promote awareness campaigns and increase awareness; to promote collaboration between public and private for the redevelopment of the building heritage; to identify forms of incentives and support and to promote zero-impact buildings.**

Proposal 1.a. Promote awareness campaigns and increase awareness

Proposal 1.b. Promote active collaboration between public and private for the redevelopment of the building heritage

Proposal 1.c. Identify forms of incentive and support

Proposal 1.d. Promote zero impact buildings

## **Recommendation 2. Neutral Bologna is a large renewable energy sharing community**

*In the path towards achieving climate neutrality, a fundamental point is represented by energy and how it is used and produced at a local level.*

*The challenge for the city in the coming years will therefore be on the one hand to increase the awareness of the local community on these issues, on the other the consolidation of mechanisms that facilitate the creation of local production and distribution plants, as well as the adhesion of citizenship, organizations and institutions to forms of collective energy production and consumption.*

*It is therefore recommended to support research to promote the production of energy from renewable sources in a more efficient, diversified way and with fewer impacts; to promote the creation of renewable energy communities and other forms of sharing energy production from renewable sources and the disposal of decommissioned plants; to make people more aware and responsible and make ecological transition processes simpler*

Proposal 2.a. Support research to promote the production of energy from renewable sources in a more efficient, diversified way and with fewer impacts

<sup>11</sup> <https://www.comune.bologna.it/partecipa/percorsi/8-novembre-2023>



Proposal 2.b. Promote the creation of Renewable Energy Communities and other forms of sharing energy production from renewable sources and the disposal of decommissioned plants

Proposal 2.c. Make people more aware and responsible

Proposal 2.d. Making ecological transition processes simpler

### **Recommendation 3. Neutral Bologna is greener and bluer**

*The city of Bologna is crossed by numerous waterways and canals which over the centuries have played an important role in the development of the silk industry, historically connected to hydraulic energy.*

*The local water network, however, is largely made up of buried canals and for this reason constitutes a risk for the city, as it crosses the subsoil interfering with public and private buildings, often without the citizens being aware of it, creating favorable conditions for the occurrence of potential damage following extreme climatic events, which are now increasingly frequent. Many lowland areas are classified as floodable in planning. In light of these considerations, it appears urgent to update the urban planning regulations regarding interventions relating to hydraulic risk, favoring public intervention in parallel with private initiatives to achieve satisfactory results more quickly.*

*To achieve important objectives such as lowering temperatures, absorbing CO<sub>2</sub>, containing heat islands, preserving biodiversity, achieving climate justice and therefore, in general, improving the quality of life for its residents, the city of Bologna must intervene by working on multiple fronts.*

*Consistent with the achievement of the objectives listed above, it is recommended to naturalize the city and make urban soils permeable; study, monitor and protect water bodies for the prevention of hydrogeological risk; train and inform citizens starting from schools and promote collaboration between experts, citizens and the Administration.*

Proposal 3.a. Naturalize the city and make urban soils permeable

Proposal 3.b. Study, monitor and protect water bodies for the prevention of hydrogeological risk

Proposal 3.c. Train and inform citizens starting from schools

Proposal 3.d. Promote collaboration between experts, citizens and the Administration

### **Recommendation 4. Neutral Bologna is your life model to cultivate**

*The framework of the work directions and the related actions identified outlines a sort of path which, starting from education and awareness-raising actions, promotes awareness of sustainable behaviours, in particular linked to consumption, waste production and nutrition, and concretely supports changes in individual lifestyles to gradually establish them as true community practices, with a positive impact on the territory and benefits on the environment in terms of reduction of emissions but also on the quality of life, public health and the valorisation of territory.*

*In particular, it is recommended to make Bologna the city with the most local production markets in Italy; promote agricultural self-production; carry out environmental awareness and education activities on urban agriculture and nutrition and reduce waste and transform remaining waste in resource.*

Proposal 4.a. Making Bologna the city with the most local production markets in Italy

Proposal 4.b. Promote agricultural self-production



Proposal 4.c. Carry out environmental awareness and education activities on urban agriculture and nutrition

Proposal 4.d. Reduce waste and transform remaining waste into a resource

**Recommendation 5. Neutral Bologna is a city that reorganises its spaces for sustainable mobility**

*The current situation in Bologna is affected by a model of urban development and service planning centred on the use of the car.*

*To reverse this trend, the main challenge is to change people's mobility habits and redesign public space by favouring pedestrianism and cycling.*

*To achieve this objective, it is recommended to raise awareness among the population to change its mobility habits; promote intermodality and shared mobility; increase cycle paths and make them safer and improve the quality of public space by making it accessible to all people.*

Proposal 5.a. Raise awareness among the population to change their mobility habits

Proposal 5.b. Promote intermodality and shared mobility

Proposal 5.c. Increase cycle paths and make them safer

Proposal 5.d. Improve the quality of public space by making it accessible to all people

**Recommendation 6. Neutral Bologna is in collective and eco-sustainable movement**

*Bologna is crossed by numerous waterways and canals which over the centuries have played an important role in the development of the silk industry, historically connected to hydraulic energy.*

*The local water network, however, is largely made up of buried canals and for this reason constitutes a risk for the city, as it passes through the subsoil interfering with public and private buildings, often without the citizens being aware of it, creating favourable conditions for the occurrence of potential damage following extreme climatic events, which are now increasingly frequent. Many lowland areas are classified as floodable in planning. In light of these considerations, it appears urgent to update the urban planning regulations regarding interventions relating to hydraulic risk, favoring public intervention in parallel with private initiatives to achieve satisfactory results more quickly.*

*To achieve important objectives such as lowering temperatures, absorbing CO<sub>2</sub>, containing heat islands, preserving biodiversity, achieving climate justice and therefore, in general, improving the quality of life for its residents, the city of Bologna must intervene by working on multiple fronts.*

*Consistent with the achievement of the objectives listed above, it is recommended to naturalize the city and make urban soils permeable; study, monitor and protect water bodies for the prevention of hydrogeological risk; train and inform citizens starting from schools and promote collaboration between experts, citizens and the Administration.*

Proposal 6.a. Reduce private car traffic and reduce its emissions

Proposal 6.b. Create comfortable, convenient and usable public transport

Proposal 6.c. Promote sustainable and shared home-work and home-study travel

Proposal 6.d. Discourage private and public flights



-----

As required by the Regulation and the Municipal Statute, the citizens' recommendations and proposals must be evaluated by the Municipal Council, therefore preliminary sessions were organized at the competent Council Commissions to give the Monitoring committee the opportunity to illustrate all the outcomes.

The City Council has evaluated the Citizens Assembly's proposals, recognizing a general consistency with the strategic objectives of the Administration, while identifying some innovative and concretely implementable actions.

The Council has appreciated and shared the Assembly's request to act in a transectoral and integrated way on the needs of awareness, training, information and support for citizens and to other key actors towards climate neutrality, also through new channels, tools and roles that enhance what is already in place and recognize the need to define an overall and coordinated action strategy on these issues and also the reference to the principles of climate justice and social equity to avoid that the transition costs and the consequences of climate change exacerbate conditions of fragility.

The City Council has also identified three areas of intervention as priorities, transversal to different recommendations, since they are useful for achieving tangible results already within the present administrative mandate, as they are already part of the administration's flagship projects, but they can draw support from the directions of the Assembly:

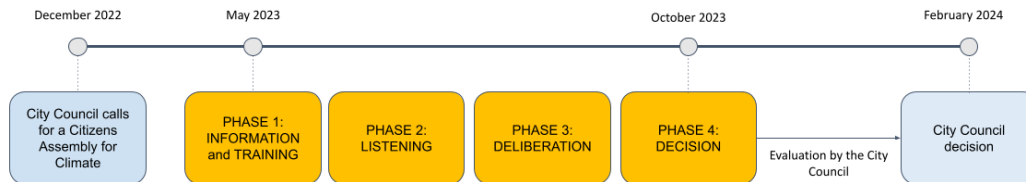
1) In the field of energy and renewable sources: promote the development of financial instruments, such as ESCo o ways of accessing credit to encourage the ecological transition of citizens, in collaboration and proactive discussion with potential public or private financiers, public shared companies, enterprises, for example through tenders or public notices from the Administration which must continue in the path of innovation and market orientation, also through the creation of support mechanisms for the energy requalification of private properties as well;

2) some proposals relating to school mobility are considered of particular importance because involve travel for the entire families and meet the objectives of education, sustainable mobility and improved safety for all road users, in line with what provided by the "Città 30" (30km/h city). In particular, high priority, also in the procurement of the necessary resources, will have to be given to some specific tools suggested by the Assembly: mobility management spread across every neighbourhood, enhance and promote the figure of mobility managers in schools also through a network coordination role, progressive increase in walking bus and cycling bus, increase in school squares and school streets to be designed and financed, reactivation of initiatives that incentivize the transformation of public space involving schools and companies, and engaging the productive sector in a proactive way;

3) the proposals relating to the green infrastructure of the city considered of particular importance as consistent with the administration's flagship project "Impronta Verde" (Green Footprint). In particular, high priority, also in finding the necessary resources, will have to be given to some tools suggested by the Assembly: creation of climate shelters, increase in the permeability of soils, protection and safeguarding of existing green areas with particular reference to performance levels, restrictions and compensations contained in plans and regulations, installation of widespread drinking fountains in public parks and along the most travelled, urban forestation actions and redevelopment of school green areas for the creation of new vegetable gardens to carry out environmental education activities, installation of micro-green areas also in the historic centre.

The City Council, with its resolution, therefore gave a mandate to the Deputy Mayors council to include such priority recommendations in the programming cycles, also as guidelines for companies with a share by the Municipality, subject to verification of technical and economic feasibility, which will be followed by a timely monitoring of progress with periodic feedback to the Council itself.

The diagram below summarizes the entire process, from the announcement to the implementation of the outcomes of the Climate Assembly.



*Figure 27: Summary of the entire process of the Citizen Assembly of the Municipality of Bologna*

For further details, please refer to Annex 1 of this Action Plan, which reports in its entirety:

- the Resolution of the City Council evaluating the Assembly's Recommendations and proposals;
- the final report of the Assembly, drawn up by the Coordination Committee, which contains the description of the entire process;
- the Recommendations and proposals of the Citizens' Assembly.

In terms of communication to citizens, all the interventions in the Assembly's plenary session were streamed and can be viewed on the YouTube channel of the Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi<sup>12</sup>.

On the web page dedicated to the Assembly there are also all the presentations and materials<sup>13</sup>. Articles on the various sessions of the Assembly have also been periodically published on the Chiara.eco portal<sup>14</sup>.

Finally, an editorial team made up of volunteer members of the Assembly was activated to disseminate the initiative via their social media channels in the last phase of the process.

### **Regulatory innovation interventions**

As already anticipated in modules A-2 (table A-2d) and B-2, the Municipality of Bologna is actively involved in regulatory innovation actions necessary to enable and support the climate transition, both by acting on its own tools and by contributing to the updating and development of the legislative and regulatory framework at regional and national level. Below is a summary of the main interventions deemed necessary, in progress or already carried out:

**National Climate Law:** in order to accelerate the climate transition, the Municipality of Bologna deems it necessary to promote a national climate law as happened in other European countries (such as France, Germany and Spain) to define, sector by sector, the actions and the tools, at national level, to achieve climate neutrality, also by transferring the different forms of economic support for activities and actions that aggravate the climate crisis, towards activities and actions that favor mitigation and adaptation to ongoing climate changes. This new national law could provide a significant external contribution to Italian cities currently committed to the objective of climate neutrality by 2030. To this

<sup>12</sup> <https://www.youtube.com/live/LBAYi7cYZ8I?feature=share>

<sup>13</sup> <https://www.comune.bologna.it/partecipa/percorsi/assemblea-cittadina-per-il-clima>

<sup>14</sup> <https://www.chiara.eco/partecipare/>



end, the Municipality will promote forms of discussion with all institutional levels to define the objectives, actions and tools which can be contained in the norm.

**National decree for the definition of areas suitable for the installation of energy production systems from renewable sources:** the expectations are those of an expansion of renewable energy deposits at national and local level, starting from photovoltaic, a further simplification of authorizations and the review of the forms of public economic support for the various sources of renewable energy. In particular, Bologna will promote:

- further regulatory and procedural simplifications as well as an erosion of the constraints that limit the installation of energy systems from renewable sources;
- a greater possibility of diffusion of innovative agrivoltaics;
- a remodulation of the forms of economic support relating to energy sources, strengthening the incentives for renewable sources intended above all for the diffusion of small plants, and eliminating those relating to fossil sources.

**Update of the Integrated National Energy and Climate Plan (INECP):** The Municipality of Bologna, together with the other Italian cities of the Mission, is interacting with the National Government to update the INECP. In particular, the Municipality's proposals are aimed at increasing and/or stabilizing the tax bonuses for building redevelopment, and in particular the Photovoltaic Bonus for the residential sector, even going beyond 50% (e.g. 75%), or by contracting the time frame of the deductions (for example from 10 to 5 years), possibly recovering resources from the elimination of now obsolete forms of economic support attributable to fossil fuels, especially in those cases in which a transition would be economically more advantageous for the recipients themselves towards renewable sources. It is also proposed to strengthen the forms of economic support aimed at heat pump systems (air-water, water-water, air-air, geothermal), reaching deductions of 75% and therefore higher than the current Ecobonuses (65%) and home bonus (50%), seeking an economic balance through the reduction (up to the progressive elimination) of incentives for gas boilers.

**Observations to the National Plan for Adaptation to Climate Change (NPACC):** The Municipality, together with the Emilia-Romagna Region, presented observations on the Plan for various environmental matrices, underlining how the Plan lacks the identification of specific strategies and the definition of priorities, objectives, targets and times for their achievement. This plan, in addition to the necessary contribution to climate adaptation, an increasingly urgent issue for the territories, can have an important role on emissions throughout the national territory, for example by promoting a rapid and widespread development of Nature Based Solutions (NBS) throughout the national territory, providing, among the various ecosystem services, also a greater capacity for CO<sub>2</sub> sequestration and storage.

**Review of the General Urban Plan (PUG) and Building Regulations (RE):** In 2023 the Municipality of Bologna started the procedures envisaged by LR 24/2017 to introduce some changes to the PUG. The variant proposal aims first of all to make the PUG's actions better adhere to the programmatic mandate lines of the current Administration, in terms of effectiveness and efficiency in the control of urban transformations, as well as the pursuit of the climate neutrality objectives of the Mission. Among the objectives of the Variation there is also the further expansion of the local photovoltaic field, the promotion and incentive of building and urban planning interventions for climate neutrality, the strengthening of the energy infrastructures necessary for local production and the sharing of energy from renewables, the refinement of climate and environmental provisions.

**Regional legislation regarding location criteria for photovoltaic systems:** The Municipality of Bologna participated with specific proposals in the work which on 23 May 2023 led to the approval of the Resolution of the Legislative Assembly of the Emilia-Romagna Region n. 125 " *Specification of location criteria to guarantee maximum diffusion of photovoltaic systems and to protect agricultural soils and the landscape and environmental value of the territory.* (Council Resolution no. 214 of 13



*February 2023)*”, with the aim of promoting the maximum development of photovoltaics in the regional territory. The objective of the resolution is to promote the maximum development of photovoltaics in the area and its innovative elements allow, at city level, a significant increase in the local photovoltaic field. For example, the resolution gives a greater boost to the development of photovoltaics in abandoned or reclaimed quarries, which cover an area of approximately 2.5 km<sup>2</sup> in the municipality of Bologna alone.

## 5.2 Module C-2 Social Innovation Interventions

C.2.1: Enabling social innovation interventions					
Intervention name	Description	Responsible organisation/department/person	Stakeholders involved	Enabling impact	Co-benefits  (Indicate how the interventions contribute to achieving the impacts listed in Module B-1)
<b>Energy help desk (Sportello energia)</b>	An information service aimed at citizens on the topics of renewable energy, efficiency and energy saving, activated in March 2023 as an action of the Missione Clima Bologna.	Ecological Transition Sector and Climate Office  AESS	Municipality of Bologna  Citizens	Fundamental to support citizens in the energy transition and identify citizens' needs on this issue  (Barriers T4, T6, B2, B3 - ref. Module A3)	Greater community participation in the Mission  Increased access to information, awareness and behavior change  Greater diffusion of sustainable practices





<p><b>Energy and Environment Showroom</b></p>	<p>An educational offer for schools, centered on energy and climate issues. All educational activities are offered free of charge and can be carried out in person or remotely.</p>	<p>Director of the Villa Ghigi Foundation  Director of the Ecological Transition Sector and Climate Office</p>	<p>Municipality of Bologna  Schools</p>	<p>Fundamental for spreading a culture of climate transition and educating new generations (Barriers T6, MT1, W - ref. Module A3)</p>	<p>Increased access to information, awareness and behavior change  Greater diffusion of sustainable practices  Increased awareness and consensus towards the energy transition and climate neutrality  Change in consumption style</p>
<p><b>“Bologna Innovation Ecosystem” event (23 March 2023)</b></p>	<p>Organized as part of the European CITIES 4.0 project, it is one of the events held in the four participating cities to activate innovation ecosystems that contribute to the Mission.</p>	<p>Fondazione per l’Innovazione Urbana-Rusconi-Villa Ghigi (as partner of the CITIES 4.0 project)</p>	<p>50 participants representing Bologna organizations working on the built environment and researchers from the University of Bologna</p>	<p>Activation of an innovation ecosystem for climate neutrality (buildings sector) among city actors dealing with R&amp;I in the built environment (Barriers B1, B2, B3 - ref. Module A3)</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders  Greater community participation in the Mission</p>
<p><b>Participatory budgeting</b></p>	<p>Tool for involving the citizens of Bologna directly in the design of new projects for the neighborhoods. In the 2023 edition, particular attention was paid to the issues of environmental sustainability and the climate</p>	<p>Fondazione per l’Innovazione Urbana - Rusconi-Villa Ghigi and Municipality of Bologna (Department of Public Works, Green and Mobility, Communications Office, Neighborhood Area)</p>	<p>Citizens (voters: 19,327)  (528 participants in the Neighborhood Workshops for carrying out the BP).</p>	<p>The projects presented in 2023 were developed taking into consideration the objectives of the Mission and any impacts as criteria. (T6 Barriers)</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders  Greater community participation in the Mission</p>



<p><b>Working Group for the Quality of Buildings</b></p>	<p>The Group is a space for active discussion between the Administration and representatives of professionals and the local economy. It is open to all local organizations representing professional orders and colleges and associations and economic categories in the sector. The WG operates mainly through Technical Working Groups, with predefined mandate and duration, which develop proposals to be discussed and validated in plenary sessions.</p>	<p>Municipality of Bologna Urban Planning, Home and Environment</p> <p>and Fondazione Innovazione Urbana-Rusconi-Villa Ghigi</p>	<p>38 professionals representing the participating Associations and Orders</p> <p>AENEAS</p> <p>ACER</p> <p>Superintendence of Fine Arts and Landscape</p>	<p>The technical working group has defined some proposals to identify solutions that can facilitate energy efficiency interventions in buildings, including those of historical value and protected. (Barriers T5, B 1,2,3 - ref. Module A3)</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders</p> <p>Greater diffusion of sustainable practices</p> <p>Increased awareness and consensus towards the energy transition and climate neutrality</p>
--	--	--	--	--	--



<p><b>Chiara.eco</b></p>	<p>Project coordinated by the Fondazione per l'Innovazione Urbana - Rusconi,-Villa Ghigi with the support of Formicablu and promoted by the Municipality of Bologna, created to describe Bologna Missione Clima and the situation relating to the ecological and climate crisis, as well as explaining how to act to address it and the experiences to collaborate with the aim of activating new and concrete processes of change</p>	<p>Fondazione Innovazione Urbana-Rusconi-Villa Ghigi, Formicablu and Municipality of Bologna</p>	<p>Experts and scientists  Politicians  Technicians  Journalists  Citizenship</p>	<p>Chiara.eco has published over 160 articles, podcasts and news that tell, raise awareness and promote awareness around environmental issues and the Bologna Missione Clima. (Barriers T6, W, MT1- ref. Module A3)</p>	<p>Increased access to information, awareness and behaviour change  Greater diffusion of sustainable practices  Increased awareness and consensus towards the energy transition and climate neutrality  Change in consumption styles</p>
<p><b>The PHOENIX project and the Neighborhood Houses</b></p>	<p>Bologna is one of the testing areas of the H2020 Phoenix project and from 2023 will test the co-planning of actions in neighborhood houses in order to bring citizens closer to the Missione Clima.</p>	<p>Fondazione Innovazione Urbana-Rusconi-Villa Ghigi in collaboration with the University of Florence (project partner)</p>	<p>Municipality of Bologna, Neighborhood Houses, some members of the Climate Assembly, citizens</p>	<p>The experimentation will activate new tools to raise awareness and support citizens in the energy and climate transition at neighborhood level (Barrier T6 - ref. Module A3)</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders  Greater community participation in the Mission  Increased access to information, awareness and behavior change</p>



<p><b>H2020 FAST TRACK – Fostering the Acceleration of Sustainable Transport To Regions and Authorities Through Capacity and Knowledge</b></p>	<p>The project aims to create a thematic community of mutual learning to transfer innovations in the field of sustainable mobility.</p>	<p>Coordinated by ICLEI Europe</p> <p>For the Municipality of Bologna: Sustainable Mobility and Infrastructure Sector; Europe and International Sector</p>	<p>24 European cities, Eurocities and 4 research institutions are participating in the project.</p>	<p>Capacity building and exchange of best practices between European cities on sustainable mobility (MT Barriers - ref. Module A3)</p>	<p>Improvement of the healthiness of the urban environment (starting from air quality)</p>
<p><b>ENLIGHTENme - Innovative policies for improving citizens' health and wellbeing addressing indoor and outdoor lighting</b></p>	<p>The project acts on the two fronts of external public lighting and indoor lighting, to study the connections between lighting and health</p>	<p>Coordinated by the University of Bologna</p> <p>For the Municipality of Bologna: Health and Healthy Cities Office (Welfare and Community Wellbeing Department) - lead partner / Maintenance (Public Works, Mobility and Heritage Department); Europe and International Sector</p>	<p>Partners in Bologna:</p> <p>University of Bologna ISNB IRCCS - Institute of Neurological Sciences of Bologna, Municipality of Bologna, Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi , and 18 other Italian and European partners</p>	<p>The research activities conducted contribute to raising awareness of the link between lighting, environment and public health, confirming the co-benefits of innovative lighting systems on health (Barriers T5,6 ref. Module A3)</p>	<p>Positive impacts on health</p>
<p><b>#ClimateOfChange: End Climate Change, Start Climate of Change</b></p>	<p>Production of knowledge, facts and guidelines for communication on the link between economic models, climate change and migration, Raising awareness of young people on the topic.</p>	<p>Coordinated by WeWorld</p> <p>For the Municipality of Bologna: Innovation Sector, Administrative Simplification and Relations with the citizen; Europe and International Sector</p>	<p>Partners in Bologna: University of Bologna and Municipality of Bologna, 14 other Italian and European partners</p>	<p>Important contribution to raising the awareness of students and young people on climate change and the link with migratory phenomena (Barrier T5 - ref. Module A3)</p>	<p>Increased social inclusion</p>



<p><b>LIFE PrepAir - Po Regions engaged to policies of Air</b></p>	<p>Improvement of air quality in the Po Valley area and in Slovenia, through awareness-raising actions and concrete interventions.</p>	<p>Coordinated by the Emilia-Romagna Region</p> <p>For the Municipality of Bologna: Ecological Transition/Sustainable Mobility and Infrastructure Sector; Europe and International Sector</p>	<p>6 Italian regions, 7 regional environmental protection agencies, three municipalities, including Bologna, 1 regional development agency and 1 foundation are participating in the project</p>	<p>Important impact on raising the awareness of citizens and socio-economic actors and strengthening the network of institutions and stakeholders on the topic of air quality, which is strongly linked to the climate. (Barriers T1, T5 - ref. Module A3)</p>	<p>Improvement of the healthiness of the urban environment (starting from air quality)</p>
<p><b>LIFE CLIVUT - Climate Value of Urban Trees</b></p>	<p>Enhancement of the potential of urban trees to mitigate the effects of pollution. Awareness raising and participation of citizens in awareness-raising activities. Educational actions. Awareness actions also aimed at the business and academic world.</p>	<p>Coordinated by University of Perugia</p> <p>For the Municipality of Bologna: Mobility Department, Public Works, Ecological Transition Sector; Europe and International Sector</p>	<p>Municipality of Bologna, citizens, students, planners, businesses Other project partners</p>	<p>Increased awareness among citizens, technicians and businesses on the contribution of greenery and trees on air quality and the urban climate; increase in management and maintenance capabilities of urban greenery. (T5 barriers - ref. Module A3)</p>	<p>Improvement of the healthiness of the urban environment (starting from air quality)</p> <p>Increase in urban green spaces</p> <p>Improved dialogue and collaboration between institutions, citizens and stakeholders</p> <p>Greater community participation in the Mission</p> <p>Increased access to information, awareness and behavior change</p>



<p><b>D-SPINER – Digital Source of Power in Emilia-Romagna</b></p>	<p>Creation and testing of computer models for calculating the energy consumption of properties, capable of predicting variations following efficiency works, and as a tool for planning building interventions to reduce the production of greenhouse gases.</p>	<p>Coordinated by the University of Bologna</p> <p>For the Municipality of Bologna: Culture Department</p>	<p>University of Bologna, Municipality of Bologna.</p>	<p>Part of the larger digital twin project of the city of Bologna, the project aims to create an intelligent digital platform for the optimization of a building's energy resources (Barriers B ref. Module A3)</p>	<p>Greater local energy autonomy</p> <p>Fight against energy poverty</p> <p>Increase and stimulus of the circular economy</p>
<p><b>REALLOCATE - Rethinking the design of streets And public spaces to Leverage the mOdal shift to Climate-friendly Active Transport Everywhere</b></p>	<p>Nudging solutions will also be tested in all the pilot cities of the project, i.e. communication tools to push for a change in behaviour with respect to the use of cycle and pedestrian traffic.</p>	<p>Coordinator: University College of Dublin (UCD)</p> <p>For the Municipality of Bologna: Mobility Department - UI Impronta Verde; Europe and International Sector</p>	<p>Municipality of Bologna, citizens</p> <p>Other project partners</p>	<p>On the north-east axis of Bologna (Road of Knowledge): Redesign of a school square with street furniture interventions and new technologies in order to make access to the school safer for all users and to reduce CO<sub>2</sub> consumption, promoting active mobility (Barrier MT1)</p>	<p>Improved dialogue and collaboration between institutions, citizens and stakeholders</p> <p>Greater community participation in the Mission</p> <p>Increased access to information, awareness and behaviour change</p> <p>Greater diffusion of sustainable practices Greater safety and liveability Equity in access to public space</p>



## C-2.2: Description of social innovation interventions

### Energy Help Desk (Sportello Energia)

The Energy Help Desk of the Municipality of Bologna was activated in March 2023. It represents one of the key actions of the Bologna Missione Clima with a view to strengthening the information and training of citizens, both in terms of raising awareness on the climate issue and to bring the whole citizens and operators in various capacities interested in the opportunities of the energy transition, to achieve the important objective of climate neutrality by 2030.

It is a free information service and contributes to the strategic energy transition objectives underlying the Mission with the following operational objectives:

- Improve citizens' knowledge of the benefits deriving from the use of renewable sources;
- Increase energy awareness about one's own consumption;
- Orient behaviours and energy choices towards sustainable models.

To this end, the Help Desk provides indications and information about technologies aimed at energy efficiency and energy production from renewable sources, the related incentive opportunities and the relevant regulations, including those relating to the Administration's regulatory and planning tools.

Managed by AESS, it is currently operational remotely and contactable by telephone or email. Furthermore, the web page contains information, suggestions, video pills and cards to know and understand your consumption, adopt energy saving behaviours, request the supply of green energy, access incentives, deductions and bonuses. The contents are updated periodically, also with video clips published on the Municipality's YouTube channels<sup>15</sup>.

The Energy Help Desk is a valuable tool for the Municipality also in terms of listening to the city: the analysis of the requests received at the help desk in the first year of operation will in fact provide important information to the Municipality in terms of citizens' needs and interest in the energy transition and will therefore be able to guide future activities aimed at citizens on the subject of energy. The requests received to date mainly concern information and clarifications on incentives and deductions available for energy efficiency or the installation of solar panels on private buildings, as well as the reference procedures to follow. This confirms how access to information and the procedures for requesting benefits and incentives is still complex for citizens, especially due to the constantly evolving national legislative and regulatory framework and the poor accessibility and clarity of information for the end user.

In order to ensure the continuity and potential scalability of the desk during 2024, in the last months of 2023 the Municipality requested and obtained funding from the PR FESR 2021/2027 program - "ACTION 2.2.4 System actions to support Local authorities" through the tender "System actions to support local authorities on energy transition issues".

The financed activity concerns the management and strengthening of the activity of the Energy Desk in the months July 2024 - December 2024, with the following objectives:

- extend the Energy Desk service, guaranteeing continuity until the end of 2024;
- enhance the activity through face-to-face meetings with users and webinars, aimed at in-depth analysis of specific issues with the aim of directly involving citizens and actors (associations of property owners and condominium administrators, etc.) who can convey the information normally equipped with an energy counter;
- continue with the monitoring activity of the Help Desk for the purposes of assessing user needs and therefore its future continuity and potential scalability.

<sup>15</sup> <https://www.comune.bologna.it/servizi-informazioni/sportello-energia-informazioni>



The Help Desk service is therefore expected to continue throughout 2024, which will be provided using the channels already active (website, telephone line and e-mail), in particular through the periodic updating of the information and resources provided by the website, with new contents, developed taking into account the monitoring of the help desk's results during the period March 2023 - June 2024. In addition, a cycle of in-person meetings and webinars will be organised, to be published on the website, aimed at in-depth analysis of specific topics, aiming to directly involve citizens and key players in the private residential sector (e.g. associations of property owners and condominium administrators, etc.), a key emissions sector for the city. These activities will have as their objective the in-depth study of the various renewable energy production technologies, the energy efficiency systems of buildings and the financial instruments to support the interventions.

Thanks to the monitoring and evaluation of the first period of activity of the Energy Desk (March 2023 - December 2024), it will be possible to evaluate whether to continue the service and possibly scale it up, expanding the reference target (catchment area) and/or the services offered (for example e.g. from information service to further support services for the energy transition), also on the basis of other ongoing experiences in other Italian and European cities. In this sense, Bologna's participation in the Mission will allow the exchange of experiences and good practices on energy desks (One stop shops) both with the network of the 9 Italian cities of the Mission and with other European cities, acquiring guidelines and recommendations for continuation and possible strengthening of the Energy Desk from 2025 and multiplying the potential for the replicability of the ongoing experience.

The following results are expected through the continuation and strengthening of the Help Desk during 2024:

- information disseminated among the citizens of the Municipality of Bologna and the private residential sector on the issues of energy transition and related benefits;
- greater awareness of one's energy consumption capable of guiding towards virtuous energy saving behaviours;
- better knowledge by citizens of energy efficiency solutions and technologies for the production of renewable energy, their benefits and related incentive and installation opportunities;
- better knowledge by players in the private residential construction sector on the opportunities offered by energy efficiency solutions and technologies for the production of renewable energy, their benefits and related incentive and installation opportunities;
- greater information relating to measures to combat energy poverty.

### **The Energy and Environment Showroom**

The Energy and Environment ShowRoom - Center for Ecological Transition Education in Bologna - is the tool chosen by the administration to raise awareness on how to face the "zero climate impact" challenge with educational actions dedicated to schools.

Activated since 2003 to plan and implement environmental awareness and education actions in schools, the Center involves more than 5000 students every year for lifelong learning on the topics of ecological transition and the fight against the climate crisis. The Center proposes:

- a multimedia room for educational activities, training and scientific and environmental dissemination;
- interactive educational paths dedicated to school (6-18 years);
- production of information materials on the ecological transition;
- an information desk for teachers and consultancy on environmental teaching.
- environmental literacy events aimed at citizens





- a competition for schools on the circular economy (Zero Waste)

With the "Bologna Missione Clima" programme, the Showroom's offering has focused more on the climate theme, offering practical and interactive paths to face the "zero climate impact" challenge. The teaching offer for the 2023/2024 school year is structured into five teaching areas:

- PLANET: cut greenhouse gases to save the climate and water;
- NEUTRAL CITY: green actions to transform your city;
- ENERGY: knowing energy sources and how to save;
- TOWARDS ZERO WASTE: reduction, reuse, recycling to save resources and energy;
- WE AND THE CITY: imagining sustainable urban spaces.

All educational activities are free and can be carried out in person at the Showroom or at institutes located in the Municipality of Bologna, as well as online<sup>16</sup>.

The Energy and Environment ShowRoom focuses its environmental education actions in the urban dimension, with the aim of training active and aware citizenship.

At the basis of all the activities there is a solid mechanism of environmental storytelling that takes the city as the living environment of the users, in the perspective that it is an ecosystem whose quality depends on our choices and whose sustainability is reflected in our well-being. To convey this content, the eight key European skills of lifelong learning are taken into consideration which, with different educational methodologies and for different age groups, are touched upon in a timely manner, thus specifically stimulating the learning objectives of the disciplines. This characterizes the ShowRoom activities in an interdisciplinary manner so as to make them a natural support for the Civic Education carried out in schools and dedicated to Sustainability. The events for citizens - such as the Caffè Ambiente which combine the structure of talk shows with an informal context - and the refresher courses for teachers follow these lines and move with external collaborations of learning psychologists, researchers and representatives of civil society.

### **Bologna Innovation Ecosystem**

The Bologna Innovation Ecosystem event (23 March 2023), organized by the Foundation for Urban Innovation-Rusconi-Villa Ghigi as part of the European project Cities 4.0<sup>17</sup>, had the aim of creating new opportunities and synergies between entities that operate and carry out acceleration, research and innovation in the buildings sector and in general of the built environment in the city of Bologna, to bring out barriers and opportunities in the sector with respect to the challenge of climate neutrality.

The CITIES 4.0 project - Climate Innovation Through Interactive Ecosystem Summit - is a project funded by the European Union that brings together partners from 4 European cities participating in the Mission: Brainport Eindhoven, Ecosystem Thinking Institute, Red Blue Jay (Eindhoven, Netherlands), Turku Science Park (Turku, Finland), Leuven Mindgate (Leuven, Belgium) and Fondazione per l'Innovazione Urbana-Rusconi-Villa Ghigi (Bologna, Italy). It started in September 2022 and will end in 2024, with the aim of creating new synergies between the innovation ecosystems of the four cities participating in the Mission, in order to achieve climate neutrality by 2030.

Following this event, the main challenges common to the 4 cities were identified and a call was launched to receive solutions that contribute to the climate neutrality of buildings and city mobility. Furthermore, a publication was created with a collection of Good Practices in the four innovation ecosystems.

<sup>16</sup> <https://www.comune.bologna.it/servizi-informazioni/showroom-energia-ambiente>

<sup>17</sup> <http://www.fondazioneinnovazioneurbana.it/progetto/cities4>



### Participatory budgeting

Participatory budgeting is a direct democracy tool that enables citizens to report, devise, vote and co-design proposals for their neighbourhood. The most voted projects and ideas are then financed and implemented. The Fondazione per l'Innovazione Urbana-Rusconi-Villa Ghigi in close collaboration with the Municipality of Bologna and the Districts, coordinated the 2023 edition of the Participatory Budget, which paid particular attention to the themes of sustainability and the Mission: the projects in 2023 were in fact developed taking into consideration the objectives of the Mission and any climate impacts as definition and selection criteria. Furthermore, for this edition the Municipality of Bologna has increased the resources made available for the selected projects: 500,000 euros for each neighbourhood, for a total of 3 million euros. Citizens were called to conceive and propose integrated projects that included both physical redevelopment interventions of public spaces (for example: furnishings, equipment, public works in streets, squares, public buildings, parks, gardens, etc.) and activities, actions, initiatives that can accompany and strengthen the transformation of public spaces (for example: cultural, sporting, social, educational, recreational activities, etc.). Together with the Districts and the Foundation, starting from September 2023 the proposing groups were involved in some co-planning meetings to develop, in a shared and transversal way at all levels, methods and tools to be introduced to carry out the first activities to be carried out until December, thanks to a first tranche of funding of 30,000 euros for each District. Through some collaboration agreements stipulated with the proposing groups, in particular preparatory activities for subsequent co-planning and the first "intangible actions", i.e. cultural, sporting, social, educational, recreational, etc., initiatives promoted with the aim of accompanying the implementation phase of the six winning projects for the physical transformation of public spaces, involving the various communities in the area.

### Working Group for the Quality of Buildings

The Working Group for the Quality of Buildings for a city with zero climate impact is a space for discussion active between the Administration and representatives of professionals and the local economy. It is open to all local organisations representing professional orders and colleges and associations and economic categories in the sector, upon sending an expression of interest to the Administration. Each member organisation identifies a permanent member and a delegate who represents it in plenary sessions. The Forum operates mainly through Technical Working Groups, with predefined mandate and duration, which develop proposals to be discussed and validated in plenary sessions. At the end of the process in September 2022, 3 proposals for actions were defined to address climate neutrality in the built environment. The proposals concern the collection of data useful for developing data-based solutions, the development of innovative technical solutions and governance innovation. One of the research questions that emerged from the Forum was followed up in one of the case studies of the digital twin project of the Municipality of Bologna, i.e. the analysis of the energy response of buildings, in particular of the historic centre, in order to support assessments through models predictive, to guide plans and regulations in order to support the objectives of the Climate Mission.

Chiara.eco: <https://www.chiara.eco/>

The Chiara.eco website was born from the need to spread knowledge of the ecological and climate crisis, to act to address it and to collaborate to activate new and concrete processes of change. It does this through three main sections, navigable from the Homepage:

- Know where the data is explained and the challenges to be faced are told;
- Act, which offers a constantly updated overview of the resources deployed to combat the ecological and environmental crisis and launches a call to collective action as a fundamental element to activate the transition;
- Collaborate, where the actions and experiences that are emerging in Bologna and the surrounding area are described and which provide inspiration for the activation of new experiences.



Furthermore, on the homepage it is possible to consult the "Che Aria è" widget, the application, developed within the Aria Laboratory, which allows you to receive information every day on the quality of the air in Bologna and on the small and large actions to be introduced to improve it. Chiara.eco is full of constantly updated content: in-depth articles written by scientists and experts, interviews, videos, posts and infographics explain the ecological and climate crisis through local data, routes and projects but with a global perspective. It is a network that becomes inspiration for collective action. It is a way of describing the city of Bologna through its desire to collaborate to implement the right transition towards a future that is sustainable and leaves no one behind. The project is coordinated by Fondazione Innovazione Urbana-Rusconi-Villa Ghigi and promoted by the Municipality of Bologna. The website is designed and managed by Formicablu, which also supports the Foundation in defining the contents and editorial strategy.

**The new "Bologna Missione Clima" website: [www.bolognamissioneclima.it](http://www.bolognamissioneclima.it)**

The site coordinated by the Municipality of Bologna and the Fondazione Innovazione Urbana-Rusconi-Villa Ghigi aims to be an information container of the initiatives and actions regarding the Mission carried out in the city by institutions, citizens, companies and bodies of the third sector. Furthermore, the site will also integrate the Chiara.eco portal both with the articles and news already published and with the new content planned. The online portal will therefore allow the Mission's path to be disseminated and communicated to interested parties and will guarantee visibility to all the organized entities and informal groups that will work to make a real contribution to the reduction of climate-altering gas emissions in the city.

#### **The PHOENIX project and the Neighbourhood Houses**

The European project PHOENIX (The rise of citizens voices for a Greener Europe, 1 February 2022 - 31 July 2025), financed by the European Union in the Horizon 2020 program, aims to study, enrich and test participatory and deliberative practices that work on contemporary environmental challenges. PHOENIX will test democratic innovations in eleven pilot territories, including the city of Bologna, and create a Territorial Co-Design Commission in each pilot territory. The task of this Commission is to design and lead a participatory process that engages the local community with the aim of involving people in the debate, creation and improvement of environmental policies. The Municipality of Bologna in collaboration with the Fondazione Innovazione Urbana-Rusconi-Villa Ghigi and with the methodological support of the project partner University of Florence, activated the Territorial Commission in November 2023, composed of representatives of the Municipality, of the Neighbourhood Houses, of the Foundation and by 6 members of the Citizen Assembly, who will thus contribute to identifying projects, approaches or alliances useful for the implementation of the path. The focus of the experimentation in Bologna will be the planning of actions in the Neighbourhood Houses in order to bring citizens closer to the Mission and activate more widespread forms of support, training and awareness on the climate issue in the area.

#### **H2020 FAST TRACK – Fostering the Acceleration of Sustainable Transport To Regions and Authorities Through Capacity and Knowledge (01/02/2021 - 31/07/2023)**

The project, financed by the program HORIZON 2020 - Smart, green and integrated transport (H2020-2018-2020) is coordinated by ICLEI Europe (Local Governments for Sustainability); 24 European cities participate in the project, including the Municipality of Bologna, Eurocities and 4 research institutions and has the aim of creating a thematic community of mutual learning to transfer innovations in the field of sustainable mobility. Among the exchange and training activities, the 5 "FastTrack Capacity Building Weeks", the weeks organized by each ambassador city (also Bologna together with Antwerp, Stockholm, Budapest) during which exchanges of best practices were carried out to show the "follower" cities the innovations implemented by leaders, such as Bologna, which focused its intervention on SUMP and Traffic management. One of the topics explored in detail for Bologna was that of the creation of a Maas and related dynamics linked to the networking of data in a user-friendly format.



**H2020 ENLIGHTENme - Innovative policies for improving citizens' health and wellbeing addressing indoor and outdoor lighting (01/03/2021 - 28/02/2025)**

Funded by the H2020 program and coordinated by the University of Bologna, the project acts on the two fronts of external public lighting and indoor lighting, to study the connections between lighting and health. For the Municipality of Bologna, involved as a project partner, the research is carried out through a lighting intervention to replace the lighting fixtures, co-designed with the residents of the pilot area (Piazza Lambrakis, Savena district), and clinical studies on the population, conducted by ASL (the Local Health Agency). The project will therefore empirically evaluate the impact of lighting (external and internal) on the well-being and health of citizens in the identified pilot area. This will also allow the production of guidelines for the benefit of the city and political decision-makers, as well as technicians for the design of urban spaces.

**#ClimateOfChange: End Climate Change, Start Climate of Change (01/2020 - 05/2023)**

Funded by the DEAR (Development, Education and Awareness Raising) program and coordinated by WeWorld, the #ClimateOfChange project aims to inform and raise awareness among young European generations about climate change and its consequences, including migrations produced by extreme meteorological phenomena caused by human activities. In addition to increasing awareness on the topic, the project aims to promote responsible and conscious lifestyles and consumption, aimed at sustainability and solidarity. Bologna, Vienna, Brussels and Nicosia are the four partner cities that organised TEDx conferences in 2022 as part of the project. The Municipality of Bologna also carried out workshops in schools on the topic and activated a call for tenders in 2021 aimed at youth associations for awareness and communication (Environmental Justice Call), through which to support communication and awareness-raising activities and projects on environmental justice issues relating to climate change, through the involvement of both associations made up of young people and third sector bodies and associations whose actions are aimed at new generations. The Municipality also coordinated the project action which included meetings with policy makers and decision makers, both at a local, national and European level.

**LIFE PrepAir - Po Regions engaged to policies of Air (1/2/2017 - 31/1/2024)**

Funded by the LIFE Program (Integrated Projects) and coordinated by the Emilia-Romagna Region, the project aims to improve air quality in the Po Valley area and in Slovenia, through awareness-raising actions and coordinated actions in the main sectors responsible for polluting emissions (biomass combustion, transport of goods and passengers, domestic heating, industry, energy production and agriculture). At a national level, the Project will contribute to ensuring compliance with the concentration limit values established by community and national legislation. The objectives of the project are to implement the measures included in the Air Quality Plans (AQP) and in the Po Valley agreement; strengthen coordination between the authorities of the Po basin in the field of air quality; raise awareness among citizens and socio-economic actors; create a lasting network between national, regional and local governments, socio-economic actors, research centres and all other interested parties. Given the close link between air quality and climate change, the project is relevant from several points of view for the Municipality of Bologna, project partner, actively involved in various topics: one of the thematic pillars of the PrepAIR project concerns sustainable mobility and provides for the implementation of actions to promote the use of bicycles and, more generally, sustainable mobility. As part of the action line on energy efficiency, it was achieved the public buildings infopoint<sup>18</sup>: a portal dedicated to public officials where information is made available on the technical, economic, financial and management tools to support energy requalification projects of public buildings. Furthermore, the Municipality of Bologna, within working groups, collaborated on the transversal theme of information and training, to create online courses, workshops and manuals on the minimum environmental criteria (Cam), construction, lighting, urban greenery, intended for public administrations and professionals working in the sector. As part of the C17 project action, the

<sup>18</sup> <https://info.lifeprepareu>



Municipality of Bologna also created four Focus Groups to understand the problems relating to the energy efficiency of school buildings, which saw the participation of all the subjects involved in the process (municipal technicians, orders professionals, research centres, companies). The aim was to provide useful information to increase the ability of public administrations to build tools with which to maximise energy savings and minimise air pollution, achieving the in-depth energy qualification of school buildings towards achieving the "near Zero Energy Building" requirements (nZEB): high efficiency buildings in which the very low or almost zero energy requirement is covered to a significant extent by energy from renewable sources, produced on site. To spread greater awareness on the topic within schools, the action also proposed a training module dedicated to the school community to be included in the institutes' training plans and which is implemented experimentally in the 2022-2023 school year through the Energy ShowRoom and Ambiente, the Center for ecological transition education of the City of Bologna.

#### **LIFE CLIVUT - Climate Value of Urban Trees (1/9/2019 – 31/8/2023)**

Funded by the LIFE 2018 Climate Governance and Information program and coordinated by the University of Perugia, the project aimed to enhance and raise awareness of the potential of urban trees in terms of mitigating the effects of climate change. The Municipality of Bologna, partner of the project, carried out various activities including:

- calculation of the ecosystem benefits of 10 significant urban green areas, in particular in terms of CO<sub>2</sub> capture;
- setting up 3 monitoring areas where the behaviour of the plants can be observed (behavioural monitoring areas); the observations returned data on the alterations that the plants register based on climate changes in the city area;
- entering data into a web platform designed to record census data and plant observations;
- development of the capabilities of urban planners for the management of urban greenery, through a training course "Urban greenery and climate change: design and management criteria for urban forests for the adaptation and mitigation of climate change";
- citizen involvement through thematic walks in parks to show the ecosystem function of green assets in the urban environment and their role in mitigating the effects of climate change; theoretical-practical training days on how to carry out the census and use the webapp and on the correct management and maintenance of trees;
- involvement of companies through workshops and two calls for tenders dedicated to companies, one to promote the census of trees in private areas and evaluate the willingness to plant new trees and the second to identify events to be held in the municipal area which, on an experimental basis, propose to compensate its own CO<sub>2</sub> emissions through a proposal to plant new trees in public municipal areas, with related maintenance for the first three years;
- creation of a green strategy for the urban climate (ref. Module A-2)

#### **D-SPINER – Digital Source of Power in Emilia-Romagna (15/3/2023 – 14/3/2025)**

Selected by IFAB through the "Call for Projects 2022" and part of the larger digital twin project of the city of Bologna, the project, coordinated by the University of Bologna, aims to create an intelligent digital platform for the optimization of energy resources in a building. Specifically, the experimentation focuses on a specific building in the city of Bologna, the Lazzaretto, one of the University's headquarters: starting from the data on energy consumption recorded by special sensors positioned in the building, "D-SPINER" will create a "digital twin" capable of predicting consumption and optimising energy production and distribution, through the use of HPC (High Performance Computing) technologies and specifically Machine Learning. The implementation of the project opens up numerous opportunities, both for public administrations and private individuals. In the first instance, the building featured in "D-SPINER" will be able to set up energy efficiency strategies useful for reducing electricity production and consumption costs. But in general, the potential of "D-SPINER" extends to the entire urban context, if replicated in other buildings, other neighbourhoods or even to companies and production sites. In this sense, the project represents a model of technological



innovation, capable of revolutionising energy production, consumption and optimization strategies within cities.

**Horizon REALLOCATE - Rethinking the design of streets And public spaces to Leverage the mOdal shift to Climate-friendly Active Transport Everywhere** (May 2023 - April 2027)

Funded by the Horizon Europe Program (2021-2027) call HORIZON-MISS-2022-CIT-01 (Research and Innovation actions for support the implementation of the Climate neutral and Smart Cities Mission) and coordinated by University College of Dublin, the REALLOCATE project involves 37 European bodies and aims to support cities in their transition towards climate neutrality. The project aims to pioneer a safe and climate-neutral mobility system (SCNM Safe Climate-Neutral Mobility System) that helps cities accelerate their transition towards climate neutrality by promoting zero-emission mobility, shared, sustainable, person-centred and inclusive. The new concept of Safe and Sustainable Mobility Laboratory (SSML), which REALLOCATE intends to test, expands the Living Lab concept to a targeted vision of road safety and sustainable mobility. The SSMLs aim to provide cities with a reference framework to co-design and co-develop technologies and interventions to promote modal shift towards sustainable urban mobility modes, taking advantage of the SCNM system, implemented to solve problems present in 15 areas urban/periurban unsafe at European level. REALLOCATE will develop SSML in 5 lead cities and 5 sister cities, all part of the EU 100 Climate-Neutral & Smart Cities mission. The Safe and Sustainable Mobility Laboratory (SSML) implemented in the Bologna area will be tested on the north-east axis of Bologna (Road of Knowledge) and will concern the redesign of a school area with street furniture interventions and new technologies in order to make the safer access to school for all users and to reduce CO<sub>2</sub> consumption, promoting active mobility. Nudging solutions will also be tested in all pilot cities, i.e. communication tools to push for a change in behaviour with respect to the use of cycle-pedestrianism.

### 5.3 Module C-3 Financing the portfolio

Table C-3.1, as in the last NZC template of the Action Plan, has been removed, as the investment values will be presented within the Investment Plan.



## 6 Outlook and next steps

### Plans for next CCC and CCC Action Plan iteration

Today the CCC and the Action and Investment Plans connected to it represent the latest evolution of a path to reduce GhG emissions that Bologna has formally undertaken since 2007 and thanks to which the city's per capita emissions of CO<sub>2</sub> have decreased from more than 6 tons/year in 2005 to the current 4 tons/year.

The CCC and the plans connected to it must be considered dynamic, iterative and continuously updated; it is in fact probable that in the coming years there will be an acceleration of changes in the scenario which could have a significant influence on what is currently defined; for example due to changed geopolitical contexts or particularly high-performance regulatory or technological innovations, linked to energy issues or artificial intelligence developments that are difficult to predict over a multi-year time horizon.

At a local level, for example, it is plausible that the pilot project of Digital Twin - a platform that will allow the collection, analysis and correlation of data and knowledge from the city and citizens' behaviours to activate analysis mechanisms and forecasting studies also on emissions, climate and energy - can lead to the definition of alternative and/or supplementary policies, strategies, actions and investments compared to what is currently envisaged. At the national level, on the other hand, important regulatory innovations are expected on topics such as areas suitable for installing renewable energy production plants, on innovative agrivoltaics and, hopefully, a national Climate Law and a Consolidated Law on Energy; all policies that could concretely change the perspectives related to the national energy transition and, consequently, also to the emission budgets of cities.

A process of continuous evolution of the CCC and the Action and Investment Plans is therefore envisaged, starting from the following activities:

- monitoring of the design and implementation phase of the actions included in the Plan;
- definition of any corrective actions to maintain the set objective;
- construction of a platform for sharing best practices, actions and projects implemented;
- expansion of the partners/Stakeholder's base and consequently of actions useful for the objective of climate neutrality by 2030;
- strengthening of the climate culture within the Municipality of Bologna, also by expanding and structuring from an organizational point of view the Transition Team specifically established for the Mission;
- integration between the CCC and the planning documents of the Municipality of Bologna - starting from the Single Programming Document (DUP) - in reference to the contents and indicators of the Action Plan. This will be particularly effective if we consider that these tools have a three-year validity but that every year they are updated and monitored through specific indicators - which at least in part must reflect those of the Action Plan.

This continuous work of implementation and expansion of actions and investments, as well as internal reorganization and integration of the CCC and its actions into the programming and planning tools of the Municipality of Bologna, subjected to periodic updating and monitoring, represent that concrete and pragmatic approach through which the Municipality of Bologna intends to engage for the entire time period that separates the city from the actual achievement of climate neutrality.



## 7 Annexes

Annex 1 – Bologna Citizens’ Assembly for Climate: Resolution of the City Council, Final Report and Recommendations and proposals of the Citizens’ Assembly

Annex 2 - Impact pathways

Annex 3 - Table B-2.1: Description of portfolio actions

Annex 4 - Table B-2.2. d: List of supporters of Bologna Missione Clima

Annex 5 - Listening and alignment process for the definition of a shared vision for achieving climate neutrality

Attachment 6 - Bologna Missione Clima- Visual Identity and Coordinated Image





## **Annex 1**

# **Bologna Citizens' Assembly for Climate: Resolution of the City Council, Final Report and Recommendations and proposals of the Citizens' Assembly**

*Direzione Generale*

Proposta N.: **DC/PRO/2024/13**

**OGGETTO: VALUTAZIONE DELLE PROPOSTE E RACCOMANDAZIONI SCATURITE DALLA ASSEMBLEA CITTADINA PER IL CLIMA INDETTA AI SENSI CAPO III DEL REGOLAMENTO SUI DIRITTI DI PARTECIPAZIONE ED INFORMAZIONE DEI CITTADINI ED INDIRIZZO ALLA GIUNTA**

La Giunta propone al Consiglio la seguente deliberazione

**IL CONSIGLIO**

PREMESSO che:

- con deliberazione di Consiglio Comunale DC/PRO/2022/118, PG n. 838415/2022, seduta del 19/12/2022 è stata indetta, ai sensi del Capo III del Regolamento per i diritti di partecipazione e informazione dei cittadini e su proposta della maggioranza assoluta dei Consiglieri (P.G. 813025/2022 del 6/12/2022) l'Assemblea cittadina per il clima, stabilendone finalità, oggetto, durata e modalità di funzionamento;

- i Consiglieri proponenti, tenuto conto dell'impegno della città verso la neutralità climatica al 2030 assunto con la Missione Clima, che impone cambi significativi nei modelli di produzione e consumo di energia, hanno dato mandato all'Assemblea di esprimersi sui seguenti quesiti:

*1. Mitigazione: come promuovere una transizione energetica della città a partire dai settori ad emissioni climalteranti più impattanti, al contempo garantendo il principio di equità e giustizia climatica e contrastando i fenomeni di povertà e marginalizzazione?*

*2. Adattamento: parallelamente alla riduzione di emissioni, come le istituzioni e i cittadini possono affrontare e contenere i principali rischi climatici della città (isole di calore, eventi meteorologici estremi, alluvioni, siccità, ecc.)?*

*3. Strumenti amministrativi: quali sono eventuali ostacoli riscontrati nelle norme, servizi e regolamenti di competenza comunale al raggiungimento degli obiettivi suddetti? E possibili miglioramenti e innovazioni che si potrebbero apportare?;*

- con successiva deliberazione di Consiglio Comunale DC/PRO/2023/13, PG n. 127939/2023 sono stati nominati i Comitati di Supporto e Garanzia e determinato il gettone di presenza per la partecipazione alle riunioni di Assemblea;

- con deliberazione di Giunta Comunale DG/PRO/2023/68, PG n. 114501/2023 è stato infine nominato il Comitato di Coordinamento che per il citato Regolamento ha, tra gli altri, compiti di progettazione, organizzazione, selezione dei partecipanti;

DATO ATTO che:

- il Comune ha effettuato l'estrazione con campionamento casuale stratificato di 880 residenti, distribuiti in 57 gruppi secondo il quartiere, il genere, cittadinanza (italiani/non italiani) e classi d'età, su tutte le cittadine ed i cittadini, che abbiano compiuto 16 anni di età, utilizzando a questo scopo in via principale i/le residenti iscritti/e alle liste elettorali per le elezioni comunali, integrate con le classi di età dei/delle sedicenni e diciassettenni;

- al suddetto elenco si sono aggiunti i titolari e sostituti selezionati dalle banche date degli iscritti (non residenti a Bologna) dell'Alma Mater Università di Bologna e degli abbonati Tper (non residenti a Bologna) per un totale di 20 ulteriori membri "city user", raggiungendo così i 100 partecipanti previsti dalla delibera di indizione.

ATTESO che:

- i lavori della assemblea si sono svolti tra fine maggio ed inizio novembre 2023, in nove incontri della durata di circa quattro ore ciascuno e documentando le varie fasi con tempestiva pubblicazione su internet nella sezione:

- Evento informativo iniziale, prima dell'avvio formale;
  - Fase di informazione e formazione (due incontri);
  - Fase di ascolto e confronto (due incontri);
  - Approfondimento a partecipazione volontaria durante la fase di sospensione estiva dei lavori;
  - Fase deliberativa (quattro incontri, con suddivisione dei partecipanti in tre tavoli di lavoro tematici);
  - Fase di decisione finale (nono incontro della durata di circa 4 ore, aggiunto al percorso su decisione della stessa Assemblea, conformemente alla delibera di indizione che indicava questa possibilità);
- tutti gli incontri sono stati supportati dalla Fondazione per l'Innovazione Urbana e da facilitatori, come più puntualmente descritto nel Report parte integrante della presente deliberazione;

DATO ATTO che:

- il percorso ha avuto un alto grado di risposta in termini di adesioni, in quanto 88 membri hanno terminato il percorso, 7 membri sono decaduti ai sensi del Regolamento per aver fatto più di due assenze consecutive, 5 membri hanno rinunciato dopo il secondo incontro e pertanto non è stata possibile la sostituzione;

- parimenti risulta elevato il tasso di partecipazione ai singoli incontri, in quanto si è quasi sempre attestato attorno all'80% di presenze, con picchi del 90% nei primi tre incontri e nell'ottavo;

- conformemente all'articolo 52 comma 2 del Regolamento, l'approvazione delle proposte finali è avvenuta con il metodo del consenso, inteso come processo decisionale collaborativo che integra nella decisione anche le posizioni minoritarie, e pertanto, esclusivamente per proposte o parti di esse che non trovavano un consenso unanime, si è proceduto a votazione secondo la quale sono approvate le proposte che abbiano conseguito almeno i 2/3 dei componenti ai sensi dell'articolo 54 comma 5 del Regolamento;

- in particolare sono state sottoposte a votazione con maggioranza qualificata 12 proposte, o proposte di azione, come puntualmente descritto nel Report parte integrante del presente provvedimento che reca anche i puntuali esiti delle votazioni.

DATO INFINE ATTO che:

- l'Assemblea, prima del termine dei lavori, ha eletto come previsto all'articolo 49 comma 5 del Regolamento il Comitato di monitoraggio composto da cittadine e cittadini stessi partecipanti;

- si sono tenute due sedute istruttorie presso le Commissioni consiliari competenti in materia, alla presenza anche della Vicesindaca e di membri della Giunta comunale e più precisamente il 19 gennaio e 2 febbraio u.s., nelle quali il Comitato di monitoraggio ha illustrato i contenuti del Documento recante le Proposte e raccomandazioni ed i consiglieri comunali hanno potuto porre quesiti o considerazioni nella fase istruttoria così da poter formulare la presente valutazione prevista all'art. 55 del Regolamento;

VISTO QUANTO PRECEDE:

- le valutazioni di cui all'art. 55 comma a) del Regolamento vengono espresse sulle Raccomandazioni, declinate in singole Proposte che vengono qui riportate in sintesi, facendo quindi riferimento, per la loro integrale lettura al documento parte integrante della presente deliberazione:

- Raccomandazione 1. Bologna neutrale è la nostra casa sostenibile
- Raccomandazione 2. Bologna neutrale è una grande comunità di condivisione di energie rinnovabili
- Raccomandazione 3. Bologna neutrale è più verde e più blu
- Raccomandazione 4. Bologna neutrale è il tuo modello di vita da coltivare
- Raccomandazione 5. Bologna neutrale è una città che riorganizza i propri spazi per la mobilità sostenibile
- Raccomandazione 6. Bologna neutrale è in movimento collettivo ed ecosostenibile;

- sono state accuratamente valutate nelle suddette sedute istruttorie e con successivo confronto anche con i Consiglieri proponenti, come segue:

per quanto riguarda gli obiettivi generali:

- la lettura delle Raccomandazioni e Proposte fa emergere una condivisione di valori e coerenza generale con il programma del mandato amministrativo e con il Documento Unico di Programmazione 2024 – 2026 ed in particolare, rispetto ai temi sottoposti alla discussione dei cittadini come indicati nelle premesse, con il percorso di Bologna Missione Clima, verso la neutralità climatica al 2030 quale cornice entro la quale orientare tutte le azioni dell'Amministrazione, col progetto strategico Impronta Verde che mette in relazione le reti della nuova mobilità alla dotazione di verde, servizi e spazi pubblici della città per offrire servizi fruibili in pochi minuti a piedi o in bicicletta, e con la qualità ambientale propria di un luogo effettivamente abitabile e salubre, dotata di un buon livello di servizi e spazi verdi; con gli strumenti Piano Urbanistico Generale PUG ed il Regolamento edilizio RE approvati nel 2021 oltre alla variante PUG+, recentemente assunta dalla Giunta e tutt'ora in iter per l'adozione e con il PUMS (Piano urbano per la mobilità sostenibile);
- in particolare si apprezza e condivide la sollecitazione da parte dell'Assemblea di agire in modo trasversale ed integrato sulle necessità di sensibilizzazione, formazione, informazione e supporto alla cittadinanza e ad altri attori chiave verso la neutralità climatica, anche attraverso nuovi canali, strumenti e figure che valorizzino ed amplifichino quanto già in essere e si riconosce la necessità di definire una strategia di azione complessiva e coordinata su queste tematiche e si riconosce altresì il richiamo ai principi di giustizia climatica ed equità sociale per evitare che i costi della transizione e le conseguenze dei cambiamenti climatici acuiscano condizioni di fragilità;

e più in particolare, in ottemperanza all'articolo 55 comma 3 del Regolamento che prescrive una puntuale disamina delle proposte:

- per quanto riguarda la *Proposta 1.a della Raccomandazione 1 – Promuovere campagne di sensibilizzazione e aumentare la consapevolezza*, si valuta di accoglierla integralmente, in quanto pienamente coerente con le politiche promosse dall'Amministrazione comunale e di rinnovata importanza nell'agenda politica e amministrativa dell'ente grazie alla sollecitazione dell'Assemblea; di particolare interesse la attivazione di percorsi formativi per figure esperte in riqualificazione energetica o rivolte agli/alle amministratori/trici di condominio per aumentare la consapevolezza nei condomini;

- per quanto riguarda la *Proposta 1.b. della Raccomandazione 1 – Promuovere la collaborazione attiva tra pubblico e privato per la riqualificazione del patrimonio edilizio*, si valuta, pur nella piena condivisione degli obiettivi sottesi alle azioni proposte, di accoglierla in parte; in particolare occorrono approfondimenti sulla proposta di “Attivazione di fondi di garanzia comunale per consentire interventi di efficientamento anche alle persone con minori disponibilità finanziarie” in quanto l’attivazione di specifici fondi o incentivi a carico del Comune dipende necessariamente dalle effettive risorse disponibili e nel bilancio triennale; così come sulla proposta per l’“Introduzione di una forma di patto per la riqualificazione fra pubblico e privato” che richiede l’implementazione di meccanismi giuridici, contrattuali ed economici, anche connessi al “libero mercato” ed alla terzietà che deve mantenere il Comune, che necessitano di approfondimenti specialistici;

- per quanto riguarda la *Proposta 1.c. della Raccomandazione 1- Individuare forme di incentivo e sostegno*, si valuta di accoglierla in parte, con particolare riferimento a meccanismi premianti dei comportamenti virtuosi attraverso sconti ed agevolazioni nell’uso dei servizi, mentre si esprimono riserve sulla attivazione di specifici incentivi economici a carico del Comune, o sgravi fiscali, che va ponderata a seconda delle risorse disponibili nel bilancio triennale; per quanto attiene gli incentivi volumetrici, nel PUG essi sono stati indirizzati verso la riqualificazione sismica e l’accessibilità, piuttosto che sulla riqualificazione energetica, riguardo alla quale, per le nuove costruzioni, sono già richieste prestazioni d'eccellenza;

- per quanto riguarda la *Proposta 1.d. della Raccomandazione 1- Promuovere gli edifici a impatto zero*, si reputa coerente con gli strumenti regolamentari edilizi vigenti rispetto ai requisiti e alle prestazioni energetiche richieste e di rinnovata importanza nell’agenda politica e amministrativa dell’ente grazie alla sollecitazione dell’Assemblea Cittadina e per questo si valuta di accoglierla, pur non potendo, per competenza normativa, estendere l’obbligo di utilizzo di determinate tecnologie, impianti o corpi illuminanti specifici, al di fuori di un intervento edilizio sull’immobile; è pienamente condivisibile una azione di sensibilizzazione, così come interventi ordinatori, già in essere sul corretto uso del raffrescamento e riscaldamento degli esercizi commerciali;

- per quanto riguarda la *Proposta 2.a. della Raccomandazione 2 – Sostenere la ricerca per promuovere la produzione di energia da fonti rinnovabili in modo più efficiente, diversificato e con minori impatti*, si valuta di accoglierla per quanto attiene il sostegno alla ricerca e sperimentazione in termini di facilitazione e dialogo tra soggetti ed istituzioni; rispetto alla revisione in senso meno restrittivo dei vincoli o tutele sul patrimonio edilizio, il tema è affrontato nella variante al Piano Urbanistico Generale e costituisce l’oggetto di costanti confronti con la Soprintendenza per quanto riguarda gli edifici di interesse storico, ora rafforzati anche dalle sollecitazioni derivanti dalle proposte della Assemblea;

- per quanto riguarda la *Proposta 2.b. della Raccomandazione 2 – Promuovere la nascita di Comunità Energetiche Rinnovabili e di altre forme di condivisione della produzione di energia da fonti rinnovabili e lo smaltimento degli impianti dismessi*, si valuta di accoglierla per quanto riguarda le iniziative del Comune per promuovere sul territorio una produzione diffusa di energia da fonti rinnovabili e l’attivazione di forme di condivisione dell’energia prodotta nei vari modelli ipotizzati dalle normative vigenti: autoconsumo individuale di energia rinnovabile a distanza, autoconsumo collettivo da fonti rinnovabili, comunità energetiche rinnovabili (CER) o configurazioni di autoconsumo per la condivisione dell’energia rinnovabile (CACER); si esprimono invece riserve per quanto riguarda gli incentivi alle aziende in quanto l’azione dipende dalle risorse effettivamente disponibili nel bilancio triennale.

- per quanto riguarda la *Proposta 2.c. della Raccomandazione 2 - Rendere le persone più consapevoli e responsabili*, si reputa coerente con gli strumenti di programmazione e di rinnovata importanza nell’agenda politica e amministrativa dell’ente grazie alla sollecitazione dell’Assemblea Cittadina e per questo si valuta di accoglierla, anche ampliando il raggio d’azione dello Sportello Energia, attivando nuovi percorsi di educazione ambientale ed

iniziative di sensibilizzazione della cittadinanza per l'adozione di comportamenti virtuosi e sostenibili; per quanto attiene un supporto economico a carico dell'Amministrazione comunale nell'acquisto di dispositivi più efficienti energeticamente, l'azione va ponderata invece in ragione delle risorse disponibili;

- per quanto riguarda la *Proposta 2.d. della Raccomandazione 2 - Rendere i processi di transizione ecologica più semplici, si valuta di accoglierla* nella piena condivisione dell'obiettivo di semplificazione, rafforzando il ruolo dello Sportello Energia comunale, tenendo conto però che il percorso autorizzativo - ma anche giuridico- amministrativo e finanziario - per la creazione di forme di condivisione tra privati o aziende, non è ancora del tutto chiarito e compiuto nei livelli normativi sovraordinati, verso i quali l'Amministrazione rafforzerà il proprio ruolo proattivo e di costante confronto facendosi anche portavoce dell'istanza presentata dall'Assemblea;

- per quanto riguarda la *Proposta 3.a. della Raccomandazione 3 - Naturalizzare la città e rendere permeabili i suoli urbani*, si reputa coerente con gli obiettivi del progetto bandiera Impronta Verde e con gli strumenti di programmazione vigenti, ma di rinnovata importanza nell'agenda politica e amministrativa dell'ente grazie alla sollecitazione dell'Assemblea Cittadina; per quanto attiene la realizzazione di ulteriori micro aree verdi o allestimenti a verde in ambito urbano deve essere valutata in considerazione della fattibilità tecnica ed economica in relazione alle risorse disponibili in sede di bilancio;

- per quanto riguarda la *Proposta 3.b. della Raccomandazione 3 - Studiare, monitorare e tutelare i corpi idrici per la prevenzione del rischio idrogeologico*, si valuta di accogliere la proposta per quanto riguarda l'attenzione costante al tema degli eventi alluvionali, sia in termini preventivi con la corretta pianificazione e definizione di requisiti degli interventi edilizi, sia in termini di monitoraggio, stimolando e sensibilizzando anche i soggetti competenti, esterni all'Amministrazione, a mantenere un presidio costante ed efficace sugli interventi da realizzare, continuando a sostenere la Task Force sul dissesto idrogeologico istituita dal Sindaco Metropolitano;

- per quanto riguarda la *Proposta 3.c. della Raccomandazione 3 - Formare e informare la cittadinanza a partire dalle scuole*, si valuta di accogliere pienamente tutte le iniziative di sensibilizzazione attiva, obiettivo pienamente condiviso come prioritario dall'Amministrazione, attraverso le iniziative della Show room Energia e Ambiente, rafforzando le attività già intraprese per aumentare la consapevolezza in tutte le fasce d'età;

- per quanto riguarda la *Proposta 3.d. della Raccomandazione 3 - Promuovere la collaborazione tra esperti ed esperte, la cittadinanza e l'Amministrazione*, si valuta di accogliere la promozione dei contratti di fiume, già tra gli obiettivi dell'Amministrazione, rafforzando la comunicazione e il coinvolgimento della cittadinanza tramite un portale per la raccolta e diffusione di iniziative e informazioni;

- per quanto riguarda la *Proposta 4.a. della Raccomandazione 4 - Rendere Bologna la città con più mercati di produzione locale in Italia*, si valuta, nella piena condivisione degli obiettivi per sostenere e diffondere i mercati rionali, quali i diversi già attivi in città, anche con ulteriore disponibilità di spazi ed aree pubbliche con valorizzazione della produzione locale, di accogliere le proposte, ad esclusione della "limitazione della concessione di licenze per la grande distribuzione e le catene" per la quale si esprimono riserve, in quanto la complessa normativa sovraordinata, ha introdotto forme di liberalizzazione che lasciano ai comuni minori margini di intervento ed esclusivamente per valutazioni di natura urbanistica e non "soggettiva" o per tipologia di esercizio, inoltre in un contesto in cui l'insediamento di nuove strutture segue criteri disciplinati da fonti normative sovraordinate, il PUG già prevede limitazioni ed esclusioni all'insediamento di diverse tipologie di strutture commerciali rispetto ai differenti tessuti urbani;

- per quanto riguarda la *Proposta 4.b. della Raccomandazione 4 - Promuovere l'autoproduzione*

*agricola*, esprime piena condivisione e si valuta di accoglierla successivamente alla puntuale verifica della disponibilità di aree pubbliche e delle risorse necessarie per la progettazione e realizzazione;

- per quanto riguarda la *Proposta 4.c. della Raccomandazione 4 – Realizzare attività di sensibilizzazione e di educazione ambientale sull'agricoltura urbana e sull'alimentazione*, si valuta nella piena condivisione degli obiettivi e delle azioni, già intraprese in alcuni orti scolastici, di accogliere integralmente rispetto alla sensibilizzazione e coinvolgimento dei vari attori per l'educazione alla agricoltura urbana e alimentazione sana; per quanto attiene gli incentivi economici pubblici alle aziende, si richiama la necessità di verifica delle risorse disponibili in sede di bilancio;

- per quanto riguarda la *Proposta 4.d. della Raccomandazione 4 – Ridurre i rifiuti e trasformare i rifiuti rimanenti in risorsa*, si considera pienamente coerente con gli obiettivi dell'Amministrazione - e quindi di rinnovata importanza - il potenziamento di campagne di sensibilizzazione rispetto al corretto conferimento dei rifiuti e all'aumento delle possibilità di conferimento differenziato; dando atto che alcune proposte sono già adottate dall'Amministrazione comunale, quali la riduzione della carta per stampanti negli uffici pubblici e azioni di sensibilizzazione dei dipendenti sui comportamenti sostenibili, si chiede di attivare un confronto col gestore per le proposte per il miglioramento del servizio di conferimento e raccolta, ma anche quelle connesse alla riduzione della produzione di rifiuti ed imballaggi, tenendo quindi conto parimenti della fattibilità tecnico-economica;

- per quanto riguarda la *Proposta 5.a. della Raccomandazione 5 – Sensibilizzare la popolazione per cambiare le sue abitudini di mobilità*, si valuta di accogliere la proposta che risulta coerente con le azioni attualmente messe in campo dall'Amministrazione con particolare riferimento alla campagna informativa permanente, alla sensibilizzazione nelle scuole di ogni ordine e grado, e presenta aspetti innovativi, come la proposta di un mobility manager di quartiere;

- per quanto riguarda la *Proposta 5.b. della Raccomandazione 5 – Promuovere l'intermodalità e la mobilità condivisa*, nella piena condivisione degli obiettivi sottesi alle azioni proposte, si valuta di accoglierla con riserva per poter compiutamente valutare gli impatti economici sul piano degli investimenti e sulle possibili fonti di finanziamento rispetto all'aumento della flotta del bike sharing, alla realizzazione di nuovi parcheggi scambiatori auto-bici oltre a quelli già previsti dalle nuove linee di Tram; si evidenzia però come non necessaria la "*revisione di tutte le scelte e le trasformazioni della rete infrastrutturale*" in quanto il PUMS contiene già obiettivi ambiziosi di aumento dell'infrastruttura dedicata a TPL e all'uso della bicicletta che assumono rinnovata importanza e condivisione grazie alle sollecitazioni dell'Assemblea;

- per quanto riguarda la *Proposta 5.c. della Raccomandazione 5 – Aumentare le piste ciclabili e renderle più sicure*, si valuta, pur nella piena condivisione degli obiettivi sottesi alle azioni proposte alcune delle quali già coerenti con la pianificazione e programmazione degli interventi previsti dall'Amministrazione, con particolare riferimento all'ampliamento e realizzazione della rete pianificata nel Biciplan e all'impegno per renderle più segnalate, sicure, illuminate e facilmente fruibili, di accoglierla con riserva per poter compiutamente valutare gli impatti economici sul piano degli investimenti e sulle possibili fonti di finanziamento per gli interventi infrastrutturali necessari e previa approfondita valutazione tecnica relativa all'opportunità delle realizzazioni di piste ciclabili in sede separata, o in sede promiscua, che presentano numerose criticità di realizzazione ed efficacia di sicurezza limitata nei contesti caratterizzati da flussi più densi, mentre si valuterà la fattibilità di "*circuito che connetta tutte le scuole elementari e medie*" rivedendo quanto già previsto dal Biciplan in chiave scolastica;

- per quanto riguarda la *Proposta 5.d. della Raccomandazione 5 – Migliorare la qualità dello spazio pubblico rendendolo accessibile a tutte le persone*, nella piena condivisione degli obiettivi sottesi alle azioni proposte, alcune delle quali già coerenti con la pianificazione e programmazione degli interventi previsti dall'Amministrazione e di cui, a seguito dell'Assemblea, si rinnova importanza e priorità, con particolare riferimento alla desigillazione

dei suoli ed al potenziamento della forestazione urbana, si valuta di accoglierla, previa valutazione tecnica rispetto al cambio dei materiali delle pavimentazioni che devono rispettare standard di sicurezza e di accessibilità alle persone con disabilità, così come per la riduzione dei posti auto a favore di piantumazioni urbane che vanno valutate localmente per gli effetti sul sistema della sosta; si valutano pienamente coerenti con gli obiettivi dell'Amministrazione e con le progettualità già in corso le proposte di coinvolgimento della cittadinanza e del terzo settore ed il ridisegno della città con criteri di prossimità per favorire la pedonalità, anche nelle zone periferiche, così come la realizzazione di "rifugi climatici";

- per quanto riguarda la *Proposta 6.a. della Raccomandazione 6 – Diminuire il traffico automobilistico privato e ridurre le emissioni*, si valuta di accoglierla rispetto alle proposte connesse alla disincentivazione dell'auto, alla promozione delle stazioni di ricarica per le auto elettriche e all'attenzione per lo smaltimento delle relative batterie; così come rispetto al supporto all'uso delle piattaforme informatiche di accesso ai sistemi di car sharing; per quanto riguarda l'elaborazione di una Valutazione di impatto sanitario (VIS) relativa al Passante di Bologna, l'Amministrazione avvierà una collaborazione con l'AUSL al fine di attivare una sorveglianza sanitaria sull'impatto dell'opera sui residenti più esposti, come strumento di valutazione per le future politiche di pianificazione della mobilità che mettano la salute pubblica al primo posto; la VIS, così come proposta, non risulta attuabile, sia perché è attivabile esclusivamente dall'Autorità competente per l'approvazione dell'opera, sia in ragione della fase di avanzamento in quanto si tratta di uno studio da effettuarsi in fase di progettazione (in coerenza con la VIA già elaborata);

- per quanto riguarda la *Proposta 6.b. della Raccomandazione 6 – Realizzare un trasporto pubblico comodo, conveniente e fruibile*, nella piena condivisione degli obiettivi sottesi alle azioni proposte, alcune delle quali già coerenti con la pianificazione e programmazione degli interventi previsti dall'Amministrazione in sinergia con Tper e di cui, a seguito dell'Assemblea, si rinnova importanza e priorità, si valuta di accoglierla con particolare riferimento alla promozione del trasporto integrato; per quanto riguarda l'ampliamento del servizio di trasporto pubblico anche nel periodo notturno ed estivo e l'abbattimento delle tariffe di accoglierla con riserva per poter compiutamente valutare gli impatti economici a carico del bilancio dell'Ente;

- per quanto riguarda la *Proposta 6.c. della Raccomandazione 6 - Promuovere spostamenti casa-lavoro e casa-studio sostenibili e condivisi* nella piena condivisione degli obiettivi sottesi alle azioni proposte alcune delle quali già coerenti con le iniziative promosse dall'Amministrazione e di cui, a seguito dell'Assemblea, si rinnova importanza e priorità, si valuta di accoglierla per quanto riguarda la promozione di azioni di sensibilizzazione nelle aziende e nell'Università, limitatamente alle competenze assegnate dalla norma all'Amministrazione comunale, così come un supporto alla creazione di una piattaforma di condivisione tra genitori per minimizzare l'uso dell'auto privata; per quanto riguarda la sensibilizzazione nelle scuole con servizi di bikesharing specificatamente dedicati, di accoglierla con riserva per poter compiutamente valutare gli impatti economici a carico del bilancio dell'Ente;

- per quanto riguarda la *Proposta 6.d. della Raccomandazione 6 - Disincentivare i voli privati e pubblici*, si valuta pur nella piena condivisione della promozione del viaggio in treno, piuttosto che in aereo per tratte brevi e compatibili, e dell'obiettivo di ridurre le emissioni connesse al trasporto aereo, parzialmente accoglibile, in quanto non è tra le competenze dell'Amministrazione introdurre tassazioni e disincentivazioni dell'uso dei voli privati, mentre potrà farsi parte attiva e sollecitare una riflessione in tal senso alle autorità ed organismi competenti, rendendosi anche portavoce delle istanze dell'Assemblea.

E PERTANTO:

in considerazione dell'analisi complessiva delle Raccomandazioni espresse dall'Assemblea, il Consiglio considera tre ambiti di intervento, trasversali su alcune raccomandazioni, prioritari poiché utili a raggiungere risultati tangibili già entro il presente mandato amministrativo, in quanto essi



fanno già parte di progetti bandiera dell'amministrazione di carattere innovativo, ma traggono sostegno dall'attività di indirizzo dell'Assemblea e sono coerenti con le valutazioni politiche emerse con particolare forza dalle interlocuzioni con la cittadinanza o con i portatori di interesse, con le forze politiche e con il dibattito pubblico emerso intorno ai lavori dell'Assemblea:

- 1) nell'ambito energia e fonti rinnovabili: promuovere lo sviluppo di strumenti finanziari, quali ESCo o modalità di accesso al credito per favorire la transizione ecologica della cittadinanza, in coerenza con le raccomandazioni contenute nella Proposta 1.b, 1.c della Raccomandazione 1, in collaborazione e confronto proattivo con potenziali soggetti finanziatori pubblici o privati, società partecipate, imprese ad esempio tramite bandi o avvisi dell'Amministrazione che devono proseguire nel percorso di innovazione ed orientamento del mercato, anche attraverso l'ideazione di meccanismi di supporto per la riqualificazione energetica anche degli immobili privati;
- 2) le proposte relative alla Mobilità scolastica (Proposta 5.b.1 della Raccomandazione 5; Proposta 5.c.2 e 5.c.4 della Raccomandazione 5; Proposta 6c.6, 6c.7, 6c.8, 6c.9, 6c.10 della raccomandazione 6) sono considerate di particolare rilievo poiché coinvolgono spostamenti di tutto il nucleo familiare e rispondono agli obiettivi di educazione, incentivazione alla mobilità sostenibile e maggiore sicurezza per tutti gli utenti stradali, in linea con quanto previsto dalla Città 30. In particolare, alta priorità, anche nel reperimento delle risorse necessarie, dovrà essere data ad alcuni strumenti puntuali suggeriti dall'Assemblea: mobility management diffuso in ogni quartiere, valorizzare e promuovere la figura dei mobility manager scolastici anche attraverso un ruolo di coordinamento a rete, incremento progressivo di pedibus e bicibus, aumento di piazze e strade scolastiche da progettare e finanziare, riattivazione di iniziative quali Bella Mossa per affiancare iniziative di incentivazione alla trasformazione dello spazio pubblico che interessi anche le scuole e le aziende, con coinvolgimento del tessuto produttivo in modo propositivo;
- 3) le proposte relative all'infrastrutturazione verde della città (Proposta 3.a della Raccomandazione 3) sono considerate di particolare rilievo in quanto coerenti con il progetto bandiera dell'amministrazione denominato "Impronta verde". In particolare, alta priorità, anche nel reperimento delle risorse necessarie, dovrà essere data ad alcuni strumenti puntuali suggeriti dall'Assemblea: realizzazione di rifugi climatici, incremento della permeabilità dei suoli, tutela e salvaguardia delle aree verdi esistenti con particolare riferimento a livelli prestazionali, restrizioni e compensazioni contenute in piani e regolamenti, installazione di fontanelle diffuse nei parchi pubblici e lungo i tragitti maggiormente percorsi dalla cittadinanza, azioni di forestazione urbana e di riqualificazione delle aree verdi scolastiche per creazione di nuovi orti dove svolgere attività di educazione ambientale, installazione di micro-aree verdi anche nel centro storico.

DATO ATTO che la presente deliberazione non comporta riflessi diretti o indiretti sulla situazione economico-finanziaria o sul patrimonio dell'ente in quanto le priorità individuate costituiscono indirizzo per la successiva programmazione;

RITENUTO di dichiarare la presente deliberazione immediatamente eseguibile, ai sensi e per gli effetti dell'art. 134, comma 4 del D.lgs. 267/2000, per poter dare corso all'inserimento delle proposte dei cittadini nel Contratto climatico nell'ambito della Missione Clima come meglio specificato nelle premesse;

VISTO il Regolamento comunale sui diritti di partecipazione e di informazione dei cittadini, da ultimo modificato con deliberazione di Consiglio Comunale DC/PRO/2022/75, PG. n. 465079/2022, seduta del 29/07/2022;

INFORMATA l'Area Programmazione e Statistica;

PRESO ATTO, ai sensi dell'art. 49, comma 1, del D.lgs. 267/2000 s.m.i., del parere favorevole in ordine alla regolarità tecnica espresso dal Direttore Generale, sentita la Responsabile del procedimento, e che non si richiede il parere della Responsabile dei servizi finanziari in ordine alla regolarità contabile;

Su proposta della Direzione Generale;

Sentite le Commissioni consiliari competenti;

**DELIBERA**

1. di accogliere integralmente le proposte 1.a, 2.a, 3.b, 3.c, 3.d, 5.a descritte nel Documento scaturito dalla Assemblea cittadina per il clima, così come formulate ed in allegato parte integrante della presente deliberazione;
2. di accogliere in parte le proposte 1.b, 1.c, 1.d, 2.b, 2.c, 2.d, 3.a, 4.a, 4.b, 4.c, 4.d, 5.b, 5.c, 5.d, 6.a, 6.b, 6.c, 6.d descritte nel suddetto Documento scaturito dalla Assemblea cittadina, per i motivi meglio dettagliati nelle premesse, con le riserve e le richieste di approfondimento ivi indicate, al fine di promuovere una tempestiva verifica di fattibilità presso i settori competenti;
3. di dare tempestiva informazione della presente deliberazione alla Giunta comunale per dare impulso agli organi competenti al fine di inserire, nel primo ciclo di programmazione utile, le raccomandazioni e proposte qualora non già previste negli strumenti di programmazione, e più precisamente nel DUP e nel PIAO (Piano di Attività e Organizzazione), anche come indirizzi generali per le società controllate e partecipate e per gli enti strumentali, con particolare riferimento ai tre ambiti trasversali ritenuti prioritari come motivamente illustrato nelle premesse;
4. di dare mandato ai direttori apicali, di integrare o eventualmente modificare i rispettivi Piani di attività in coerenza con l'adeguamento degli strumenti di programmazione;
5. di inserire le Raccomandazioni e proposte dei cittadini, così come valutate dal Consiglio comunale con la presente deliberazione, quale parte integrante del Contratto climatico da sottoporre alla UE nell'ambito della Missione Climatica per la neutralità al 2030, quale rilevante contributo scaturito dal percorso partecipativo;
6. di promuovere il monitoraggio dell'attuazione delle proposte e raccomandazioni, ai sensi dell'articolo 56 del Regolamento sui diritti di partecipazione ed informazione dei cittadini, tramite gli strumenti già in uso per rendicontare l'efficacia della programmazione dell'Ente, con periodica verifica annuale presso le competenti commissioni Consiliari e la partecipazione della Giunta e del Comitato di monitoraggio.

Infine, con votazione separata

**DELIBERA**

- DI DICHIARARE il presente provvedimento immediatamente eseguibile, ai sensi dell'art. 134, comma 4, del D. Lgs. 18 Agosto 2000, n. 267, per le motivazioni in premessa specificate.

La Presidente del Consiglio  
Maria Caterina Manca

La Vice Segretaria Generale Vicaria  
Lara Bonfiglioli

- Documento informatico predisposto, firmato digitalmente e conservato ai sensi del D.Lgs. 82/2005 e s.m.i. -

Bologna Missione Clima



# ASSEMBLEA CITTADINA PER IL CLIMA DI BOLOGNA

# Rapporto finale



Comune  
di Bologna

fondazione  
innovazione urbana

# SOMMARIO

## Le premesse

### Il processo di selezione dei membri

Campionamento dei residenti  
Inviti, help desk informativo ed evento  
Adesione e composizione dell'Assemblea cittadina  
Composizione finale dell'Assemblea

### Il processo e il metodo dell'Assemblea cittadina

Fase di informazione e formazione. Primo e secondo incontro  
Fase di ascolto e confronto. Terzo e quarto incontro  
Sospensione dei lavori per la pausa estiva  
Fase di deliberazione. Quinto, sesto, settimo e ottavo incontro  
Fase di decisione finale. Nono incontro  
Esiti della votazione

### Verso un radicamento sul territorio: oltre il mero ruolo di membri dell'Assemblea

Comitato di coordinamento  
Comitato di monitoraggio  
Gruppo di redazione  
Associazione  
Il consorzio PHOENIX e il progetto Case di Quartiere

## Appendice

### Link utili

---

Questo rapporto è stato redatto dal Comitato di Coordinamento dell'Assemblea cittadina per il Klima e verrà consegnato al Consiglio comunale a seguito della chiusura dei lavori dell'Assemblea.

Come da Regolamento sui diritti di partecipazione e di informazione dei cittadini, il Comitato di Coordinamento ha compiti di progettazione, organizzazione, selezione dei partecipanti, gestione, logistica, facilitazione di processo e comunicazione esterna, d'intesa con l'amministrazione comunale. Il Comitato di Supporto, invece, ha il compito di individuare gli esperti tematici da invitare a intervenire ai lavori dell'Assemblea durante la fase di informazione e formazione e di definire le modalità, i criteri selettivi e i tempi con cui i soggetti portatori di interessi collettivi o di categoria possono interagire con l'Assemblea durante la fase di ascolto e confronto. Infine, il Comitato di Garanzia ha il compito di garantire la corretta applicazione metodologica dell'Assemblea in ogni sua fase e di assicurare il buon andamento e l'imparzialità dell'intero processo dell'Assemblea, in particolare che la selezione degli esperti e dei rappresentanti dei soggetti portatori di interessi che intervengono ai lavori dell'Assemblea avvenga nel rispetto di criteri e modalità trasparenti ed equilibrate.

## Composizione dei Comitati di gestione dell'Assemblea cittadina sul klima

### Comitato di Coordinamento

Andrea Felicetti  
Chiara Cervigni  
Giovanni Allegretti  
Giovanni Ginocchini  
Mauro Bigi  
Noemí Julián  
Silvia Marreddu  
Simona Beolchi  
Stefania Zagnoli  
Valentino Ventrella

### Comitato di Supporto

Anna Donati  
Alessandra Bonoli  
Claudio Rossi  
Fabrizio Passarini  
Paolo Savoia

### Comitato di Garanzia

Luis Sal  
Laura Lecchi  
Roberta Paltrinieri  
Stefano Sotgiu

## Le premesse

L'Assemblea Cittadina è uno strumento di democrazia deliberativa che mira a coinvolgere direttamente un campione di cittadini e cittadine, sorteggiati/e casualmente, per contribuire a proporre e attuare politiche comunali. Il metodo del sorteggio consente di ottenere un campione, noto anche come mini-pubblico, che rispecchia alcune delle caratteristiche socio-demografiche della cittadinanza.

**Le Assemblee Cittadine si basano su un metodo di dialogo e argomentazione tra i/le partecipanti.** Questo spirito deliberativo implica che le decisioni siano raggiunte attraverso la condivisione di idee e opinioni e la ricerca, ove possibile, del consenso.

**Sulla base di questi presupposti, le raccomandazioni e le proposte contenute nel documento finale sono il risultato del lavoro dell'Assemblea e sono state considerate approvate per consenso. Si sono sottoposte a votazione solamente quelle proposte e raccomandazioni per cui era stato manifestato un disaccordo** - sulle modalità in cui questo è avvenuto si rimanda al capitolo "Processo svolto". Seguendo il Regolamento, sono state considerate approvate quelle proposte che hanno raggiunto la maggioranza dei voti dei 2/3 dei membri presenti.

La delibera del Consiglio Comunale DC 77/2021, PG 320332/2021, del 12/07/2021 ha introdotto lo strumento delle Assemblee Cittadine all'interno dello **Statuto comunale** all'art. 6-bis nel Titolo II. Successivamente, la delibera del Consiglio Comunale DC 74/2022 PG 465079/2022 del 01/08/22 ha modificato e integrato il **Regolamento sui diritti di partecipazione e informazione dei cittadini**, che al Capo III disciplina l'Assemblea cittadina, i diritti di iniziativa, le modalità di indizione, gli organi di governance e ogni aspetto di funzionamento della stessa.

**Infine, la delibera DC/PRO/2022/118 ha indetto la prima Assemblea cittadina che, trattando il tema "clima", è stata indetta con la finalità di definire proposte e raccomandazioni all'Amministrazione per rendere Bologna la prima città solare, rinnovabile e sostenibile, accelerando drasticamente la transizione energetica giusta, verso un modello basato sulla riduzione dei consumi, l'efficientamento energetico, la produzione e utilizzo di energia rinnovabile, l'autoconsumo energetico individuale e collettivo, le comunità energetiche.** Questa finalità, precisa questa stessa delibera, viene perseguita attraverso la risposta a tre quesiti:

- 1. Mitigazione:** come promuovere una transizione energetica della città a partire dai settori ad emissioni climalteranti più impattanti, al contempo garantendo il principio di equità e giustizia climatica e contrastando i fenomeni di povertà e marginalizzazione?
- 2. Adattamento:** parallelamente alla riduzione di emissioni, come le istituzioni e i cittadini possono affrontare e contenere i principali rischi climatici della città (isole di calore, eventi meteorologici estremi, alluvioni, siccità, ecc.)?
- 3. Strumenti amministrativi:** quali sono eventuali ostacoli riscontrati nelle norme, servizi e regolamenti di competenza comunale al raggiungimento degli obiettivi suddetti? E possibili miglioramenti e innovazioni che si potrebbero apportare?

## Composizione degli incontri

Nel 2023 il Comune di Bologna, la Fondazione Innovazione Urbana, la Città Metropolitana e altre istituzioni, hanno aderito alla campagna "No Women No Panel - Senza donne non se ne parla", tramite la sottoscrizione di un protocollo d'intesa con la RAI Radiotelevisione Italiana, la Regione Emilia-Romagna e l'Università di Bologna. La finalità del protocollo è quella di promuovere la presenza delle donne nel dibattito

pubblico, valorizzando competenze, esperienze e talenti femminili per una più compiuta attuazione dei principi di democrazia paritaria e pluralismo.

L'Assemblea cittadina per il clima ha garantito in tutti gli incontri la partecipazione equilibrata e plurale di donne e uomini, allestendo i panel dove entrambi i sessi sono stati rappresentati in misura quanto più possibile paritaria.



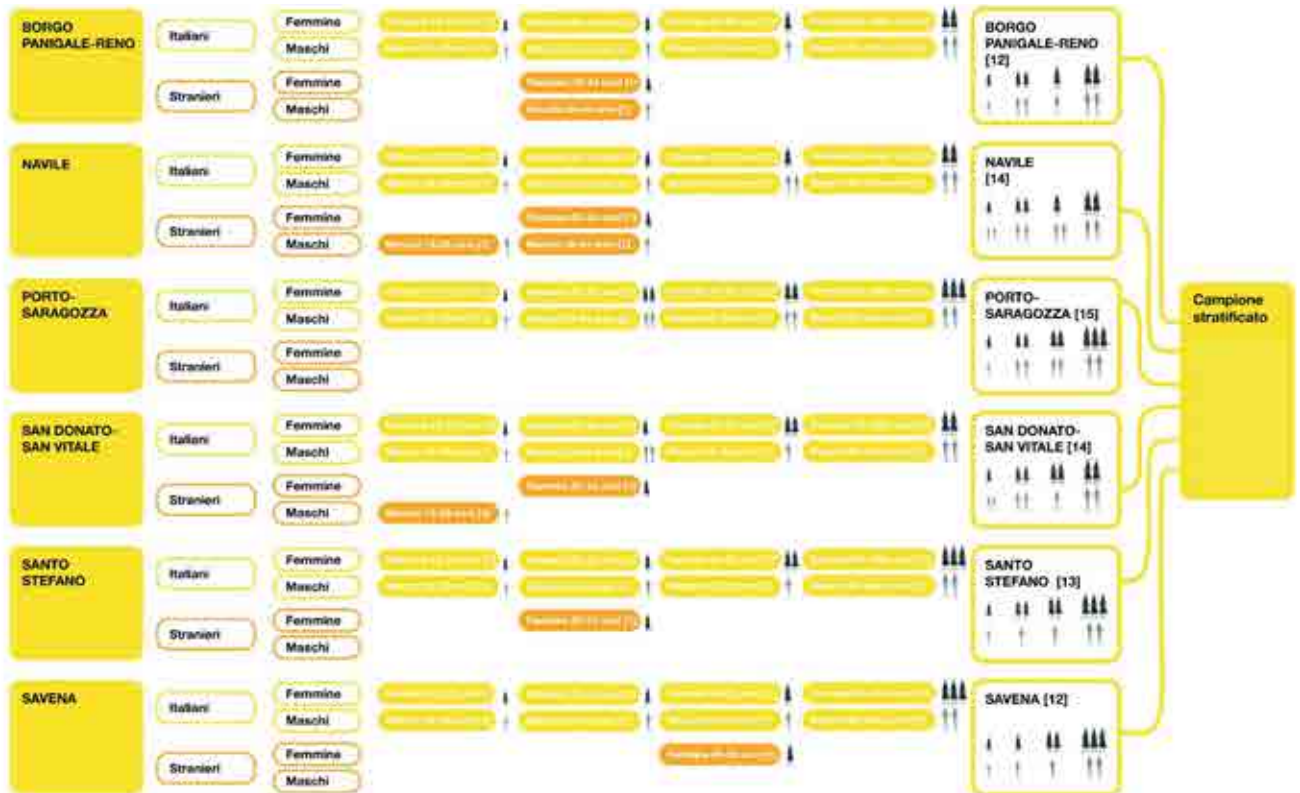
Fotografie di Fondazione per l'Innovazione Urbana

# Il processo di selezione dei membri

## Campionamento dei residenti

Il campione delle persone residenti dell'Assemblea cittadina era composto da **80 membri titolari e 800 membri sostituti**. Il piano di campionamento aveva **57 cluster** e questa composizione:

462 donne e 418 uomini; 781 persone italiane e 99 persone straniere; 154 persone di età 16-29 anni, 231 di età 30-44 anni, 198 di età 45-59 anni e 297 di 60 anni e oltre; Borgo Panigale-Reno: 66 uomini e 66 donne; Navile: 88 uomini e 66 donne; Porto - Saragozza: 77 uomini e 88 donne; San Donato-San Vitale: 77 uomini e 77 donne; Santo Stefano: 55 uomini e 88 donne; Savena: 55 uomini e 77 donne.



Infografica del Piano di Campionamento di Fondazione Innovazione Urbana

## Inviti, help desk informativo ed evento



L'invito a partecipare all'Assemblea cittadina è stato inviato **alle 880 persone sorteggiate residenti nel Comune di Bologna e a 300 studenti e studentesse fuori sede dell'Università di Bologna sorteggiate**. L'invito aveva una cartolina, una lettera del Sindaco per la persona sorteggiata, una brochure informativa con un link alle domande frequenti su Partecipa, il modulo di adesione cartaceo e un QRCode per aderire online con lo SPID.

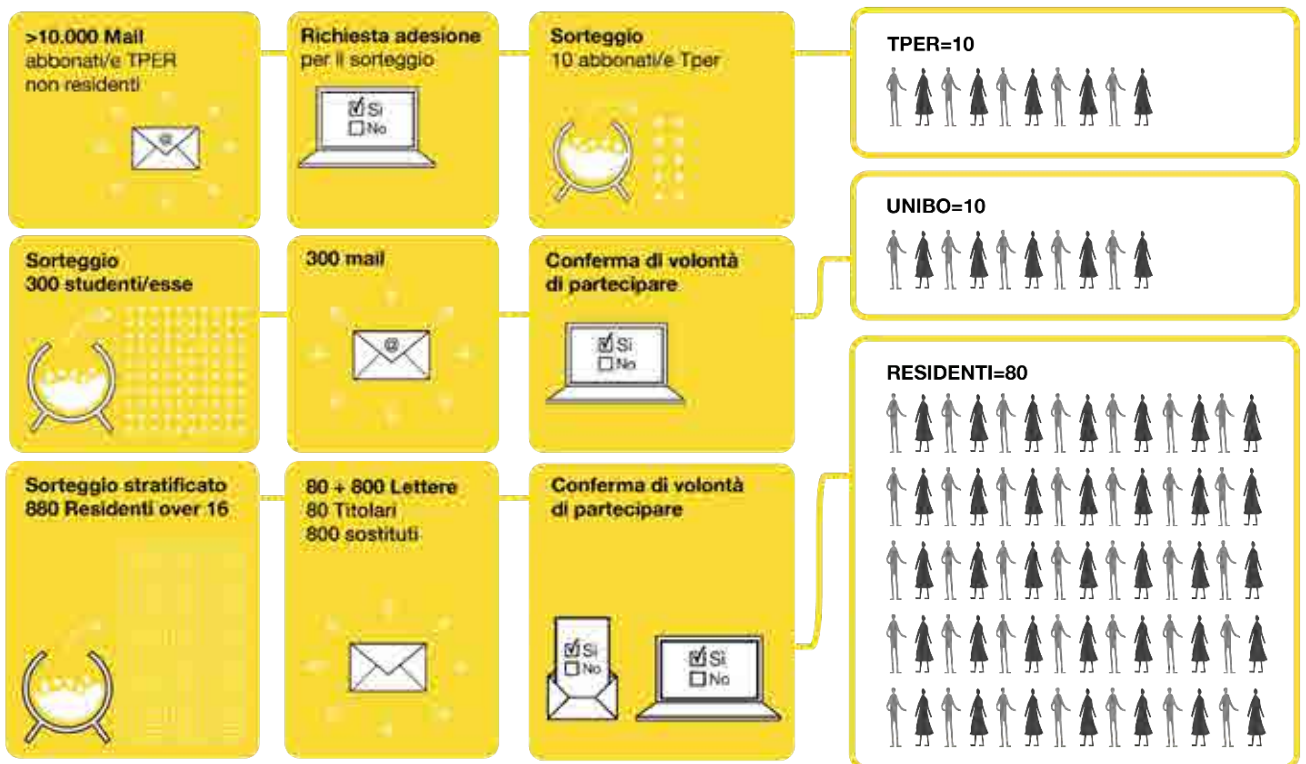
**Per arrivare ai 10 membri city user utenti del TPL, è stato inviato un invito a essere sorteggiati/e a più di 10.000 persone abbonate al trasporto pubblico metropolitano non residenti a Bologna.**

Durante la fase di invio degli inviti, Fondazione per l'Innovazione Urbana ha realizzato un **help desk informativo** via mail e telefono per rispondere a tutte le domande delle persone sorteggiate. Inoltre, il **26 aprile si è tenuto un incontro** dedicato all'ascolto di esperienze di altre assemblee cittadine in Europa e a rispondere alle ultime domande. L'incontro è stato l'ultima occasione per dare la propria disponibilità a partecipare.

## Adesione e composizione dell'Assemblea cittadina

### Persone residenti nel Comune di Bologna

Sono state inviate 880 lettere con l'invito a partecipare alle persone residenti. Passate due settimane dal primo invio, si è effettuato un secondo invio solamente per le classi di campionamento che non erano "coperte", ossia quelle classi che non avevano un numero di adesioni almeno pari al doppio dei membri effettivi necessari per quella classe. Sono state così inviate le lettere a 17 classi di campionamento, per un totale di 458 lettere.



Infografica di Fondazione Innovazione Urbana

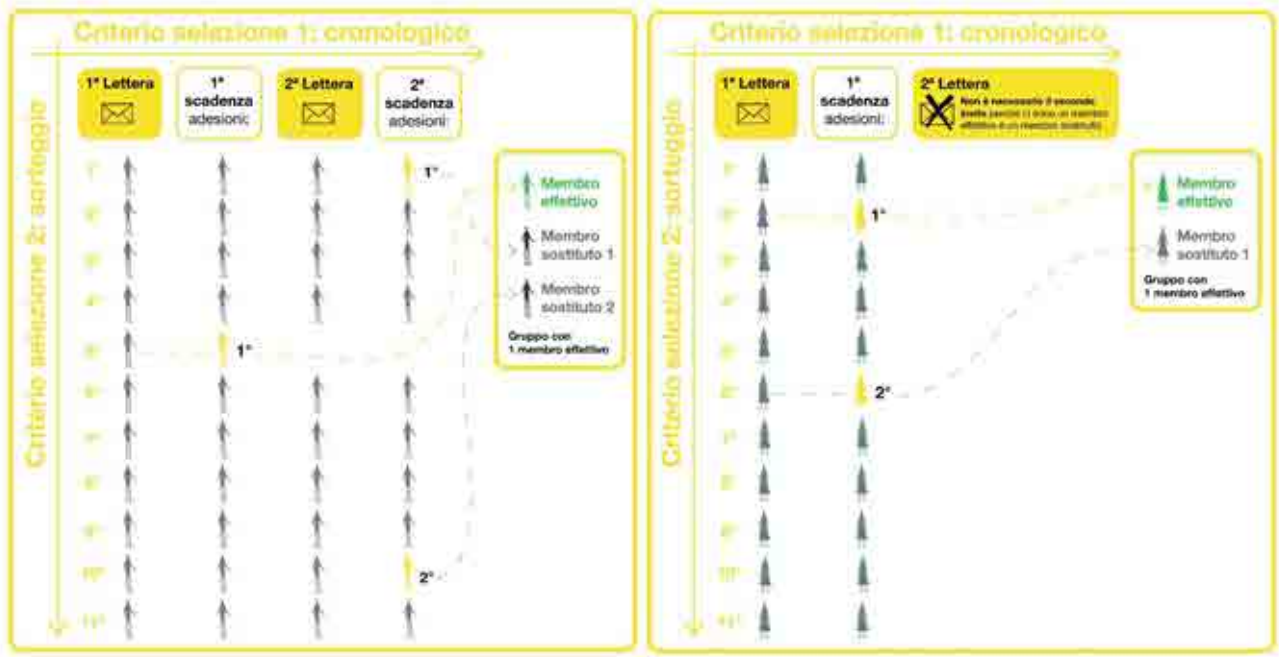
Scaduto il tempo utile per esprimere la propria volontà a partecipare, **hanno aderito 158 residenti su 880 invitati/e (pari al 17,95%), di cui 66 membri effettivi (14 membri del campione sono rimasti scoperti), e 92 membri sostituti.** Altri 54 persone hanno scritto o chiamato per declinare l'invito.

Per la selezione si è proceduto **selezionando la persona che è stata sorteggiata per prima in ognuno dei 57 cluster di campionamento.**

Qualora questa persona non abbia risposto entro la scadenza ultima oppure abbia comunicato di non voler partecipare, **si è proceduto a contattare la persona sostituta che ha dato la sua disponibilità e che è stata sorteggiata per prima, sempre all'interno dello stesso cluster.**

Qualora non sia stato possibile effettuare una sostituzione seguendo questo metodo, si è proceduto a **contattare una persona sostituta di un altro cluster.** In questo caso, il criterio è stato quello di cercare di cambiare meno variabili possibili e nel seguente ordine: cittadinanza - genere - età - quartiere; mentre nel caso degli stranieri e delle straniere: genere - età - cittadinanza - quartiere. Il secondo invio di lettere è stato fatto nelle classi in cui non c'erano adesioni e in quelle in cui non c'era un numero di sostituti almeno pari ai membri titolari in quella classe.





Infografica di Fondazione Innovazione Urbana

Nel caso 1 (infografica sinistra) il quinto sorteggiato è stato il primo a rispondere, quindi diventa automaticamente Membro Effettivo. Il primo sorteggiato, invece, che sarebbe stato titolare se avesse risposto subito, ha risposto alla seconda chiamata in ordine cronologico, quindi diventa il primo Membro sostituto (per rispetto del criterio di sorteggio), seguito dal secondo membro sostituto (che occupa la decima posizione in ordine di sorteggio).

Nel caso 2 (infografica destra) hanno risposto solo il secondo e il sesto sorteggiato, che diventano automaticamente Membro Effettivo e Membro Sostituto. Il gruppo è completo, pertanto non si spedisce un ulteriore invito ai sorteggiati che non hanno risposto.

### Studentesse e studenti dell'Università di Bologna fuori sede

L'università di Bologna ha sorteggiato 300 studenti/esse dell'Università di Bologna. Hanno aderito in 11 (il 3,67% dei/delle sorteggiati/e), di cui 5 studentesse e 6 studenti UNIBO. Mentre le studentesse sono state tutte invitate a partecipare come membri effettivi, per i 6 studenti si è proceduto a selezionarli in ordine cronologico. In altre parole, l'ultimo dei 6 studenti che ha inviato la sua volontà ad aderire è stato escluso dai membri effettivi.

### Persone abbonate al trasporto pubblico metropolitano

TPER ha inviato una newsletter a più di 10.000 persone non residenti a Bologna. In questo caso non è avvenuto un sorteggio preliminare in quanto, per motivi di privacy di Tper, non era possibile trattare il dato senza il loro consenso. Pertanto, TPER ha inviato una mail a tutte le persone abbonate alla newsletter (qualche migliaio) in cui si chiedeva se erano interessate a essere sorteggiate per partecipare ai lavori dell'Assemblea. Hanno aderito 47 persone abbonate al trasporto pubblico metropolitano, che successivamente sono state sorteggiate dal Comune di Bologna.

### Composizione finale dell'Assemblea

L'Assemblea cittadina per il Clima era inizialmente composta da 80 residenti, 10 studenti/esse fuori sede dell'Università di Bologna e 10 abbonati/e al trasporto pubblico metropolitano. Tuttavia, 11 classi di campionamento dei residenti sono rimaste scoperte. Pertanto si sono effettuate delle sostituzioni, seguendo i criteri sopra spiegati, e di conseguenza ci sono stati i seguenti scostamenti:

- Figura non coperta: Borgo Panigale Reno - **Maschi** - 60 e oltre - Italiani; sostituzione: Borgo Panigale Reno - **Femmina** - 60 e oltre - Italiani
- Figura non coperta: Borgo Panigale Reno - Maschi - **60 e oltre** - Italiani; sostituzione: Borgo Panigale Reno - Maschi - **45-59** - Italiani
- Figura non coperta: San Donato San Vitale - Stranieri - **16-29** - **Maschi**; sostituzione: San Donato San Vitale - Stranieri - **30-44** - **Femmine**

- Figura non coperta: San Donato San Vitale - **Femmina** - 60 e oltre - Italiani; sostituzione: San Donato- San Vitale - **Maschio** - 60 e oltre - Italiani
- Figura non coperta: San Donato - San Vitale - Femmine - **60 e oltre** - Italiani; sostituzione: San Donato - San Vitale - Femmine - **30-44** - Italiani
- Figura non coperta: Santo Stefano - **Maschi** - 30-44 - Italiani; sostituzione: Santo Stefano - **Femmine** - 30-44 - Italiani
- Figura non coperta: Santo Stefano - **Femmine** - 60 e oltre - Italiani; sostituzione: Santo Stefano - **Maschi** - 60 e oltre - Italiani
- Figura non coperta: Navile - Femmine - 30-44 - **Italiani**; sostituzione: Navile - Femmine - 30-44 - **Stranieri**
- Figura non coperta: Navile - **Femmine** - 45-59 - Italiani; sostituzione: Navile - **Maschio** - 45-59 - Italiani
- Figura non coperta: Navile - **Femmine** - **60 e oltre** - Italiani; sostituzione: Navile - **Maschi** - **45-59** - Italiani
- Figura non coperta: Navile - **Femmine** - **60 e oltre** - Italiani; sostituzione: Navile - **Maschi** - **30-44** - Italiani
- Figura non coperta: Navile - Stranieri - **16-29** - Maschi; sostituzione: Navile - Stranieri - **30-44** - Maschi
- Figura non coperta: Navile - Maschi - **60 e oltre** - Italiani; sostituzione: Navile - Maschi - **45-59** - Italiani
- Figura non coperta: Savena - **Maschi** - 60 e oltre - Italiani; sostituzione: Savena - **Femmine** - 60 e oltre - Italiani

Una volta iniziata l'Assemblea, sono state fatte **4 sostituzioni di membri che avevano rinunciato dopo aver dato inizialmente un'adesione.**

# Il processo e il metodo dell'Assemblea cittadina

Il percorso dell'Assemblea cittadina per il Clima di Bologna è stato sviluppato, coerentemente con il Regolamento e le indicazioni della Delibera istitutiva, in quattro fasi: informazione e formazione, ascolto e confronto, deliberazione e decisione finale.



Fotografia di Margherita Caprilli - Fondazione Innovazione Urbana

La fase di informazione e formazione si è svolta tra fine maggio e metà giugno, la fase di ascolto e confronto con i portatori di interesse e le istituzioni si è svolta tra fine giugno e inizio luglio, la fase di deliberazione ha avuto quattro incontri e si è svolta tra metà settembre e fine ottobre e la fase di decisione ha avuto un unico incontro e si è svolta a inizio novembre. Tra inizio luglio e metà settembre l'Assemblea ha effettuato una pausa estiva.



Infografica di Fondazione Innovazione Urbana

Durante l'Assemblea cittadina per il Clima, 7 membri sono decaduti - per aver fatto più di due assenze consecutive - e 5 membri hanno rinunciato dopo il secondo incontro, per cui la sostituzione non è stata possibile. Quindi, alla fine del processo, l'Assemblea cittadina risulta composta da 88 membri. La percentuale di partecipazione è sempre stata intorno all'80%, raggiungendo quasi il 90% nei primi tre incontri e nell'ottavo.

## Fase di informazione e formazione. Primo e secondo incontro

La prima fase, di informazione e formazione, è stata dedicata all'ascolto di esperti ed esperte su tematiche riguardanti il cambiamento climatico e alla selezione di due portavoce dell'Assemblea che, come da Regolamento, facessero parte del Comitato di Coordinamento.

La lista degli esperti e delle esperte è stata redatta dal Comitato di Supporto che, come sancisce il Regolamento (art. 49 comma 3), ha il compito di "individuare gli esperti e le esperte da invitare ad intervenire ai lavori dell'Assemblea durante la fase di formazione". Pertanto, sentite le loro disponibilità, sono state invitate a intervenire le seguenti persone: **Adamo Domenica Rombolà** (professore presso l'Alma mater Studiorum - Università di Bologna, Dipartimento di Scienze e tecnologie agroalimentari), **Beatrice Pulvirenti** (professoressa associata presso l'Alma mater Studiorum - Università di Bologna), **Carlo Cacciamani** (direttore dell'Agenzia Nazionale per la Meteorologia e Climatologia), **Claudio Coletta** (ricercatore senior presso il Dipartimento di Filosofia e Comunicazione dell'Università di Bologna), **Emanuele Leonardi** (sociologo dell'economia e del lavoro presso l'Università di Bologna), **Gianni Silvestrini** (direttore scientifico del Kyoto Club e della rivista/portale QualEnergia), **Giovanni Semprini** (Professore Associato presso il Dipartimento di Ingegneria Industriale dell'Università di Bologna), **Leonardo Setti** (Professore presso l'Alma mater Studiorum - Università di Bologna, Dipartimento di Chimica industriale), **Letizia Cremonini** (dottoranda in architettura e Pianificazione del Paesaggio presso l'Università di Firenze e attualmente ricercatrice presso l'Istituto per la BioEconomia del Centro Nazionale di Ricerca di Bologna), **Patrizia Malgieri** (esperta di pianificazione dei trasporti e delle politiche di mobilità urbana, responsabile per TRT Trasporti e Territorio dell'area pianificazioni) e **Vittorio Marletto** (membro del gruppo scientifico Energia per l'Italia).

Per quanto riguarda la selezione di due portavoce dell'Assemblea cittadina, si è chiesto ai membri interessati di scrivere il proprio nome e cognome su un biglietto. Dopodiché è avvenuta l'estrazione di due membri, come previsto dal Regolamento (art. 54, comma 2), e l'Assemblea ha preso atto su chi fossero le due portavoce.

Questa fase, che ha riguardato i primi due incontri, è stata organizzata con alcuni interventi di carattere generale in plenaria, due nel primo incontro (introduzione ai cambiamenti climatici e introduzione sulla mitigazione) e uno nel secondo (adattamento ai cambiamenti climatici), e altri su temi specifici in gruppi.



Fotografie di Margherita Caprilli - Fondazione Innovazione Urbana

## Fase di ascolto e confronto. Terzo e quarto incontro

La seconda fase è stata dedicata all'ascolto dei soggetti portatori d'interesse della città. A tal proposito, il Comitato di coordinamento insieme al Comitato di supporto ha realizzato una **“Manifestazione di interesse per la partecipazione agli incontri di ascolto e confronto da parte dei rappresentanti di soggetti portatori di interessi collettivi”** a cui hanno aderito **28 soggetti organizzati, formali e informali, in forma singola o aggregata**. L'Assemblea ha poi scelto, attraverso un questionario, quali di queste realtà ascoltare in presenza e da quali ricevere un contributo online. A questa lista si sono aggiunti anche alcuni soggetti istituzionali in quanto, come previsto dal Regolamento (art. 53 comma 4), il Comune e altre istituzioni hanno il diritto di intervenire nell'Assemblea. I Comitati hanno scelto di ammettere l'ascolto online delle realtà che hanno inviato la manifestazione di interesse in ritardo.

**A questa fase sono stati dedicati due incontri durante i quali sono state ascoltate le seguenti realtà:** Aeroporto G. Marconi di Bologna, AESS, ARPAE, Bologna30, CGIL, Campi Aperti, Clean Cities Campaign, EmmeBo, Extinction Rebellion Bologna, EX Aequo Cooperativa Sociale, Gruppo Hera, Legambiente Bologna, Open Project, Ordine degli Ingegneri di Bologna, Produttori agricoli di Borgo Panigale, Rigenerazione no Speculazione, Settore Transizione Ecologica e Ufficio Clima del Comune di Bologna, WeVez. Queste realtà hanno avuto a disposizione 10 minuti ciascuna per poter portare il proprio punto di vista all'Assemblea. I membri dell'Assemblea si sono poi riuniti in piccoli gruppi per elaborare delle domande a cui le realtà hanno poi risposto con dei video o dei documenti scritti durante la sospensione dei lavori per la pausa estiva.

Le altre realtà hanno inviato un loro contributo ai membri, i quali hanno avuto la possibilità di formulare delle domande anche nei loro confronti attraverso un form online. Queste realtà sono: A.MO. Bologna ONLUS, CMCC, Comitato di Quartiere dei Borghigiani, Comitato VivaLaVivaia, Condominio Beroaldo 38 Emanuel 11, 13, 15, 17, ENEA, Salvaiciclisti Bologna, Trailslight srl.



Fotografie di Margherita Caprilli - Fondazione Innovazione Urbana

## Sospensione dei lavori per la pausa estiva

**Durante la pausa estiva, da inizio luglio a metà settembre, si è data risposta alle diverse domande emerse dall'Assemblea attraverso diverse modalità.**

Da un lato, attraverso dei brevi video chiamati #PilloleDiClima, si è risposto alle domande indirizzate ad alcuni esperti ed esperte coinvolte nel processo dell'Assemblea. Questi video sono stati poi inviati ai membri e caricati sul sito di Partecipa, nelle pagine dedicate ai diversi temi della formazione.

Dall'altro lato, sono state inviate le domande alle realtà portatrici di interessi della città, che hanno risposto con un documento scritto oppure un video. Queste risposte sono state inviate ai membri e caricate sul sito di Partecipa.

**L'obiettivo di queste attività era quello di chiarire i dubbi e le domande emersi durante le fasi di formazione e ascolto, permettendo così ai membri di giungere ad una deliberazione maggiormente consapevole e informata.**



Fotogramma di uno dei video di #PilloleDiClima

**Inoltre, ad inizio settembre, rispettivamente il 6 e il 7 settembre, si sono svolti due incontri, a partecipazione volontaria ed extra percorso formale, in modalità mista, per rispondere ad un'esigenza di approfondimento espressa dai partecipanti con i tecnici e le tecniche del Comune di Bologna.** Questi incontri hanno avuto lo scopo di approfondire alcune questioni e domande emerse durante gli incontri precedenti dell'Assemblea. Si precisa che questi incontri sono stati registrati e non prevedevano alcun gettone di presenza in quanto non rientravano negli 8 incontri previsti.



Fotogramma dei due incontri del 6, 7 settembre

## **Fase di deliberazione.** Quinto, sesto, settimo e ottavo incontro

La terza fase è stata incentrata sulla deliberazione, ossia su un confronto creativo e libero interno all'Assemblea, sia in gruppi di lavoro che in modalità plenaria, con il supporto di facilitatori e facilitatrici. Questa fase è iniziata il 14 settembre con il quinto incontro, in cui i membri dell'Assemblea hanno iniziato a lavorare sulle proposte e raccomandazioni da far pervenire al Consiglio comunale, ed è proseguita fino all'ottavo incontro. Durante tutta questa fase, quindi sin dal quinto incontro, ai membri dell'Assemblea è stato distribuito un Dossier di approfondimento con l'obiettivo di fornire uno strumento in cui poter trovare le informazioni ricevute e alcuni obiettivi e buone pratiche a livello europeo, nazionale, regionale e locale. Tale Dossier è stato curato dalla Prof.ssa Alessandra Bonoli, membro del Comitato di Supporto, e dall'Assegnista di ricerca Sara Pennellini del Dipartimento DICAM dell'Università di Bologna, con la collaborazione del Comitato di Supporto e del Comitato di Coordinamento dell'Assemblea cittadina di Bologna e con i contributi dei diversi settori del Comune di Bologna.

**Il primo incontro della fase di deliberazione si è aperto chiedendo ai membri dell'Assemblea di proporre i temi sui quali volevano incentrare i lavori dell'Assemblea, utilizzando una tecnica di lavoro di gruppo conosciuta come Open Space Technology (OST).** Durante questa fase, ciascun membro dell'Assemblea ha potuto proporre la sua idea in totale libertà e autonomia, inserendola all'interno di tre ambiti tematici: abitare la città, rinaturalizzare la città, vivere e spostarsi nello spazio pubblico. Alla fine di questa fase sono emerse oltre trenta proposte di lavoro.



Fotografie di Margherita Caprilli - Fondazione Innovazione Urbana

**Successivamente, ciascun membro ha scelto una di queste proposte su cui lavorare in gruppo, avendo però la possibilità di cambiare gruppo per qualsiasi motivo e in qualsiasi momento.** Ogni gruppo ha così lavorato all'emersione di diverse proposte e raccomandazioni sul tema scelto, attraverso un dialogo ed un confronto tra le persone del gruppo stesso.



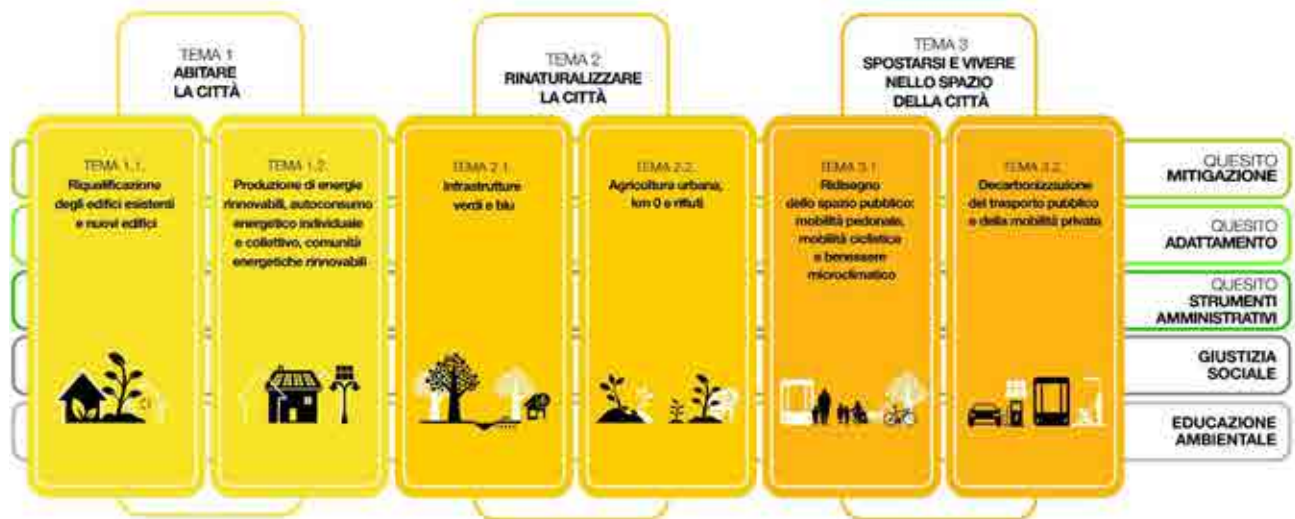
Fotografie di Margherita Caprilli - Fondazione Innovazione Urbana

Durante questo incontro è emersa la richiesta, da parte di alcuni membri, di approfondire il tema dello stoccaggio della CO<sub>2</sub>. Pertanto, il Comitato di Supporto ha proposto un approfondimento con il professor Villiam Bortolotti, che si è reso disponibile, e con il quale si è organizzato un incontro il 18 ottobre.

**Per l'incontro successivo, i numerosi gruppi di lavoro sono stati raggruppati secondo le affinità dei loro temi in due gruppi per ogni ambito tematico, sei gruppi in totale.** Di conseguenza, il tema "Abitare la città" è suddiviso nel gruppo di lavoro "riqualificazione degli edifici nuovi ed esistenti" e nel gruppo "produzione di energie rinnovabili, autoconsumo energetico e comunità energetiche rinnovabili". Il tema "Rinaturalizzare la città" è invece diviso nei due gruppi che si occupano rispettivamente di "infrastrutture verdi e blu" e "Agricoltura urbana, Km 0 e rifiuti". In ultimo, il tema "Vivere e spostarsi nello spazio della città" è composto dai gruppi "ridisegno dello spazio pubblico: mobilità pedonale, ciclistica e benessere microclimatico" e "decarbonizzazione del trasporto pubblico e della mobilità privata". I membri hanno quindi scelto in quale gruppo inserirsi per approfondire le proposte emerse durante l'incontro precedente. Ciascuno dei 6 gruppi di lavoro è stato suddiviso in piccoli sottogruppi, all'interno dei quali ogni membro ha riletto le proposte e si è appuntato note e commenti, che sono stati prima condivisi tra i membri del sottogruppo e poi condivisi all'intero gruppo di lavoro.



L'obiettivo era quello di dettagliare maggiormente le raccomandazioni e le proposte. All'interno di ogni gruppo di lavoro si è proceduto a **clusterizzare le diverse proposte**. Una volta fatto ciò, il gruppo ha definito l'**obiettivo di lungo periodo per ogni cluster al fine di affinare le proposte corrispondenti**. L'incontro si è poi concluso con la condivisione, da parte dei facilitatori e delle facilitatrici, dei nuovi elementi emersi e delle proposte riformulate all'interno di ciascun gruppo e, infine, riportando brevemente i feedback durante la sessione in plenaria.



Infografica Fondazione per l'Innovazione Urbana

**Durante l'incontro del 9 ottobre, il terzo della fase di deliberazione, l'Assemblea cittadina ha deciso di aggiungere un incontro agli 8 già previsti.** L'obiettivo di questo settimo incontro era di **affinare ulteriormente le proposte e le raccomandazioni, cercando di rispondere meglio ai 3 quesiti previsti dal mandato dell'Assemblea**. A questo proposito, hanno presenziato all'incontro alcuni esperti ed esperte, già coinvolte nella fase di formazione, e alcuni tecnici del Comune di Bologna, al fine di rispondere alle eventuali domande o chiarire eventuali dubbi su alcune tematiche e proposte. Ogni sottogruppo ha avuto infatti 10 minuti per fare domande a queste figure tecniche. Inoltre, per dare a tutti i membri la possibilità di contribuire alle diverse proposte, in questo incontro e in quello successivo si sono svolti alcuni World Cafè, ossia dei momenti in cui le persone in un certo gruppo di lavoro sono andate a conoscere il lavoro svolto da altre persone in un altro gruppo, contribuendo con suggerimenti e riflessioni.



Fotografie di Fondazione per l'Innovazione Urbana

L'ultimo incontro della fase di deliberazione, svoltosi mercoledì 25 ottobre, è stato dedicato ad approfondire e precisare le proposte e le raccomandazioni. L'obiettivo di questo incontro era di produrre un documento definitivo che fosse poi sottoposto alla fase di decisione dell'Assemblea stessa durante l'ultimo incontro. I singoli gruppi di lavoro hanno letto le raccomandazioni e le proposte con i suggerimenti proposti dal Comitato di coordinamento. Alcuni suggerimenti riguardavano la forma, per cercare di omogeneizzare i testi e le parole delle proposte, altri riguardavano la struttura, con l'obiettivo di dare maggior coerenza alle proposte e al Documento nella sua interezza. Ciascun gruppo di lavoro poteva decidere se e quali accettare o modificare. Inoltre, per produrre proposte e raccomandazioni che avessero il contributo di tutti i membri e non solo di quelli del gruppo di lavoro, si sono svolti degli scambi tra gruppi, in cui rappresentanti di altri gruppi andavano in un gruppo a portare il loro contributo e punto di vista alle proposte emerse. In questi scambi, i membri dell'Assemblea sono stati chiamati a far emergere anche elementi di criticità e di dissenso rispetto alle raccomandazioni, alle proposte o alle proposte di azione.



Fotografie di Carlo Sgarzi - Fondazione per l'Innovazione Urbana

## Fase di decisione finale. Nono incontro

### Attività realizzate nei giorni precedenti all'incontro

Il documento delle raccomandazioni e delle proposte (che a loro volta contengono proposte di azione), risultato del lavoro deliberativo e consensuale dei quattro incontri della fase di deliberazione dell'Assemblea, è stato inviato ai membri dell'Assemblea cittadina una settimana prima dell'ultimo incontro.

Come scritto nel [Regolamento dell'Assemblea](#), *“per l'approvazione, si procede il più possibile secondo il metodo del consenso, come definito all'art. 52, comma 2; solo una volta esperita infruttuosamente tale modalità e all'esclusivo fine di esprimersi entro il termine finale di durata dell'assemblea, si può procedere mediante votazione, a seguito della quale sono considerate approvate le proposte e raccomandazioni che abbiano conseguito almeno la maggioranza qualificata dei 2/3 dei componenti”*

Per questo motivo, **è stato chiesto ai membri dell'Assemblea di inviare due tipi di feedback sul documento tramite un google form: comunicare eventuali modifiche al testo solamente se inerenti al proprio gruppo di lavoro e se non corrispondenti a quanto discusso nel proprio gruppo; oppure, per le proposte degli altri gruppi, esprimere il proprio dissenso, esplicitandone il motivo e portando dunque a votazione quelle proposte.**

I membri dell'Assemblea hanno espresso il proprio dissenso su 12 proposte, comprese alcune proposte di azione: Proposta 5.b comprese le azioni 5.b.1, 5.b.2 e 5.b.3; Proposta 5.c compresa la azione 5.c.1; Proposta 6.a comprese le azioni 6.a.1 e 6.a.4; Proposta di azione 6.c.4 e Proposte di azione 6.d.3 e 6.d.4. Per un approfondimento si rimanda al capitolo successivo “Esiti della votazione”.

Per quanto riguarda le modifiche alle proposte riguardanti il proprio gruppo di lavoro, sono arrivate 60 proposte di modifica da parte di 6 persone, di cui ne sono state accettate 15. Le proposte di modifica accettate hanno rispettato i criteri del metodo consensuale. Difatti, erano precisazioni tecniche oppure alcune modifiche inerenti al proprio gruppo di lavoro, che erano state condivise dal gruppo durante l'ultimo incontro, ma che erano state riportate in modo inesatto. Le restanti proposte di modifica non sono state accettate perché esulano dal metodo consensuale adottato, in quanto o si riferivano a proposte di altri gruppi o andavano a modificare il contenuto e/o il senso di alcune proposte frutto del confronto e della condivisione di un gruppo di persone, su proposta di un singolo. È stato comunque chiesto a chi le aveva proposte se volesse manifestare il dissenso e quindi portarle a votazione. Nessuna di queste persone ha voluto portare le proposte a votazione.

### Metodo dell'incontro

Dopo la spiegazione del metodo dell'incontro e della votazione in plenaria, si è proceduto con le votazioni. Come descritto sopra, le proposte e le proposte di azione su cui non è stata segnalata alcuna contrarietà non sono state sottoposte a votazione, in quanto frutto del lavoro consensuale degli incontri deliberativi.

Il Comitato di Coordinamento ha inoltre proposto all'Assemblea di fare una valutazione di priorità delle proposte: cioè che ogni membro segnalasse per ogni raccomandazione quale fosse la proposta più impattante per la mitigazione, quella più impattante per l'adattamento e quella più urgente. Questo al fine di dare indicazioni al Consiglio Comunale sulla scala di priorità delle proposte emerse. Tuttavia vari membri dell'Assemblea hanno manifestato dubbi su questa proposta in quanto avrebbe tolto importanza ad alcune proposte, mentre tutte sono da considerarsi parimenti importanti perché frutto di un lavoro condiviso; alcuni membri hanno suggerito che l'esito di tale valutazione poteva essere utile per il Comitato di Monitoraggio, ma non avrebbe dovuto essere inviata al Consiglio Comunale. Dato il dissenso emerso, la questione è stata portata al voto e l'esito è stato di non effettuare questa fase.

Per quanto riguarda le proposte e proposte di azione in cui c'erano stati dissensi, una a una sono state lette e la persona o le persone che avevano manifestato un dissenso hanno letto le motivazioni di tale opposizione. La votazione è avvenuta prima sulle proposte d'azione e successivamente sulla proposta; questo perché se una proposta di azione fosse stata eliminata oppure modificata, anche la proposta avrebbe cambiato il suo contenuto. **Per ogni singola votazione, ciascun membro ha avuto a disposizione tre cartellini e ne ha scelto uno con il quale esprimersi sulla proposta: verde**, per esprimere il proprio supporto alla proposta ("sono molto d'accordo"), **giallo**, per esprimere il proprio accordo ma con dubbi ("non sono sicuro/a ma non mi oppongo") e **rosso**, per esprimere il proprio dissenso ("non sono per niente d'accordo"). **La proposta è passata nel caso in cui la somma dei cartellini verdi e gialli fosse superiore a 2/3 dei membri presenti.** I membri dell'Assemblea hanno voluto **reformulare alcune delle proposte in cui c'era stato dissenso e riportarle a voto una volta modificate.** Siccome questa era un'azione non prevista dalla proposta metodologica del Comitato di coordinamento, l'Assemblea ha votato per maggioranza se voleva rivotare. Questo è successo in 3 occasioni.



Fotografia di Fondazione Innovazione Urbana

Terminate le votazioni, l'Assemblea ha eletto il Comitato di Monitoraggio. Tutte le persone che hanno dato disponibilità a farne parte, sia precedentemente all'incontro che durante, sono state chiamate per verificare la loro presenza e appartenenza ai diversi quartieri. L'Assemblea ha concordato che tutti i candidati facessero parte del Comitato. Il giorno successivo, altre persone hanno espresso la loro volontà di entrare a far parte del Comitato di Monitoraggio. Una volta chiesto al Comitato stesso se volesse integrare queste persone, sono state inserite all'interno del Comitato.

Come da Regolamento (art. 49 comma 5), durante l'ultimo incontro dell'Assemblea è stato eletto il Comitato di monitoraggio, composto da 22 membri.

## Esiti della votazione

In questo capitolo descriveremo brevemente gli esiti delle votazioni. Per un approfondimento sulla votazione e sui motivi degli esiti si rimanda all'appendice.

Sono state sottoposte a votazione:

- La proposta 5.b “Promuovere l’intermodalità e la mobilità condivisa” e le proposte di azione 5.b.1, 5.b.2 e 5.b.3
- La proposta 5.c “Aumentare le piste ciclabili e renderle più sicure” e la proposta di azione 5.c.1
- La proposta 6.a “Diminuire il traffico automobilistico privato e ridurre le emissioni” e le proposte di azione 6.a.1 e 6.a.4
- La proposta di azione 6.c.4
- La proposta 6.d “Disincentivare i voli privati e pubblici” e le proposte di azione 6.d.3 e 6.d.4

Prima di svolgere la votazione, ogni proposta e proposta di azione è stata letta ed i membri che avevano manifestato un dissenso hanno potuto esprimere il motivo di tale dissenso a tutti i membri dell’Assemblea.

La prima votazione si è svolta per le proposte di azione 5.b.1, 5.b.2 e 5.b.3 che sono state tutte approvate, così come la proposta 5.b.

La proposta di azione 5.c.1, invece, non ha raggiunto la maggioranza dei 2/3 dei voti. Tuttavia l’Assemblea ha deciso di riformulare tale proposta di azione e votarla nuovamente. L’esito di questa seconda votazione è stato positivo. Per cui si è sottoposto a votazione la proposta 5.c, che includeva la nuova formulazione della proposta di azione appena approvata, e l’Assemblea ha approvato anche la proposta 5.c.

Si procede a votare le proposte di azione 6.a.1 e 6.a.4 che risultano entrambe non approvate. Tuttavia, l’Assemblea decide di riformulare la proposta di azione 6.a.4 e di sottoporla nuovamente a votazione. Tale proposta di azione viene approvata. Si procede quindi a votare la proposta 6.a con le modifiche delle votazioni. La proposta 6.a viene approvata.

Dopodiché viene sottoposta a votazione la proposta di azione 6.c.4 che viene approvata.

Infine, mentre la proposta 6.d.3 viene approvata, la proposta di azione 6.d.4 viene rigettata dall’Assemblea. Pertanto, viene sottoposta a votazione la nuova proposta 6.d, che tiene conto dell’eliminazione della proposta di azione 6.d.4, e viene approvata.

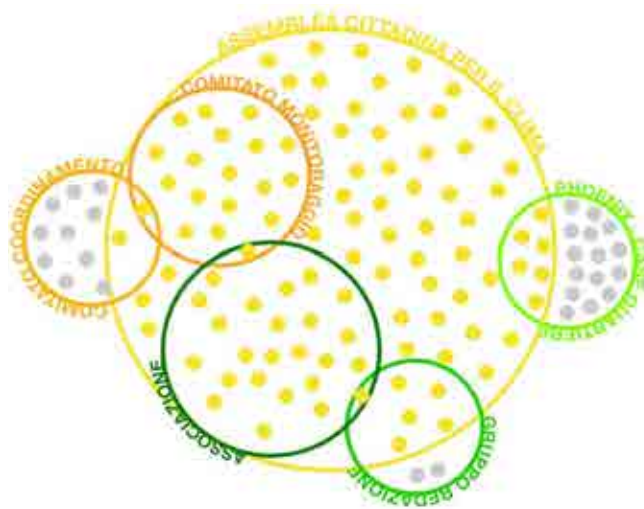
Si conclude così la fase di votazione delle proposte e delle proposte di azione.



Fotografie di Fondazione Innovazione Urbana

## Verso un radicamento sul territorio: oltre il mero ruolo di membri dell'Assemblea

L'Assemblea cittadina ha lavorato per far sì che la presenza dei cittadini e dei cittadine non sia solo dovuta a obblighi del Regolamento, come ad esempio la costituzione del gruppo di redazione e della volontà di costituirsi come Associazione, aumentando il ruolo di radicamento sul territorio dell'Assemblea. Sin da subito i membri dell'Assemblea hanno capito che la loro presenza in istanze relative ai Comitati e ad altri processi partecipativi che si svolgono sul territorio è un elemento di discussione importante. Per questo motivo, in questo capitolo, sono trattate le misure che permettono ai cittadini e alle cittadine di essere presenti per dare continuità in varie forme, all'Assemblea e porla in dialogo con altri strumenti partecipativi.



### Comitato di monitoraggio

È composto da una rappresentanza ristretta dei membri dell'Assemblea (22 membri) e, partecipando alle sedute delle competenti Commissioni consiliari, ha il compito di verificare periodicamente lo stato di attuazione delle proposte e raccomandazioni emerse dall'Assemblea.

### Comitato di coordinamento

La partecipazione delle due portavoce alle riunioni del Comitato di coordinamento ha avuto la finalità di portare il punto di vista e le esigenze dell'Assemblea all'interno delle discussioni sulla progettazione del processo e degli incontri dell'Assemblea stessa.

### Gruppo di redazione

Dopo la pausa estiva, su sollecitazione di alcuni membri dell'Assemblea, si è proposto di costituire un gruppo di redazione che potesse svolgere un ruolo di comunicazione verso l'esterno. Hanno aderito 8 membri dell'Assemblea che, con il supporto della Fondazione per l'Innovazione Urbana, hanno raccontato il percorso dell'Assemblea cittadina attraverso i loro canali social.

### Associazione

Alla fine dell'ultimo incontro dell'Assemblea, due membri dell'Assemblea hanno espresso la loro volontà di costituire una associazione, con chi fosse interessato, per non disperdere ciò che si è realizzato fino ad ora. La volontà è quella di dare un seguito alla formazione avuta durante l'Assemblea e creare un gruppo attivo sui temi del cambiamento climatico.

### Il consorzio PHOENIX e il progetto Case di Quartiere

L'Assemblea cittadina è entrata in dialogo anche con il progetto europeo PHOENIX (The rise of citizens voices for a Greener Europe), un progetto di ricerca finanziato dall'Unione Europea nel programma Horizon 2020, a cui aderisce il Comune di Bologna come città pilota, che ha l'obiettivo di studiare, arricchire e testare delle pratiche partecipative e deliberative che lavorano sulle sfide ambientali contemporanee. PHOENIX testerà le innovazioni democratiche in 11 territori pilota, tra i quali la città di Bologna, e creerà una Commissione Territoriale di Co-Design in ciascun territorio pilota. Il compito di questa Commissione è quello di progettare e condurre un processo partecipativo che ingaggi la comunità locale con l'obiettivo di coinvolgere le persone nel dibattito, nella creazione e nel miglioramento delle politiche ambientali. Tra le persone che compongono la Commissione Territoriale ci sono anche 6 membri dell'Assemblea cittadina che contribuiranno così ad identificare progettualità, approcci o alleanze utili all'implementazione del percorso.

## Appendice

### Votazione della proposta 5.b e delle proposte di azione 5.b.1, 5.b.2, 5.b.3

Proposte e proposte di azione votate	Numero di presenti	Presenze necessarie per approvare	Non sono per niente d'accordo		Non sono neanche un po' d'accordo		Sono molto d'accordo		Voti positivi		Numero di voti	% presenze	Esito della votazione
			Voti	%	Voti	%	Voti	%	Voti	%			
Proposta di azione 5.b.1	44	46	5	11,36%	19	43,18%	32	72,81%	42	95,45%	67	97%	Proposta di azione approvata
Proposta di azione 5.b.2	46	48	7	15,22%	8	17,39%	53	77,84%	61	68,71%	68	99%	Proposta di azione approvata
Proposta di azione 5.b.3	49	49	9	18,37%	19	38,78%	32	65,47%	42	85,71%	68	99%	Proposta di azione approvata
Proposta 5.b	49	49	16	32,65%	13	26,53%	41	83,20%	42	77,94%	68	99%	Proposta approvata
L'assemblea vuole votare una modifica della proposta 5.b?	49	49					44						L'assemblea decide di approvare una modifica
Modifica della proposta 5.b	71	47	34	47,89%	14	19,72%	32	45,39%	46	64,78%	70	100%	Proposta non approvata

#### Proposta di azione 5.b.1

La votazione è iniziata con la lettura della proposta di azione 5.b.1: “Miglioramento del servizio di bike sharing nelle sue quantità, aumentando la flotta pubblica di biciclette per il bike sharing, prevedendo nuovi hub nelle aree della città non ancora coperte e una dotazione che comprenda la possibilità di noleggiare il rimorchio porta-bambine e bambini o anche biciclette con rimorchio incorporato, oltre alla sperimentazione di un servizio di bike sharing specificamente dedicato alle scuole. Una prima soluzione utile potrebbe essere quella di aprire il servizio cittadino a più di un operatore, in modo da migliorare l'efficienza del servizio e la sua capillarità. Il territorio comunale potrebbe essere suddiviso in lotti diversi in modo da affidare il servizio a più soggetti e al tempo stesso da estendere il servizio alle zone sin qui non coperte della città.”

Due membri dell'Assemblea hanno spiegato i motivi del dissenso alla proposta 5.b. comprese le sue proposte di azione: “Come segnalato da molti di noi all'ultima riunione, non si può pretendere che i residenti di quelle zone debbano parcheggiare le loro auto a grande distanza se non hanno garage privati. E infatti fra le Azioni, questa non compare più, è rimasta solo nella parte introduttiva”.

“Le proposte di azione sono ragionevoli. Il problema è che come obiettivo c'è quello di penalizzare la mobilità delle auto. Questo poi si lega alla 5.c, che è quella veramente sbagliata: il fatto di ridurre e penalizzare i posti auto e le corsie auto per imporre la ciclabilità.”

“Non bisogna disincentivare l'utilizzo dell'automobile, perché ciò penalizza parte dei cittadini e non risolve alcun problema di emissioni CO2 al 2030 quando ibridizzazione e mobilità elettrica saranno già sufficientemente mature da ridurre ulteriormente l'impatto delle vetture circolanti sull'effetto serra. Non si devono ridurre i parcheggi auto per favorire l'utilizzo della bicicletta, è sbagliato perché ciò crea maggior traffico nella ricerca di un parcheggio, penalizzando ulteriormente le emissioni di CO2 delle vetture circolanti”.

“Riducendo i parcheggi, in realtà non riduco la CO2, ma anzi probabilmente peggioro la situazione”.

“Le proposte 5.b e 5.c sono simili e avevo unito i commenti. La progressiva riduzione degli stalli per parcheggio delle auto è senza senso perché crea problemi. Non si dice mai in centro, si dice in città e non si dice se è città Comune o città metropolitana. Le cose sono diverse: un conto è il centro, uno è la città ed un altro è la Provincia. Già questo è vago e andrebbe definito perché una cosa che va bene per il centro può non andar bene se lo allarghi. Quindi la riduzione degli stalli può creare problemi dappertutto. Ma la cosa grave è questa contrapposizione di bici contro auto. Facciamo auto contro bici, bici contro pedoni. Se facciamo così non ne usciamo più, bisogna armonizzare. Chi è più forte in questa catena, l'auto è più forte della bici e la bici del pedone, dovrebbe anche farsi carico di proteggere il più debole. Poi propone un modello di città troppo radicale. Se devi portare la mamma novantenne in ospedale come si fa? Mi è stato detto che vai in autobus, così ho capito che ha una mamma giovane. Perché non è possibile. Non si può eliminare completamente i parcheggi delle auto”.

Dopo che sono stati spiegati i motivi del dissenso, si procede alla votazione prima delle proposte di azione e poi della proposta.

L'Assemblea ha votato la proposta di azione 5.b.1, il cui risultato è: 62 voti favorevoli, 5 contrari e 2 astenuti. I favorevoli sono pari al 92,54% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 46 voti.

### **Proposta di azione 5.b.2**

La votazione è iniziata con la lettura della proposta di azione 5.b.2: “Realizzazione di parcheggi scambiatori, fuori dal centro città dedicati a chi deve percorrere piccole distanze, con la possibilità di parcheggiare l'auto e prendere la bicicletta dotandoli di un accesso al bike sharing. Il primo elemento su cui basare l'ampliamento degli hub per bikesharing e biciclette tradizionali dovrebbe essere quello di uscire dalla cerchia della città storica. In secondo luogo si potrebbe adottare come criterio quello dei principali spazi di interesse (es. parchi urbani, aree produttive, o altre zone dove si concentrano servizi) per pianificare la costruzione di nuovi hub. Infine un'attenzione particolare va prestata al tema della sicurezza contro i furti di bici, dotando i parcheggi per bici tradizionali di gabbioni dove parcheggiarle al sicuro.”

L'Assemblea ha votato la proposta di azione 5.b.2, il cui risultato è: 61 voti favorevoli, 7 contrari e 1 astenuto. I favorevoli sono pari all'89,71% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 46 voti.

### **Proposta di azione 5.b.3**

La votazione è iniziata con la lettura della proposta di azione 5.b.3: “Doppio binario: bicicletta e TPL. Il Piano della mobilità della città di Bologna deve incentrarsi su due assi tra loro interconnessi: mobilità ciclabile e utilizzo del TPL. In quest'ottica devono essere riviste tutte le scelte e le trasformazioni della rete infrastrutturale, dando priorità a questi due assi anche dal punto di vista tecnico (dislocazione stazioni, parcheggi scambiatori, larghezza delle corsie ecc). Questo significa che in prossimità dei nodi strategici della rete di trasporto pubblico urbano devono essere previsti parcheggi per le auto, in modo da scoraggiare l'uso del mezzo privato a motore all'interno della città. Il costo del parcheggio dovrebbe inoltre essere definito in base a criteri di progressività (es: si paga di più per la seconda auto che si parcheggia).”

L'Assemblea ha votato la proposta di azione 5.b.3, il cui risultato è: 62 voti favorevoli, 6 contrari e 1 astenuto. I favorevoli sono pari al 91,18% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 46 voti.

### **Proposta 5.b**

La votazione è iniziata con la lettura della proposta 5.b: “Un progressivo abbattimento del traffico automobilistico privato non è sostenibile senza mettere in campo una serie adeguata di azioni che rendano concretamente agevole l'uso della bicicletta in città. Si tratta innanzitutto di una questione quantitativa e strutturale, che richiama lo sforzo di implementare il parco pubblico di bike sharing, la dislocazione spaziale di stazioni e hub in prossimità dei principali servizi; ma anche una questione di giustizia sociale, tesa a rendere conveniente e accessibile a tutte e tutti l'uso della bicicletta. Questo si traduce anche in scelte “radicali” a scapito della mobilità privata a motore, quali ad esempio la progressiva riduzione degli stalli di parcheggio per le auto, in modo da far posto a parcheggi per il bike sharing e più in generale per le biciclette.

Per raggiungere questo obiettivo, si propone di migliorare il servizio di bike sharing nelle sue quantità; realizzare parcheggi scambiatori, fuori dal centro città con la possibilità di parcheggiare l'auto e prendere la bicicletta dotandoli di un accesso al bike sharing e di gabbioni per parcheggiare la propria bici e promuovere l'interconnessione tra mobilità ciclabile e utilizzo di TPL.”



L'Assemblea ha votato la proposta 5.b. il cui risultato è: 62 voti favorevoli, 6 contrari e 1 astenuto. I favorevoli sono pari al 91,18% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 46 voti.

### **Proposta di modifica da parte dell'Assemblea della proposta di azione 5.b**

Due membri dell'Assemblea spiegano che loro vorrebbero riportare a voto una versione di questa proposta modificata. Specificano che il loro dissenso era solamente su una frase della proposta 5.b.

L'Assemblea ha votato a favore di riportare a voto la proposta 5.b. 44 membri su 68 si esprimono a favore della nuova votazione. In questo caso si conta la maggioranza semplice e non di 2/3 in quanto il Regolamento specifica che questa maggioranza vale solamente per la votazione delle proposte e raccomandazioni.

Siccome la proposta è già stata approvata, l'Assemblea ritiene opportuno votare se si è d'accordo sull'eliminazione della frase oggetto del dissenso, ossia: "Questo si traduce anche in scelte "radicali" a scapito della mobilità privata a motore, quali ad esempio la progressiva riduzione degli stalli di parcheggio per le auto, in modo da far posto a parcheggi per il bike sharing e più in generale per le biciclette."

L'Assemblea procede alla votazione della seguente domanda: Siete d'accordo con l'eliminazione della seguente frase dalla proposta 5.b. "Questo si traduce anche in scelte "radicali" a scapito della mobilità privata a motore, quali ad esempio la progressiva riduzione degli stalli di parcheggio per le auto, in modo da far posto a parcheggi per il bike sharing e più in generale per le biciclette"?

L'Assemblea ha votato sull'eliminazione di un frammento di proposta 5.b, il cui risultato è: 46 voti favorevoli e 24 contrari. I favorevoli sono pari al 65,71% e la proposta **non viene approvata** dall'Assemblea in quanto non ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

Pertanto si mantiene la proposta 5.b così come formulata inizialmente.

## **Votazione della proposta di azione 5.c.1 e della proposta 5.c**

Proposte e proposte di azione votate	Numero di presenti	Presenze necessarie per approvare	Non sono per niente d'accordo		Non sono interessato/e ma non mi oppongo		Sono molto d'accordo		Voti positivi		Maggioranza di voti	% presenza alla votazione	Esito della votazione
			Voti	%	Voti	%	Voti	%	Voti	%			
Proposta di azione 5.c.1	70	47	25	35,71%	8	11,43%	38	51,43%	48	64,29%	70	100%	Proposta di azione non passata
L'assemblea vuole votare una modifica della proposta di azione 5.c.1?	70	38					48	100,00%			48	69%	L'assemblea decide di non votare la proposta
Modifica della proposta 5.c.1	70	47	5	7,14%	18	25,71%	50	71,43%	68	91,43%	70	100%	Proposta di azione approvata
Proposta di azione 5.c con le modifiche delle votazioni precedenti	70	47	1	1,43%	18	25,71%	53	75,71%	68	91,43%	70	100%	Proposta approvata

La votazione è iniziata con la lettura della proposta di azione 5.c.1: "Aumento del numero di piste ciclabili, anche a scapito dei parcheggi per le auto, secondo l'approccio della progressiva riduzione degli stalli richiamato nella proposta 5.b. Occorre implementare la realizzazione di piste ciclabili estendendo la rete a zone ancora non troppo coperte della città e mantenere costantemente quelle esistenti. Se si vuol promuovere la sicurezza occorre evitare di ricorrere alla realizzazione di semplici "corsie" che rappresentano spesso una soluzione promiscua che non mette in sicurezza chi pedala. C'è la consapevolezza che questo significhi intervenire in maniera più strutturale sulla conformazione della rete infrastrutturale esistente: per questo si propone la progressiva riduzione di stalli dedicati al parcheggio delle auto per fare posto alla realizzazione di piste ciclabili e non compromettere la fruibilità delle sedi stradali da parte dei mezzi di soccorso o del trasporto pubblico. L'obiettivo deve essere quello di aumentare lo spazio

disponibile per il transito delle biciclette, senza sacrificare lo spazio destinato ai mezzi del tpl. Se - come confermato dal confronto con i tecnici - non è possibile realizzare ovunque piste ciclabili per un problema riconducibile principalmente alla larghezza delle strade - si deve comunque prevedere la realizzazione di corsie adeguatamente segnalate, con striscia continua e non tratteggiata. Nel pianificare la realizzazione di nuove piste/corsie il criterio cui rifarsi secondo un'ottica di graduale e progressiva estensione a tutta la città, potrebbe essere quello della presenza di hub di bike sharing, fermate dei bus navetta, e parcheggi scambiatori.”

Due membri dell'Assemblea hanno spiegato i motivi del dissenso alla proposta di azione 5.c.1:

“Non credo che l'eliminazione di parcheggi per auto in favore di piste ciclabili sia un'azione efficace e risolutiva per gli obiettivi posti. Bisognerebbe valutare la questione in maniera più ampia, incentivare l'uso dell'auto elettrica semmai, valutare il rapporto tra abitanti, auto e spazi disponibili per quartiere, sondare le abitudini dei cittadini e capire come, quando e perché si spostano in auto. Sostenere di voler eliminare i parcheggi per le auto per fare posto a piste ciclabili mi pare un discorso alquanto semplicistico.”

L'Assemblea ha votato la proposta di azione 5.c.1, il cui risultato è: 45 voti favorevoli e 25 contrari. I favorevoli sono pari al 64,29% e la proposta **non viene approvata** dall'Assemblea in quanto non ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

Due membri dell'Assemblea vorrebbero rivotare la proposta di azione riformulata, perché nessuna persona può essere contraria ad aumentare e migliorare le piste ciclabili, ma forse è scritta male. Perché non c'è bisogno di mischiare le cose: togliere parcheggi e aumentare le piste ciclabili. Ci sono esempi di strade, come via Massarenti, che non hanno parcheggi.

L'Assemblea ha votato a favore di riportare a voto la proposta di azione 5.c.1: 48 membri su 68 si esprimono a favore della nuova votazione. In questo caso si conta la maggioranza semplice e non di 2/3 in quanto il Regolamento specifica che questa maggioranza vale solamente per la votazione delle proposte e raccomandazioni.

I due membri dell'Assemblea propongono quindi una nuova riformulazione della proposta di azione 5.c.1, eliminando il riferimento alla cancellazione dei parcheggi.

La votazione è iniziata con la lettura della proposta di azione 5.c.1 riformulata come segue: “Aumento del numero di piste ciclabili, estendendo la rete a zone ancora non troppo coperta della città. Occorre implementare la realizzazione di piste ciclabili estendendo la rete a zone ancora non troppo coperte della città e mantenere costantemente quelle esistenti. Se si vuol promuovere la sicurezza occorre evitare di ricorrere alla realizzazione di semplici “corsie” che rappresentano spesso una soluzione promiscua che non mette in sicurezza chi pedala. L'obiettivo deve essere quello di aumentare lo spazio disponibile per il transito delle biciclette, senza sacrificare lo spazio destinato ai mezzi del tpl. Se - come confermato dal confronto con i tecnici - non è possibile realizzare ovunque piste ciclabili per un problema riconducibile principalmente alla larghezza delle strade - si deve comunque prevedere la realizzazione di corsie adeguatamente segnalate, con striscia continua e non tratteggiata. Nel pianificare la realizzazione di nuove piste/corsie il criterio cui rifarsi secondo un'ottica di graduale e progressiva estensione a tutta la città, potrebbe essere quello della presenza di hub di bike sharing, fermate dei bus navetta, e parcheggi scambiatori.”?

L'Assemblea ha votato la proposta di azione 5.c.1, il cui risultato è: 68 voti favorevoli e 2 contrari. I favorevoli sono pari al 97,14% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### **Votazione della proposta 5.c**

Siccome è stata approvata una formulazione diversa della proposta di azione 5.c.1, il testo della proposta 5.c è cambiato. Pertanto, l'Assemblea deve esprimersi sulla nuova formulazione della proposta 5.c.

L'Assemblea procede alla votazione della seguente domanda: “Siete d'accordo con la seguente nuova formulazione delle proposta 5.c “A Bologna “non si perde neanche un...” ciclista. Se si vuol raggiungere l'obiettivo di

un “sorpasso” delle biciclette sulle auto private non c’è solo da moltiplicare le infrastrutture di accesso alla mobilità ciclabile, ma c’è bisogno anche di mettere in sicurezza chi pedala. Sono ancora troppi infatti gli incidenti che vedono coinvolte le persone che utilizzano la bicicletta in città: un elemento che scoraggia non poco chi per esempio vorrebbe spostarsi con i propri figli al seguito in modo da educarli all'utilizzo di questo mezzo.

Per dare maggiore sicurezza a chi pedala e avere più bici che auto, si propone di aumentare il numero di piste ciclabili, estendendo la rete a zone ancora non troppo coperte della città; qualificare ulteriormente le piste ciclabili, rendendole più sicure e connettendo tutte le scuole elementari e medie; migliorare la segnaletica e migliorare l’illuminazione delle piste e corsie ciclabili.”?

L’Assemblea ha votato la proposta 5.c. il cui risultato è: 69 voti favorevoli e 1 contrario. I favorevoli sono pari al 98,57% e la proposta viene **approvata** dall’Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### **Votazione della proposta 6.a e le proposte di azione 6.a.1 e 6.a.4**

Proposte e proposte di azione votate	Numero di proponenti	Frazioni favorevoli (inc. astensione)	Non sono per niente d'accordo		Non sono nemmeno per niente d'accordo		Sono molto d'accordo		Voti (assenti)		Maggioranza richiesta	% favorevoli su totale emesso	Esito della votazione
			Voti	%	Voti	%	Voti	%	Voti	%			
Proposta di azione 6.a.1	40	41	48	98,57%	18	37,50%	0	0,00%	25	31,43%	70	100%	Proposta di azione con passella
Proposta di azione 6.a.4	41	41	22	53,57%	11	26,83%	13	31,60%	43	61,43%	70	100%	Proposta di azione con passella
"L'assemblea vuole votare una modifica della proposta di azione 6.a.4?"	4	4	0	0,00%	0	0,00%	12	75,00%	0	0,00%	70	100%	L'assemblea vota una modifica di azione con passella
Modifica della proposta 6.a.4	4	4	3	75,00%	1	25,00%	57	80,26%	16	22,22%	71	100%	Proposta di azione con passella
Proposta 6.a con le modifiche delle votazioni precedenti	7	7	16	88,54%	1	14,29%	51	71,85%	19	27,14%	71	100%	Proposta approvata

La votazione è iniziata con la lettura della proposta di azione 6.a.1: “Creazione nel territorio di Bologna di numerosi poli di produzione di idrogeno verde, che potrebbero produrre energia per i mezzi pubblici a partire dal raccoglimento delle acque piovane.”

Due membri dell’Assemblea hanno spiegato i motivi del dissenso alla proposta di azione 6.a.1:

“L’idrogeno verde lascia il tempo che trova. Ma visto tutto quello che è successo, preferisco lasciarla così com’è.”

“L’idrogeno verde non esiste, ma lasciamola lì, poi il Comune vedrà cosa farci. Parlare di idrogeno verde al Comune fa fare una figuraccia all’Assemblea”

“L’idrogeno verde non esiste. Facciamo i poli idrogeno, facciamo gli investimenti e poi ci accorgiamo che non esiste. Visto che non esiste, suggerisce al Comune di investire sull’idrogeno verde che tanto prima di 20 o 30 anni, se mai dovesse esistere, non esisterà, sono soldi che potrebbero essere investiti meglio in altre cose. Ma se ritenete che sia opportuno parlare di idrogeno verde nonostante non esista, lo facciamo.”

“Impedire l’uso dell’automobile. Non mi piace che mi si impedisca qualche cosa, lo trovo inadatto. Per il resto, l’idrogeno verde non ve lo devo dire io, ma forse non esisterà nemmeno tra 40 anni.”

L’Assemblea ha votato la proposta di azione 6.a.1, il cui risultato è: 43 voti favorevoli e 27 contrari. I favorevoli sono pari al 61,43% e la proposta **non viene approvata** dall’Assemblea in quanto non ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### **Proposta di azione 6.a.4**

La votazione è iniziata con la lettura della proposta di azione 6.a.4: “Promozione di interventi volti a disincentivare l’auto privata. Un importante incentivo su questo fronte potrebbe essere costruire parcheggi scambiatori

fuori dal centro città dedicati a chi deve percorrere piccole distanze, con la possibilità di prendere navetta e altri mezzi pubblici con un unico biglietto per il trasporto integrato (vedi obiettivo 2). In ottica di adattamento ai cambiamenti climatici, questi parcheggi scambiatori dovrebbero prevedere porzioni rinaturalizzate e con rivestimenti fotovoltaici, sul modello del Parco Nord. Si propone anche di promuovere l'utilizzo di car sharing e moto sharing, sviluppando campagne pubblicitarie dedicate aumentando la disponibilità di mezzi in tutta l'area cittadina. Tra i disincentivi invece viene menzionato l'aumento di autovelox in aree urbane, ma anche l'aumento dei prezzi dei parcheggi, laddove disponibile il mezzo pubblico. L'aumento dei prezzi deve essere commisurato alla disponibilità di mezzi pubblici. I guadagni ricavati da multe e altre tasse di questo tipo dovrebbero essere vincolati al reinvestimento in mezzi pubblici o iniziative analoghe.”

#### Due membri dell'Assemblea hanno spiegato i motivi del dissenso alla proposta di azione 6.a.4:

“Non sono d'accordo che il disincentivo dell'uso dell'auto privata debba passare attraverso l'utilizzo di azioni punitive quali uso di autovelox, aumento dei costi dei parcheggi, multe e tasse. Non credo sia la chiave giusta per il raggiungimento degli obiettivi di questa assemblea.”

L'Assemblea ha votato la proposta di azione 6.a.4, il cui risultato è: 22 voti favorevoli e 48 contrari. I favorevoli sono pari al 31,43% e la proposta **non viene approvata** dall'Assemblea in quanto non ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

Un membro dell'Assemblea afferma che “per una singola votazione siamo passati da disincentivare l'auto privata a non disincentivarla per niente. Mi sembra un cambiamento troppo radicale. Con un voto siamo passati da 100 a 0”.

Un altro membro dell'Assemblea spiega che è essenziale mantenere il disincentivo alle auto private in questo documento.

Un altro membro spiega che il problema di questa proposta è che ignora i/le residenti a livello di quartiere. Non è un problema di autovelox, ma non si può dire a chi risiede di andare a parcheggiare fuori dal proprio quartiere perché non può entrarci. Bisogna mettere una forma di rispetto per chi risiede. Molti non hanno un garage o un giardino e parcheggiano in strada.

Due membri dell'Assemblea vorrebbero rivotare la proposta riformulata, perché il punto molto importante in questa proposta è quello dei parcheggi scambiatori, anche per i residenti. Per cui la questione centrale è quella di promuovere i parcheggi scambiatori e non i disincentivi. Se il problema sono questi disincentivi, allora la proposta è di toglierli.

L'Assemblea ha votato a favore di riportare a voto la proposta di azione 6.a.4: 52 membri su 68 si esprimono a favore della nuova votazione. In questo caso si conta la maggioranza semplice e non di 2/3 in quanto il Regolamento specifica che questa maggioranza vale solamente per la votazione delle proposte e raccomandazioni.

I due membri dell'Assemblea propongono quindi una nuova riformulazione della proposta di azione 6.a.4, eliminando il riferimento ai disincentivi.

L'Assemblea procede alla votazione della seguente domanda: “Siete d'accordo con la nuova formulazione della proposta di azione 6.a.4 così riformulata “Promozione di interventi volti a disincentivare l'auto privata. Un importante incentivo su questo fronte potrebbe essere costruire parcheggi scambiatori fuori dal centro città dedicati a chi deve percorrere piccole distanze, con la possibilità di prendere navetta e altri mezzi pubblici con un unico biglietto per il trasporto integrato (vedi obiettivo 2). In ottica di adattamento ai cambiamenti climatici, questi parcheggi scambiatori dovrebbero prevedere porzioni rinaturalizzate e con rivestimenti fotovoltaici, sul modello del Parco Nord. Si propone anche di promuovere l'utilizzo di car sharing e moto sharing, sviluppando campagne pubblicitarie dedicate aumentando la disponibilità di mezzi in tutta l'area cittadina.”?

L'Assemblea ha votato la proposta di azione 6.a.4, il cui risultato è: 66 voti favorevoli e 5 contrari. I favorevoli sono pari al 92,96% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### **Votazione della proposta 6.a**

Siccome è stata approvata una formulazione diversa della proposta di azione 6.a.4, il testo della proposta 6.a è cambiato. Pertanto, l'Assemblea deve esprimersi sulla nuova formulazione della proposta 6.a.

L'Assemblea procede alla votazione della seguente domanda: Siete d'accordo con la seguente nuova formulazione delle proposta 6.a "Una Bologna con meno auto è una Bologna per i pedoni, dove le persone sono libere di vivere nelle strade e riprendersi lo spazio urbano. Per questo è importante che il Comune di Bologna si dedichi contemporaneamente all'abbattimento del traffico automobilistico ad uso privato e all'abbattimento delle emissioni connesse a questo. Su questo fronte è importante sottolineare come le due direzioni di lavoro siano inscindibili. Secondo l'assemblea infatti non è accettabile puntare esclusivamente sugli incentivi per auto elettriche, se questo vuol dire trascurare il generale abbattimento del traffico privato. Promuovere l'uso di automobili sostenibili e disincentivare l'uso dell'automobile in generale può apparire come una contraddizione in termini. Secondo l'assemblea si tratta in realtà di obiettivi che possono coesistere su un orizzonte temporale diverso: un obiettivo di breve periodo (promuovere automobili elettriche) e un obiettivo di lungo periodo (abbattere il traffico automobilistico). Resta ancora da chiarire quali siano le fattispecie in cui il ricorso all'automobile si riconosce come davvero "necessario", e a quali organismi competenza la risposta a questa domanda.

Al fine di abbattere il traffico automobilistico privato e incentivare l'uso di automobili sostenibili, si propone di incentivare il ricorso ad auto elettriche riconoscendole come soluzione "di transizione"; rendere davvero sostenibile l'auto elettrica; promuovere interventi volti a disincentivare l'auto privata; rimuovere le barriere di accesso ai servizi di car sharing e fare una valutazione dell'impatto sanitario che il Passante di Mezzo avrà sulla salute della cittadinanza bolognese?"

L'Assemblea ha votato la proposta 6.a, il cui risultato è: 55 voti favorevoli e 16 contrari. I favorevoli sono pari al 77,46% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### **Votazione della proposta di azione 6.c.4**

Proposte e proposte di azione votate	Numero di presenti	Presenze necessarie per approvare	Non sono per niente d'accordo		Non sono pienamente d'accordo ma non mi oppongo		Sono molto d'accordo		Voti positivi		Maggioranza richiesta	Maggioranza raggiunta	Esito della votazione
			Voti	%	Voti	%	Voti	%	Voti	%			
Proposta di azione 6.c.4	70	47	14	20,00%	11	15,71%	45	64,29%	56	80,00%	70	100%	Proposta di azione approvata

La votazione è iniziata con la lettura della proposta di azione 6.c.4: "Ricorso allo smart working quando possibile, ad esempio incentivando aziende e uffici pubblici e anche i privati a fare ricorso allo smart working flessibile - ma anche contribuendo a garantire l'effettivo rispetto delle ore di lavoro agile già contrattualizzate e favorendo lo sviluppo di parametri chiari nella definizione dello smart working in fase di contrattualizzazione anche extra CCNL."

Viene letto il motivo del dissenso:

"Perché, come discusso nell'ultima riunione dell'Assemblea, non sembra proponibile obbligare Aziende e Enti Pubblici allo smart working senza tener conto delle Leggi nazionali e locali e perché non è detto che lavorando a casa propria i lavoratori facciano meno ricorso ad impianti di climatizzazione."

L'Assemblea ha votato la proposta di azione 6.c.4, il cui risultato è: 56 voti favorevoli e 14 contrari. I favorevoli sono pari all'80% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

## Votazione della proposta di azione 6.d.3, 6.d.4 e della proposta 6.d

Proposte e proposte di azione votate	Numero di presenti	Presenze assolute per sportellare	Non sono per niente d'accordo		Sono semi contrari ma non mi oppongo		Sono molto d'accordo		Voti positivi		Numero di voti validi	La proposta che hanno votato	Esito della votazione
			Voti	%	Voti	%	Voti	%	Voti	%			
Proposta di azione 6.d.3	70	47	21	30,00%	18	25,71%	31	44,29%	48	70,00%	70	100%	Proposta di azione approvata
Proposta di azione 6.d.4	70	47	33	47,14%	11	15,31%	24	34,29%	27	42,86%	70	100%	Proposta di azione non approvata
Proposta 6.d	70	47	18	25,71%	14	19,08%	38	54,29%	52	74,29%	70	100%	Proposta approvata

La votazione è iniziata con la lettura della proposta di azione 6.d.3: “Ove possibile, disincentivo o divieto al ricorso a voli privati con ogni mezzo disponibile, ad esempio attraverso specifiche tassazioni. Si segnala a tale proposito che le tassazioni monetarie potrebbero non essere un deterrente commisurato al patrimonio degli utilizzatori di voli privati. Un'altra soluzione prevede lo scollegamento dal sito aeroportuale delle aziende che propongono/gestiscono voli privati e/o l'aumento delle tariffe per servizi offerti a voli e compagnie private (es. servizi di rifornimento).”

Viene letto il motivo del dissenso: “Non si possono vietare i voli privati.”

L'Assemblea ha votato la proposta di azione 6.d.3, il cui risultato è: Il risultato della votazione è il seguente: 49 voti favorevoli e 21 contrari. I favorevoli sono pari al 70% e la proposta viene **approvata** dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### Votazione della proposta di azione 6.d.4

La votazione è iniziata con la lettura della proposta di azione 6.d.4: “Quando possibile, divieto alla pubblicità di voli e compagnie aeree sul territorio comunale.”

Viene letto il motivo del dissenso:

“Credo sia eccessivo vietare le pubblicità di voli aerei e sia un'azione senza nessun valore aggiunto per il raggiungimento degli obiettivi dell'assemblea.”

L'Assemblea ha votato la proposta di azione 6.d.4, il cui risultato è: 37 voti favorevoli e 33 contrari. I favorevoli sono pari al 52,86% e la proposta **non viene approvata** dall'Assemblea in quanto non ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

### Votazione della proposta 6.d

Siccome è stata eliminata la proposta di azione 6.d.4, il testo della proposta 6.a è cambiato. Pertanto, l'Assemblea deve esprimersi sulla nuova formulazione della proposta 6.a.

L'Assemblea procede alla votazione della seguente domanda: Siete d'accordo con la seguente nuova formulazione delle proposta 6.d “Una Non è certo un segreto il fatto che l'aereo sia il mezzo di trasporto più impattante in termini di CO2 e polveri sottili emesse nell'aria. Per questo, per una città a emissioni zero che voglia promuovere la giustizia climatica e la salute dei e delle bolognesi è fondamentale limitare il più possibile il traffico aereo in generale e quello privato in particolare, in ogni modo possibile.

Quello della mobilità aerea è un tema che non è di competenza comunale, su cui il Comune di Bologna può difficilmente legiferare in modo diretto. Nonostante questo, per l'Assemblea resta comunque importante capire quale ruolo possa giocare l'amministrazione per contribuire al progressivo abbandono di cittadini/e e consumatori/trici dei voli pubblici e privati. Al fine di limitare il traffico aereo, in particolare quello privato, si propone di promuovere le opportunità ferroviarie di Bologna; sviluppare piattaforme online per promuovere il viaggio sostenibile; disincentivare o vietare, dove possibile, il ricorso a voli privati con ogni mezzo disponibile ed apprendere nuove strategie aderendo a reti esistenti sul tema.”?

L'Assemblea ha votato la proposta 6.d, il cui risultato è: Il risultato della votazione è il seguente: 52 voti favorevoli e 18 contrari. I favorevoli sono pari al 74,29% e la proposta viene approvata dall'Assemblea in quanto ha raggiunto la maggioranza dei 2/3 richiesta dal Regolamento, che in questa votazione era pari a 47 voti.

## Link utili

[Pagina Assemblea cittadina su Partecipa](#)

[Sezione “Formazione e Documenti utili”](#) - si possono trovare i temi ed i documenti della formazione, i report dei Comitati, i materiali informativi e gli atti amministrativi riguardanti l’Assemblea cittadina

[Manifestazione di interesse per la partecipazione agli incontri di ascolto e confronto da parte dei rappresentanti di soggetti portatori di interessi.](#)

[Sezione “Ascolto”](#) - si possono trovare le istituzioni ed i portatori di interesse ascoltati durante la seconda fase dell’Assemblea cittadina per il Clima

[Sezione “Deliberazione”](#) - si possono trovare gli articoli sullo svolgimento degli incontri di deliberazione e di votazione

[Sezione “Osservazione”](#) - si possono trovare le modalità per inviare una manifestazione di interesse qualora si fosse stati interessati ad effettuare attività di ricerca e osservazione

[Linee guida per l’autoregolamentazione delle attività di osservazione esterna dell’Assemblea Cittadina](#)

[Sezione “Domande frequenti”](#)

[Link registrazione primo incontro](#)

[Link registrazione secondo incontro](#)

[Link registrazione terzo incontro - Parte prima](#)

[Link registrazione terzo incontro - Parte seconda](#)

[Link registrazione quarto incontro - Parte prima](#)

[Link registrazione quarto incontro - Parte seconda](#)

[Link registrazione quarto incontro - Parte terza](#)

[Link registrazione nono incontro - Parte prima](#)

[Link registrazione nono incontro - Parte seconda](#)





Bologna Missione Clima



**ASSEMBLEA  
CITTADINA  
PER IL CLIMA  
DI BOLOGNA**

# **Raccomandazioni e proposte dell'Assemblea cittadina per il Clima**



**Comune  
di Bologna**

**fondazione  
innovazione urbana**



CARICO  
MASSIMO  
300 kg/m²

Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana

# Indice

---

**Raccomandazione 1. Bologna neutrale è la nostra casa sostenibile**

**Raccomandazione 2. Bologna neutrale è una grande comunità di condivisione di energie rinnovabili**

**Raccomandazione 3. Bologna neutrale è più verde e più blu**

**Raccomandazione 4. Bologna neutrale è il tuo modello di vita da coltivare**

**Raccomandazione 5. Bologna neutrale è una città che riorganizza i propri spazi per la mobilità sostenibile**

**Raccomandazione 6. Bologna neutrale è in movimento collettivo ed ecosostenibile**





Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana





# Raccomandazione 1

Il patrimonio edilizio impatta per il 75% nella produzione di CO<sub>2</sub> a Bologna, rendendo la riqualificazione degli edifici esistenti e dei nuovi edifici tema centrale per mitigare le emissioni e promuovere l'adattamento ai cambiamenti climatici in corso.

Il Comune e gli enti di livello superiore sono già dotati di strumenti amministrativi e strumenti di incentivazione che regolano il settore, da cui è importante partire per facilitare e garantire da una parte la loro effettiva attuazione e dall'altra la possibilità per la cittadinanza e le imprese di usufruirne.

Strumenti come il Regolamento Edilizio (RE) e il Piano d'Azione per l'Energia Sostenibile e il Clima (PAESC) già individuano obiettivi di sostenibilità per le nuove edificazioni e gli interventi di ristrutturazione degli edifici esistenti ma per i non addetti ai lavori risulta difficile avere contezza della loro effettiva attuazione e del loro impatto.

Rispetto invece ai vari incentivi erogati a livello nazionale, regionale, comunale, cittadinanza e imprese hanno spesso difficoltà di accesso per la continua evoluzione della normativa, la complessità delle informazioni, e la mancanza di garanzie finanziarie.

Dato l'impatto economico degli interventi nel settore edilizio, la sfida delle politiche e delle misure attuate in quest'ambito è trovare soluzioni e meccanismi che permettano di realizzare gli interventi garantendo l'erogazione dei servizi attuali e prestando particolare attenzione a chi ha maggiori difficoltà economiche.

**Per superare la sfida e raggiungere quanto detto, si raccomanda di promuovere campagne di sensibilizzazione e aumentare la consapevolezza; di promuovere una collaborazione tra pubblico e privato per la riqualificazione del patrimonio edilizio; di individuare forme di incentivo e sostegno e di promuovere gli edifici a impatto zero.**



# Bologna neutrale è la nostra casa sostenibile

---

## Proposta 1.a. **Promuovere campagne di sensibilizzazione e aumentare la consapevolezza**

Strumenti come il Regolamento Edilizio (RE) e il Piano d'Azione per l'Energia Sostenibile e il Clima (PAESC) già individuano obiettivi di sostenibilità per le nuove edificazioni e gli interventi di ristrutturazione degli edifici esistenti ma per i non addetti ai lavori risulta difficile avere contezza della loro effettiva attuazione e del loro impatto. Il primo passo per rendere concreti gli strumenti nuovi e già vigenti è lavorare su un'importante campagna di sensibilizzazione e comunicazione, che punti a mettere in luce i vantaggi che si ottengono mettendo in atto interventi di riqualificazione e aiuti alla cittadinanza e alle imprese a comprendere le opportunità che ci sono e i successivi passi da compiere.

**A tal proposito, si propone di realizzare percorsi formativi per gli/le amministratori/trici di condominio; ampliare le esperienze che hanno ottenuto buoni risultati nell'ambito della sensibilizzazione; istituire una figura esperta nell'ambito della riqualificazione; promuovere la partecipazione attiva nelle politiche di efficientamento energetico; comunicare e rafforzare gli sportelli informativi e di consulenza tecnica e realizzare uno strumento di informazione e di sensibilizzazione di quartiere.**

### Proposte di azione

- 1. Realizzazione di percorsi formativi rivolti agli/le amministratori/trici di condominio** e di interventi nelle assemblee di condominio da parte di personale qualificato. Gli amministratori di condominio vengono infatti individuati come attori fondamentali da coinvolgere, anello strategico nell'informare i residenti circa agevolazioni e opportunità esistenti e gli interventi di mitigazione e adattamento che potrebbero da una parte migliorare l'impronta ecologica dell'edificio e allo stesso tempo avere dei vantaggi sul lungo termine in termini di consumi e di comfort dell'abitare. Data la difficoltà nel coinvolgere la categoria degli amministratori in attività di formazione e poi di diffusione presso i propri condomini, è importante individuare forme di incentivo, quale l'ottenimento di crediti formativi, l'individuazione di un titolo di riconoscimento che identifichi amministratori formati su questi temi. D'altra parte, promuovere campagne di sensibilizzazione rivolte alla cittadinanza potrebbe portare gli stessi abitanti a richiedere ai propri amministratori una preparazione maggiore su questi temi e la possibilità di realizzare interventi.
- 2. Estensione dell'iniziativa Progetto Condomini come indicato dal PAESC.** L'iniziativa Progetto Condomini, condotta dal Comune di Bologna nel 2015, deve essere presa come modello ed estesa come indicato dal PAESC, che cita questa iniziativa come una progettualità da proporre nuovamente e che ha reso evidente come "una struttura pubblica possa avere un ruolo di facilitazione sul territorio, consentendo l'aggregazione della domanda, l'incrocio tra domanda e offerta".
- 3. Istituzione di una figura esperta nell'ambito delle riqualificazione** che faccia consulenza ai privati, sull'esempio dell'energy manager.
- 4. Promozione della partecipazione attiva** della cittadinanza **nelle politiche di efficientamento energetico.**
- 5. Messa in opera degli One-stop-shops o sportelli unici.** Come da direttiva UE, è urgente la attuazione degli one-stop-shops o sportelli unici, possibilmente uno per quartiere, che potrebbero anche mettere a disposizione le informazioni necessarie a promuovere la creazione di comunità energetiche e sistemi di autoconsumo collettivo.
- 6. Realizzazione di uno strumento di informazione e di sensibilizzazione di quartiere** (ad esempio un giornalino di quartiere) che riguardi comportamenti e scelte sostenibili, focalizzandosi su esigenze e bisogni prevalenti in una certa zona della città.

## Proposta 1.b. Promuovere la collaborazione attiva tra pubblico e privato per la riqualificazione del patrimonio edilizio

Dato l'impatto sulla salute e sul benessere della comunità, l'impronta ecologica degli edifici deve essere considerata bene pubblico e conseguentemente l'attore pubblico deve trovare largo spazio anche all'interno dei processi di riqualificazione dell'edilizia privata. La regia degli interventi deve vedere sempre più la collaborazione pubblico-privato, dove il pubblico definisce standard e obiettivi, monitora e controlla il loro raggiungimento, indirizza, sostiene e fa da garante per gli interventi, che spesso i privati non intraprendono per timore di fare investimenti che poi non riescono a sostenere/per cui potrebbero avere problemi in itinere.

**Per realizzare questa collaborazione più stretta tra il settore pubblico e quello privato si propone di realizzare una mappatura dell'impronta ecologica del patrimonio esistente; attivare fondi di garanzia comunali per consentire interventi di efficientamento anche alle persone con minori disponibilità finanziarie; introdurre una forma di patto per la riqualificazione fra pubblico e privato e definire criteri stringenti di sostenibilità per la partecipazione a bandi.**

### Proposte di azioni

- 1. Realizzazione di una mappatura dell'impronta ecologica del patrimonio esistente** che definisca lo stato dell'arte del patrimonio edilizio pubblico e privato del Comune di Bologna, attraverso l'individuazione di parametri tecnici che definiscano un "edificio modello" con cui comparare il patrimonio esistente. Tale azione viene reputata importante al fine di comprendere al meglio il punto di partenza, poter indirizzare le azioni del Comune e promuovere l'efficientamento degli edifici.
- 2. Attivazione di fondi di garanzia comunali per consentire interventi di efficientamento anche alle persone con minori disponibilità finanziarie**, anche attraverso l'individuazione di forme di finanziamento come contributi europei, nazionali, forme di investimento.
- 3. Introduzione di una forma di patto per la riqualificazione fra pubblico e privato**, che definisca impegni e oneri delle parti e in cui gli uffici tecnici comunali siano coinvolti nella garanzia del patto tra pubblico e privato nei processi di rigenerazione.  
Il Comune potrebbe inoltre promuovere accordi quadro tra multiutility e cittadini/e (ad esempio promuovendo un accordo fra HERA e cittadinanza, per cui la prima si fa carico del cambio della caldaia e i secondi si impegnano a stipulare con questa il contratto).
- 4. Definizione di stringenti criteri di sostenibilità per la partecipazione a bandi.**

## Proposta 1.c. Individuare forme di incentivo e sostegno

La riqualificazione del patrimonio per diminuirne l'impronta ecologica richiede interventi spesso molto onerosi per cui l'istituzione di forme di incentivo vengono individuate come la principale leva su cui puntare per sollecitare il settore privato, da erogare in modo proporzionale rispetto al salto di classe energetica. Dato l'impatto che forme di incentivo economico hanno sui bilanci comunali in questo settore, sicuramente è importante supportare la cittadinanza e le imprese nell'accedere agli incentivi economici messi in campo da enti di livello superiore e, d'altra parte, individuare forme di incentivo altre.

**Pertanto, si propone di prevedere forme di incentivo economico per gli interventi di riqualificazione; di individuare meccanismi di incentivo urbanistico e edilizio; definire un sistema per il calcolo dell'impronta ecologica individuale e premi i comportamenti virtuosi; attrarre risorse da destinare ad interventi di riqualificazione ed efficientamento e incentivare gli interventi che aumentano la classe energetica di un edificio.**

### Proposte di azioni

- 1. Previsione di forme di incentivo economico per gli interventi di riqualificazione**, con particolare attenzione al settore industriale e artigianale.
- 2. Individuazione di meccanismi di incentivo urbanistico/edilizio** (ad esempio, concessioni di un aumento delle volumetrie in cambio dell'attuazione di oneri di sostenibilità).
- 3. Definizione di un sistema che calcoli l'impronta ecologica individuale e premi i comportamenti virtuosi**, ad esempio attraverso sconti e agevolazioni per l'uso di servizi (es. il trasporto pubblico, bike sharing etc).



- 4. Individuazione di meccanismi per attrarre risorse da destinare a interventi di riqualificazione ed efficientamento**, ad esempio: avviare tramite ANCI un'interlocuzione per destinare i crediti che lo Stato cumula per finanziare misure di riqualificazione; definire forme di contributo, che prevedano che il Comune reperisca risorse (ad esempio dallo Stato) che possa concedere - in modo proporzionale al salto di classe energetica previsto - come contributi a chi realizza interventi di riqualificazione energetica. Nel momento in cui l'immobile viene venduto, il surplus di valore acquisito grazie agli interventi fatti viene reso al Comune.
- 5. Incentivazione di interventi che aumentino la classe energetica di un edificio**, prevedendo sgravi fiscali e la possibilità di avere la certificazione di passaggio di classe energetica gratuitamente, altrimenti realizzata unicamente nel caso di vendita e affitto dell'abitazione per il calcolo del valore dell'immobile, come definiti da legge nazionale.

## Proposta 1.d. Promuovere gli edifici a impatto zero

Attraverso i meccanismi di incentivo e collaborazione pubblico-privato precedentemente indicati, per promuovere edifici quanto meno impattanti possibile sarà importante promuovere interventi di coibentazione e climatizzazione, di inserimento di pannelli fotovoltaici e pannelli solari, di uso del verde come misura di adattamento al clima, oltre che interventi che mirino a cambiare le forniture di residenze, servizi e imprese, con particolare attenzione al tipo di materiali utilizzati per le ristrutturazioni.

Il settore pubblico - oltre che importante attore nella regia degli interventi privati - deve essere esempio nei processi di rigenerazione, riqualificando ed efficientando per primi i propri edifici, in primis attuando standard e obiettivi già previsti da regolamenti e piani già in essere.

Inoltre, interessante potrebbe essere coinvolgere l'Università di Bologna per promuovere la ricerca e concorsi di idee innovative.

**Per raggiungere l'obiettivo della proposta, si propone di aggiornare i meccanismi di controllo dell'attuazione dei regolamenti e piani già presenti; promuovere una serie di interventi di riqualificazione ed efficientamento; rendere obbligatorio l'utilizzo di materiali a basso impatto ambientale; promuovere l'adozione di forniture meno impattanti; promuovere l'utilizzo di sistemi domotici per gestire al meglio i sistemi di riscaldamento e raffreddamento; avviare una riflessione ed una sperimentazione sulla casa passiva e promuovere gli interventi di riqualificazione di almeno due edifici pilota per quartiere utilizzando la bioedilizia.**

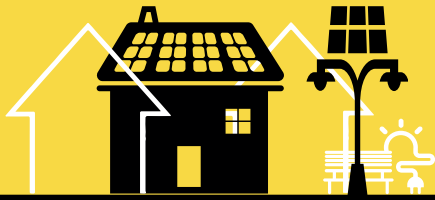
### Proposte di azioni

- 1. Aggiornamento dei meccanismi di controllo dell'attuazione dei regolamenti e piani già presenti** (RE, PAESC etc) che fissano obiettivi e standard di riduzione dell'impronta ecologica degli edifici.
- 2. Incentivo ai/alle proprietari/ie per compiere interventi di riqualificazione ed efficientamento, tramite un sistema a premi**, quali climatizzazione e coibentazione, l'utilizzo di pannelli fotovoltaici e solare termico, la decementificazione delle pertinenze private, l'uso del verde e la realizzazione di tetti verdi, sistemi di recupero delle acque grigie e delle acque piovane.
- 3. Obbligo di utilizzo di materiali a basso impatto ambientale** negli interventi di riqualificazione e nelle nuove edificazioni.
- 4. Promozione di forniture meno impattanti:**
  - obbligando l'uso di soluzioni luminose a bassa emissione (es. sistemi di rifrazione della luce solare come tubi di luce o solar spot, lampadine di ultima generazione, etc) a discapito di soluzioni maggiormente energivore, come le lampadine termiche o quelle a ioduro di sodio ancora ampiamente utilizzate nelle imprese;
  - promuovendo la dismissione delle cucine a gas a favore delle cucine a induzione;
  - regolamentando l'uso dei condizionatori negli esercizi commerciali, definendo fasce orarie definite e accorgimenti per diminuire lo scambio di calore con l'esterno.
- 5. Promozione di sistemi domotici che permettano di meglio gestire i sistemi di riscaldamento e raffreddamento** e controllino il rispetto delle normative per quanto riguarda la temperatura, grazie ad un ampliamento dell'uso gratuito della rete WiFi comunale, per consentire anche ai meno abbienti l'utilizzo dei suddetti sistemi.
- 6. Avvio di una riflessione sulla casa passiva** e avvio di una sperimentazione coinvolgendo l'università.



Immagini dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana





## Raccomandazione 2

Nel percorso verso il raggiungimento della neutralità climatica uno snodo fondamentale è rappresentato dall'energia e da come essa viene utilizzata e prodotta a livello locale.

La sfida per la città nei prossimi anni sarà pertanto da una parte quella di aumentare la consapevolezza della comunità locale su queste tematiche, dall'altra il consolidamento di meccanismi che facilitino la creazione di impianti di produzione e distribuzione locale, così come l'adesione di cittadinanza, organizzazioni ed istituzioni a forme di produzione e consumo collettivo dell'energia.

**Si raccomanda dunque di sostenere la ricerca per promuovere la produzione di energia da fonti rinnovabili in modo più efficiente, diversificato e con minori impatti; di promuovere la nascita di comunità energetiche rinnovabili e di altre forme di condivisione della produzione di energia da fonti rinnovabili e lo smaltimento degli impianti dismessi; di rendere le persone più consapevoli e responsabili e rendere i processi di transizione ecologica più semplici.**



# ***Bologna neutrale è una grande comunità di condivisione di energie rinnovabili***

---

## **Proposta 2.a. Sostenere la ricerca per promuovere la produzione di energia da fonti rinnovabili in modo più efficiente, diversificato e con minori impatti**

Pur rappresentando una tappa necessaria verso la neutralità climatica, la transizione ecologica non è un processo ad impatto ambientale nullo. La creazione di nuovi impianti, o la riconversione dei vecchi, presuppone la realizzazione di cicli produttivi che, non solo utilizzano materie prime ed energia, ma possono essere anche responsabili dell'emissione in atmosfera di CO<sub>2</sub> o di altri gas serra e sostanze inquinanti. Oltre a ciò, la dismissione di vecchi impianti e componenti, così come in futuro quella dei nuovi, può causare problemi per lo smaltimento e il riutilizzo. Al contempo alcune tecnologie, seppur promettenti, sono ancora in una fase embrionale del loro sviluppo e non garantiscono per il momento livelli di efficienza adeguati. Per far fronte a tutti questi potenziali impatti negativi è necessario aumentare le nostre conoscenze sulla transizione ecologica e sulle tecnologie che consentono la produzione e il consumo di energia in modi sostenibili.

**A tal proposito, si propone di sostenere la ricerca nella raccolta delle risorse finanziarie necessarie; sperimentare ulteriori forme di energie rinnovabili oltre al fotovoltaico e rivedere in senso meno restrittivo le norme che stabiliscono il divieto di installare pannelli fotovoltaici sui tetti del centro storico.**

### **Proposte di azioni**

- 1. Sostegno alla ricerca nella raccolta delle risorse finanziarie necessarie.** La ricerca applicata può rappresentare la chiave per superare i limiti delle tecnologie che attualmente vengono impiegate nella produzione e nell'utilizzo di energie rinnovabili. Proprio per questo motivo è importante investire adeguatamente nella ricerca, incentivarla e facilitare l'accesso da parte di imprese, università ed altri enti alle fonti di finanziamento che la sostengono. Laddove esistono già partnership orientate alla ricerca applicata tra queste realtà, queste iniziative vanno supportate e ulteriormente sviluppate, ad esempio promuovendo corsi di formazione per la creazione a livello locale di figure professionali.
- 2. Sperimentazione di ulteriori forme di energie rinnovabili, oltre al fotovoltaico,** per un impiego anche su piccola scala (riscaldamento domestico o combustibile per automobili).
- 3. Revisione in senso meno restrittivo delle norme che stabiliscono il divieto di installare pannelli fotovoltaici sui tetti del centro storico** e nelle zone sottoposte a vincolo paesaggistico.

## Proposta 2.b. **Promuovere la nascita di Comunità Energetiche Rinnovabili e di altre forme di condivisione della produzione di energia da fonti rinnovabili e lo smaltimento degli impianti dismessi**

La nascita di Comunità energetiche rinnovabili (CER) e di altre forme di condivisione dell'energia meno strutturate in un tessuto urbano come quello di Bologna viene vista possibile solo a patto che ci sia una regia in grado di uniformare e di rendere accessibile questa opportunità.

Questa necessità è pensata non solo in funzione degli oneri amministrativi ed autorizzativi di carattere urbanistico per i quali si richiede una facilitazione nell'adempimento, ma anche nella visione di una pianificazione del tessuto urbano in cui sia contemplata la compresenza di impianti di produzione di energia rinnovabile pubblici e privati, con una distribuzione omogenea in grado di interessare tutto il territorio comunale. I soggetti identificati come più titolati a svolgere questa funzione di regia sono il Comune - in ragione della sua competenza nella pianificazione del territorio - e il Quartiere, che rappresenta l'unità amministrativa le cui dimensioni territoriali sono considerate le più sovrapponibili a quelle di una CER in grado di funzionare a livello urbano. Alla regia pubblica viene, inoltre, riconosciuta la funzione di rendere le CER più accessibili anche per persone e nuclei familiari a basso reddito, identificando per queste forme di aggregazione e autorganizzazione non solo un impatto positivo nella lotta al cambiamento climatico, ma anche un'importante funzione sociale.

**Al fine di incentivare la diffusione delle CER o di altre forme meno strutturate di condivisione dell'energia a livello urbano si propone di promuovere da parte del Comune e dei quartieri forme di condivisione della produzione energetica; facilitare l'accesso alle forme di condivisione dell'energia per chi non ha la possibilità di fare investimenti; incentivare le aziende del territorio ad adottare forme di autoproduzione dell'energia da fonti rinnovabili e di condivisione della stessa; sfruttare maggiormente le infrastrutture pubbliche per creare impianti di produzione che fungano da nucleo per la nascita delle CER e promuovere la creazione di filiere locali per la rigenerazione o lo smaltimento degli impianti dismessi.**

### **Proposte di azioni**

- 1. Promozione da parte del Comune e dei quartieri di forme di condivisione della produzione energetica**, per non lasciare queste iniziative alla sola iniziativa privata, rendendola anche il frutto di una pianificazione del territorio che guardi al lungo periodo e che, soprattutto, abbia l'obiettivo di renderne l'accesso più equo. Per rendere questo percorso graduale, potrebbe essere opportuno inizialmente promuovere e dare supporto alla nascita di forme di condivisione dell'energia meno strutturate delle CER, come l'autoconsumo collettivo.
- 2. Facilitazione dell'accesso alle forme di condivisione dell'energia per chi non ha la possibilità di fare investimenti** (per carenza di risorse economiche o perché non proprietari) anche sostenendo la realizzazione di energy park con questa finalità o mettendo a disposizione risorse per investire.
- 3. Incentivi alle aziende del territorio per adottare forme di autoproduzione dell'energia da fonti rinnovabili e di condivisione della stessa.** Le aziende infatti, oltre ad essere i soggetti con il maggior fabbisogno energetico e maggiormente responsabili per le emissioni di CO<sub>2</sub>, dispongono anche di immobili e terreni che possono essere utilizzati per l'installazione di impianti di produzione di energie rinnovabili e, in alcuni casi, di siti produttivi che potrebbero essere riconvertiti alla produzione o allo smaltimento in loco degli impianti stessi.
- 4. Sfruttamento maggiore delle infrastrutture pubbliche per creare impianti di produzione che fungano da nucleo per la nascita di CER**, come ad esempio gli edifici pubblici, le strade di grande viabilità e gli energy park su terreni o aree di proprietà comunale.
- 5. Promozione della creazione di filiere locali per la rigenerazione o lo smaltimento di impianti dismessi**, anche tramite l'individuazione di aree del territorio comunale da destinare ad impianti di smaltimento e il supporto del Comune alla creazione degli stessi, di modo da creare un circuito economico locale che possa anche fungere da volano di sviluppo per il territorio.

## Proposta 2.c. **Rendere le persone più consapevoli e responsabili**

Oltre alla componente “infrastrutturale” che riguarda la produzione di energia, un elemento centrale nelle CER è la disponibilità delle persone che ne fanno parte ad adattare i propri comportamenti per contenere o efficientare i consumi. In questo senso è fondamentale l'esempio che ne danno i servizi pubblici.

**Si propone pertanto di sensibilizzare le persone sull'adozione di comportamenti virtuosi, in particolare quelli che riducono i consumi energetici; di informare sui vantaggi e sui costi ambientali e sociali della transizione ecologica; potenziare le opportunità a disposizione delle scuole per valorizzare il tema della sostenibilità e dei consumi energetici nei programmi di educazione civica nelle scuole; di sensibilizzare sul tema della CO<sub>2</sub> presente in atmosfera e supportare l'acquisto e l'utilizzo di dispositivi più energeticamente efficienti.**

### Proposte di azioni

- 1. Sensibilizzazione delle persone sull'adozione di comportamenti virtuosi, in particolare quelli che riducono i consumi energetici.** Oltre ad essere maggiormente pubblicizzato per farlo conoscere alle persone (vedi sopra), lo Sportello Energia potrebbe anche essere dotato di un punto mobile che si sposta nel territorio comunale ed arriva a portare le informazioni più vicino alla cittadinanza. È importante però immaginare azioni di sensibilizzazione anche nei luoghi maggiormente frequentati dai cittadini e dalle cittadine come i luoghi di lavoro, tramite accordi con le aziende, e le abitazioni, tramite accordi con gli amministratori condominiali.
- 2. Informazione sia sui vantaggi che sui costi ambientali e sociali della transizione ecologica,** per aumentare la consapevolezza e consentire alle persone di valutare in modo corretto non solo quali decisioni prendere in materia di fonti energetiche o di produzione di energia, ma anche per quanto riguarda l'adozione di comportamenti e stili di vita che riducono nel complesso il consumo di energia. In tal senso andrebbe maggiormente pubblicizzato e promosso lo Sportello energia del Comune, anche in un'ottica di integrazione con quanto previsto nelle proposte 1.a e 1.b.
- 3. Potenziamento delle opportunità a disposizione delle scuole per valorizzare il tema della sostenibilità e dei consumi energetici nei programmi di educazione civica nelle scuole,** con un focus importante sulle tematiche della produzione e del consumo di energia, prevedendo strategie di sensibilizzazione non solo per studenti e studentesse, ma anche per le loro famiglie. Ad esempio facendo in modo di ampliare la disponibilità per le visite e uscite didattiche presso lo Showroom Energia e Ambiente.
- 4. Sensibilizzazione sul tema della CO<sub>2</sub> presente in atmosfera,** concentrando l'attenzione in particolare sui comportamenti che consentono un contenimento della produzione e sulle implicazioni della transizione ecologica nella produzione di CO<sub>2</sub>.
- 5. Supporto all'acquisto e all'utilizzo di dispositivi più energeticamente efficienti,** anche introducendo incentivi alla rottamazione di elettrodomestici e prodotti di vecchia generazione e con classe energetica più bassa. Si potrebbe adottare questa misura in maniera graduale, partendo dalla sostituzione di prodotti più accessibili, come le lampadine.

## Proposta 2.d. **Rendere i processi di transizione ecologica più semplici**

La complessità delle procedure per l'installazione di impianti di produzione di energia rinnovabile - sia a livello domestico che di dimensioni più importanti - viene considerata ancora come uno degli ostacoli maggiori alla diffusione di processi di transizione ecologica. Oltre a ciò, risulta non chiaro l'iter da seguire per la costituzione formale di una comunità energetica.

**Si propone di semplificare l'iter burocratico per la creazione di impianti di produzione da energie rinnovabili e delle forme di condivisione per i privati e per le aziende.**

### Proposte di azioni

- 1. Semplificazione dell'iter burocratico per la creazione di impianti di produzione da energie rinnovabili e delle forme di condivisione per i privati e per le aziende,** in modo particolare per quanto riguarda gli adempimenti necessari all'ottenimento delle autorizzazioni per l'installazione di impianti fotovoltaici. Lo Sportello Energia potrebbe svolgere anche un ruolo di consulenza e supporto per la gestione degli adempimenti necessari all'installazione di impianti, alla costituzione di CER e alla stipula dei contratti.



Immagine dei lavori dell'Assemblea cittadina per il clima - Fondazione per l'Innovazione Urbana









## Raccomandazione 3

La città di Bologna è attraversata da numerosi corsi d'acqua e canali che hanno svolto nel corso dei secoli un importante ruolo nello sviluppo dell'industria della seta, storicamente connessa all'energia idraulica. La rete idrica locale però è in buona parte composta da canali tombati e per questo costituisce un rischio per la città, in quanto attraversa il sottosuolo interferendo con edifici pubblici e privati, spesso senza che la cittadinanza ne abbia consapevolezza, creando condizioni favorevoli al verificarsi di potenziali danni in seguito ad eventi climatici estremi, ormai sempre più frequenti. Molte aree di pianura sono classificate come esondabili nella pianificazione. Alla luce di queste considerazioni, appare urgente aggiornare le normative urbanistiche che riguardano gli interventi relativi al rischio idraulico, favorendo l'intervento pubblico parallelamente alle iniziative dei privati per raggiungere più rapidamente risultati soddisfacenti.

Per raggiungere importanti obiettivi quali l'abbassamento delle temperature, l'assorbimento della CO<sub>2</sub>, il contenimento delle isole di calore, la preservazione della biodiversità, il raggiungimento della giustizia climatica e quindi, in generale, migliorare la qualità della vita per i suoi residenti, la città di Bologna deve intervenire lavorando su più fronti.

**In coerenza con il raggiungimento degli obiettivi sopraelencati, si raccomanda di naturalizzare la città e rendere permeabili i suoli urbani; studiare, monitorare e tutelare i corpi idrici per la prevenzione del rischio idrogeologico; formare e informare la cittadinanza partendo dalle scuole e promuovere la collaborazione tra esperti ed esperte, la cittadinanza e l'Amministrazione.**



# Bologna neutrale è più verde e più blu

## Proposta 3.a. Naturalizzare la città e rendere permeabili i suoli urbani

La de-impermeabilizzazione dei suoli e delle superfici urbane pavimentate è uno dei primi passi da compiere per raggiungere l'obiettivo di rinaturalizzare la città e ridurre i rischi di esondazioni e di allagamenti, sempre più frequenti e pericolosi a causa del cambiamento climatico; i suoli devono recuperare la loro funzione ecologica di assorbimento delle acque piovane e redistribuzione nelle falde acquifere del sottosuolo non soltanto nelle aree di campagna ma anche all'interno della città. Parallelamente, per migliorare le condizioni micro-climatiche, mitigare le isole di calore, aumentare il sequestro di CO<sub>2</sub>, migliorare il benessere cittadino e riqualificare l'ambiente urbano, deve essere implementato il verde pubblico in città, salvaguardano quello esistente e riforestando le aree dismesse e/o degradate e gli spazi residuali, anche avvalendosi della collaborazione della cittadinanza per la sua manutenzione.

**Per attuare questa proposta si propone di aumentare la permeabilità dei suoli; realizzare aree verdi nel tessuto urbano e favorire la collaborazione della cittadinanza nella loro gestione e manutenzione; fare un censimento degli spazi verdi esistenti e di quelli pubblici e realizzare un piano di forestazione urbana; salvaguardare e tutelare le aree verdi esistenti; promuovere la massima compensazione possibile in termini di alberature e superfici permeabili per i nuovi interventi e le grandi opere; rinverdire portici e piazze principali della città; supportare l'architettura verde attraverso incentivi economici pubblici; valorizzare la componente qualitativa nei criteri dell'aggiudicazione delle gare per i lavori sul verde; aggiornare il Regolamento del Verde più frequentemente; inserire negli strumenti urbanistici regole simili alla regola 3-30-300; istituire un osservatorio di monitoraggio, controllo e promozione dei progetti di contrasto al cambiamento climatico e realizzare fontanelle pubbliche.**

### Proposte di azioni

- 1. Aumento della permeabilità dei suoli** sia nel centro storico che nelle periferie attraverso: l'avvio di pratiche di de-cementificazione; l'investimento in interventi pubblici e la regolamentazione e l'incentivo di interventi privati; l'individuazione di una percentuale minima di suolo da rendere permeabile negli interventi di riqualificazione e recupero sia per aree pubbliche che private; lo snellimento delle procedure di intervento per opere di permeabilizzazione e naturalizzazione.
- 2. Realizzazione di micro aree verdi in spazi residuali del tessuto urbano favorendo il coinvolgimento e la collaborazione della cittadinanza nella gestione e nella manutenzione** di questi spazi.
- 3. Realizzazione del censimento degli spazi verdi esistenti e degli spazi pubblici** in città che possono essere trasformati in aree verdi urbane attraverso interventi di forestazione e naturalizzazione **e realizzazione di un piano di forestazione urbana** in ottica di mitigare le isole di calore e per assorbire la CO<sub>2</sub>.
- 4. Salvaguardia e tutela delle aree verdi esistenti** e quelle spontaneamente rinaturalizzate.
- 5. Promozione della massima compensazione possibile in termini di alberature e superfici permeabili per i nuovi interventi e le grandi opere.**
- 6. Rinverdimento dei portici e delle piazze principali della città** (come Piazza Maggiore, Piazza San Domenico, Piazza 8 agosto...) attraverso interventi ponderati, che non ne snaturino l'identità ma che contribuiscano ad implementare il verde urbano, ad esempio nei portici attraverso l'inserimento di piante ornamentali per schermare dai raggi solari e raffrescare l'aria.
- 7. Supporto all'architettura verde attraverso incentivi economici pubblici;** supportare i condomini nella realizzazione di orti sui terrazzi e lastrici solari e schermature verdi degli edifici per ridurre l'effetto isola di calore e incentivare la coltivazione di piante che assorbono sostanze inquinanti.
- 8. Valorizzazione della componente qualitativa nei criteri di aggiudicazione delle gare per i lavori sul verde.**

9. **Aggiornamento del Regolamento del Verde con maggiore frequenza rispetto ai termini attuali** per stare al passo con il cambiamento climatico.
10. **Regolamentazione all'interno degli strumenti urbanistici del Comune di regole simili alla regola 3/30/300**, secondo la quale ogni persona dalla propria abitazione dovrebbe poter vedere almeno 3 alberi, ogni quartiere dovrebbe avere il 30% di copertura arborea e il parco più vicino dovrebbe distare al massimo 300 metri dall'abitazione e applicarla ove possibile.
11. **Istituzione di un osservatorio di monitoraggio, controllo e promozione dei progetti di contrasto al cambiamento climatico** che possa avvalersi del supporto di consulenze scientifiche.
12. **Realizzazione di fontanelle pubbliche** (a mero esempio per agevolare l'utilizzo della borraccia e disincentivare l'acquisto di bottiglie in plastica).

### **Proposta 3.b. Studiare, monitorare e tutelare i corpi idrici per la prevenzione del rischio idrogeologico**

L'acqua deve tornare ad essere considerata una risorsa e un "elemento amico", percezione dalla quale ci si è allontanati a causa delle tragedie climatiche avvenute in tempi recenti. Per questo, appare urgente sistematizzare e velocizzare i processi di intervento per la tutela dei fiumi, per la valutazione e prevenzione del rischio idrogeologico e per la limitazione dei danni e il Comune dovrà svolgere un'azione di coordinamento e sensibilizzazione con i diversi enti competenti.

**A tal fine, si propone di aggiornare con più frequenza la classificazione della pericolosità di alluvioni, esondazioni ed erosioni; realizzare un controllo dettagliato dello stato in cui versano i corsi d'acqua tombati e i paleovalvei; promuovere azioni per la rinaturalizzare dei corpi idrici; migliorare manutenzione e pulizia dei manufatti idraulici e incentivare l'utilizzo degli invasi esistenti e la realizzazione di biolaghi per la fitodepurazione e la raccolta delle acque piovane nelle zone collinari.**

#### **Proposte di azioni**

1. **Aumento della frequenza di aggiornamento della classificazione della pericolosità di alluvioni, esondazioni ed erosioni** e della mappatura per individuare vulnerabilità ed esposizione di soggetti e realtà in zone a rischio alluvionale.
2. **Realizzazione di un controllo dettagliato dello stato in cui versano i corsi d'acqua tombati e i paleovalvei** per valutare dove e come intervenire in caso di situazioni a rischio e controllare la qualità delle acque che vi vengono scaricate.
3. **Promozione di azioni per la rinaturalizzazione dei corpi idrici**, per esempio attraverso la **fitodepurazione**, e dell'uso di tecniche di ingegneria naturalistica.
4. **Incentivazione dell'utilizzo degli invasi esistenti e della realizzazione di biolaghi per la fitodepurazione e per la raccolta delle acque piovane nelle zone collinari.** Gli invasi svolgono un ruolo fondamentale per raccogliere l'acqua dei torrenti in caso di forti piogge e contribuiscono ad evitare le esondazioni; inoltre, l'acqua raccolta può essere utilizzata per l'irrigazione. Realizzare nuovi invasi necessita di spazio, che andrebbe tolto ai terreni agricoli, e di un piano di gestione dei sedimenti; per questo viene suggerito di realizzare uno studio di pro e contro per valutare come intervenire.
5. **Miglioramento della manutenzione e la pulizia dei manufatti idrici.**

### **Proposta 3.c. Formare e informare la cittadinanza a partire dalle scuole**

Per rendere efficaci le nuove azioni proposte e gli strumenti già esistenti, è necessario promuovere una campagna di sensibilizzazione e comunicazione in grado di informare la cittadinanza in merito ai rischi provocati dal cambiamento climatico e condividere gli interventi previsti dall'amministrazione; parallelamente, la campagna di comunicazione deve responsabilizzare la cittadinanza in merito al ruolo che può avere in questo ambito e fornire le informazioni in merito agli strumenti da adottare in prima persona per mitigare gli effetti della crisi climatica. L'informazione e la formazione devono rivolgersi alla società civile tutta, con un focus particolare alle scuole di ogni ordine e grado.

Per dar seguito a tutto ciò, si propone di promuovere iniziative di sensibilizzazione attiva nelle scuole ed agevolare la comunicazione tra scuole e Showroom Energia e Ambiente; realizzare una campagna di sensibilizzazione; incentivare i patti di collaborazione per l'adozione e la manutenzione di micro spazi verdi in città; promuovere la cultura della manutenzione del verde esistente da parte della cittadinanza coinvolgendo le diverse fasce d'età ed istituire un concorso scolastico per progetti sulla sostenibilità.

### Proposte di azioni

1. **Promozione di iniziative di sensibilizzazione attiva nelle scuole** attraverso la realizzazione di attività laboratoriali, pratiche ed esperienziali; **rafforzamento della comunicazione tra scuole e Showroom Energia e Ambiente** rendendola più fruibile per studenti e studentesse; implementazione della sperimentazione nelle scuole di buone pratiche di rispetto ed educazione ambientale.
2. **Realizzazione di una campagna di sensibilizzazione** rivolta alla società civile per incentivare l'adozione di comportamenti virtuosi, che sia immediata e con una cadenza regolare; un esempio potrebbe essere quello di promuovere "dieci buone prassi", ovvero condividere con la cittadinanza dieci operazioni concrete da realizzare individualmente.
3. **Incentivo dei patti di collaborazione per l'adozione e la manutenzione di micro spazi verdi in città** con associazioni, istituti scolastici, comitati di quartiere e altre realtà di cittadinanza attiva.
4. **Promozione della cultura della manutenzione del verde esistente da parte della cittadinanza attraverso il coinvolgimento di tutte le fasce di età**, in particolar modo giovani e anziani, e stipulando convenzioni con associazioni e scuole. Ad esempio, i giovani possono essere coinvolti mediante laboratori scolastici o prime esperienze lavorative finanziate dal Comune; esperienze di volontariato e servizio civile svolte da cittadini/e possono essere canalizzate in attività di questo tipo.
5. **Istituire un concorso scolastico per progetti sulla sostenibilità**, da premiare con fondi destinati ad implementare la formazione sul tema.

### Proposta 3.d. Promuovere la collaborazione tra esperti ed esperte, la cittadinanza e l'Amministrazione

Per mettere in pratica azioni efficaci a lungo termine in grado di rinaturalizzare la città, è importante una collaborazione proficua tra Amministrazione, esperti/e e cittadini/e. Gli strumenti esistenti devono essere resi noti e accessibili affinché la cittadinanza abbia la possibilità di partecipare attivamente al cambiamento, facendo leva su una loro responsabilizzazione. Il ruolo degli esperti e delle esperte in materia risulta fondamentale nel monitoraggio e nel controllo delle azioni messe in campo e le amministrazioni, a livello comunale e regionale, devono intervenire regolamentando la normativa.

**Al fine di realizzare questa collaborazione proficua, si propone di promuovere i contratti di fiume; creare dei comitati della cittadinanza per il controllo e monitoraggio delle "politiche green"; realizzare un portale web per rendere accessibili e conosciuti gli strumenti di partecipazione e collaborazione esistenti e per raccogliere proposte dalla cittadinanza sugli interventi da realizzare in città.**

### Proposte di azioni

1. **Promozione dei contratti di fiume**, che tengano conto della realtà dei corsi d'acqua bolognesi, e degli strumenti amministrativi esistenti in cui la cittadinanza collabora attivamente con l'Amministrazione.
2. **Creazione di comitati della cittadinanza** a livello di quartiere, Comune, Provincia, che operino strumenti di **controllo e monitoraggio sulle "politiche green"** promosse dall'Amministrazione con il supporto di esperti ed esperte.
3. **Realizzazione di un portale web per rendere noti e accessibili gli strumenti di partecipazione e collaborazione esistenti** (come ad esempio i contratti di fiume, i patti di collaborazione, le commissioni di quartiere...) **e per raccogliere proposte**, indicazioni e idee. Il portale deve essere oggetto di una campagna di comunicazione e promozione adeguata. A tal proposito, viene segnalata la piattaforma civica Iperbole, che potrebbe essere ripensata per rispondere a questa esigenza; da capire come potranno essere gestite e accolte queste proposte ed eventualmente come rendere noti i progetti proposti per permettere alla cittadinanza di aderire.



Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana





## Raccomandazione 4

Il quadro delle direzioni di lavoro e delle relative azioni individuate delinea una sorta di percorso che, a partire da azioni di educazione e sensibilizzazione, promuova la consapevolezza su comportamenti sostenibili, in particolare legati al consumo, alla produzione di rifiuti e all'alimentazione, e sostenga concretamente cambiamenti negli stili di vita individuali per farli affermare gradualmente come vere e proprie pratiche di comunità, con impatto positivo sul territorio e benefici sull'ambiente in termini di riduzione delle emissioni ma anche sulla qualità della vita, la salute pubblica e la valorizzazione del territorio.

**In particolare, si raccomanda di rendere Bologna la città con più mercati di produzione locale in Italia; promuovere l'autoproduzione agricola; realizzare attività di sensibilizzazione e di educazione ambientale sull'agricoltura urbana e sull'alimentazione e ridurre i rifiuti e trasformare i rifiuti rimanenti in risorsa.**





# Bologna neutrale è il tuo modello di vita da coltivare

---

## Proposta 4.a. **Rendere Bologna la città con più mercati di produzione locale in Italia**

Per sostenere e aumentare la diffusione dei mercati rionali è importante prevedere azioni che da una parte sostengano direttamente la diffusione di questi spazi di vendita di prodotti a forte connotazione locale sull'intero territorio comunale, specialmente attraverso incentivi economici o fiscali e la facilitazione di accesso agli spazi pubblici; dall'altra puntino su questo tipo di realtà di vendita come elemento distintivo dell'immagine della città da sostenere. Tuttavia, se non si prevedono opportuni strumenti di garanzia e di controllo di qualità, il supporto alla diffusione di questi mercati può generare una sorta di "effetto proliferazione" di prodotti e produttori "finto contadino" e "finto bio".

**In coerenza con quanto detto, si propone di sostenere la diffusione dei mercati rionali di produzione locale concedendo gli spazi pubblici gratuitamente e snellendo la burocrazia per le procedure di accesso agli spazi pubblici; destinare terreni pubblici a reti alimentari contadine e dell'economia solidale; limitare la concessione di licenze per la grande distribuzione e le catene e valorizzare la produzione locale, creando uno strumento di informazione accessibile.**

### Proposte di azioni

- 1. Regolamentazione dei mercati rionali locali concedendo spazi pubblici** (piazze e giardini) **gratuitamente; snellire la burocrazia e semplificare le procedure per accesso agli spazi pubblici per i produttori contadini con requisiti di garanzia locale e bio** (adesione ad associazioni come "Campi aperti", autocertificazioni con responsabilità personale) **anche rispetto alla sostenibilità di imballaggi e confezioni.** Al riguardo si dovrebbe introdurre il "numero di mercati locali a frequenza settimanale per abitante e metro quadro" come indicatore di sostenibilità ambientale e qualità della vita, da elaborare con il supporto di tecnici/te ed esperti/e.
- 2. Destinazione di terreni pubblici a reti alimentari contadine e dell'economia solidale** per sostenerne i costi di produzione. Si veda in proposito l'esperienza positiva della cooperativa Arvaia, a cui è stato consentito di coltivare un'area all'interno di una zona di verde pubblico destinata a parco in parte tramite i suoi dipendenti e in parte con il supporto occasionale dei soci volontari. L'esperienza ha elementi di positività che potrebbero far ipotizzare di replicarla o comunque di usarla come modello di riferimento.
- 3. Limitazione della concessione di licenze per la grande distribuzione e le catene.**
- 4. Valorizzazione della produzione locale, creando uno strumento di informazione accessibile** anche online che consenta di consultare mappa e calendario aggiornati, pubblicità dei mercati rionali locali cittadini e iniziative di turismo sostenibile, ad esempio percorsi turistici esperienziali di agricoltura urbana.

## Proposta 4.b. Promuovere l'autoproduzione agricola

Una Bologna neutrale è una Bologna che promuove l'autoproduzione agricola.

**Si propone di aumentare il terreno disponibile per la creazione di nuovi orti urbani e tutela degli attualmente destinati agli orti urbani anche in termini di inquinamento; destinare alcuni orti urbani a studenti e studentesse; semplificare le procedure per la richiesta di orti urbani e incentivare la produzione di compost.**

### Proposte di azioni

- 1. Incremento del terreno disponibile per la creazione di nuovi orti urbani e tutela degli attualmente destinati agli orti urbani anche in termini di inquinamento**, con minimo totale di mq per quartiere ,(si veda in proposito la questione dell'ampliamento della tangenziale in un'area prossima a terreni adibiti a orti urbani).
- 2. Destinazione di una quota di orti urbani a studenti e studentesse.**
- 3. Semplificazione delle procedure per la richiesta di orti urbani** e diminuzione dei tempi di assegnazione e garantire maggiore trasparenza nelle procedure di assegnazione.
- 4. Incentivo della produzione di compost** sia promuovendo l'installazione di tritarifiuti domestici per i rifiuti organici sia rendendo disponibili tritarifiuti e compostiere in prossimità dei mercati rionali.

## Proposta 4.c. Realizzare attività di sensibilizzazione e di educazione ambientale sull'agricoltura urbana e sull'alimentazione

Promuovere stili alimentari sani e sostenibili è un tassello fondamentale per diminuire il consumo di prodotti che hanno un elevato impatto ambientale. A tal proposito è importante promuovere la consapevolezza sull'origine del cibo con percorsi di educazione e sensibilizzazione, sostenere le realtà che promuovono abitudini di consumo sostenibili e legate ai prodotti locali, diffondere, informare e rendere accessibili scelte alternative, senza esprimersi nei termini di una "battaglia culturale alle tradizioni locali".

**Per questi motivi, si propone di coltivare un orto scolastico tra le attività didattiche delle scuole dell'infanzia e primarie; aumentare i piatti vegetariani nelle mense pubbliche; promuovere l'organizzazione di incontri informativi con le ASL riguardo l'alimentazione e le malattie derivate dal consumo eccessivo di prodotti di derivazione animale; dare incentivi alle aziende che adottano pratiche sostenibili per l'alimentazione dei e delle dipendenti e realizzare campagne di sensibilizzazione sullo spreco alimentare.**

### Proposte di azioni

- 1. Coltivazione di un orto scolastico tra le attività didattiche delle scuole dell'infanzia e primarie** da abbinare a progetti e attività di educazione climatica.
- 2. Aumento dei piatti vegetariani nelle mense pubbliche**, incoraggiando l'acquisto di prodotti vegetali locali e la proposta di soluzioni per la riduzione dello spreco alimentare.
- 3. Promozione dell'organizzazione di incontri informativi con le ASL riguardo l'alimentazione e le malattie derivate dal consumo eccessivo di prodotti di derivazione animale** e promuovere e diffondere ricette e prodotti alternativi al consumo di carne.
- 4. Incentivi per le aziende che adottano pratiche sostenibili per l'alimentazione dei e delle dipendenti** (impiego di prodotti locali, menù vegetariani nelle mense aziendali).
- 5. Campagne di sensibilizzazione sullo spreco alimentare**, con la produzione e distribuzione di un manuale di ricette da realizzare con gli avanzi del cibo.

## Proposta 4.d. **Ridurre i rifiuti e trasformare i rifiuti rimanenti in risorsa**

Una Bologna a impatto zero è una Bologna che limita la propria produzione di rifiuti attraverso una serie di pratiche di consumo sostenibile, come lo scambio di oggetti. Trasformare i rifiuti in risorsa è un obiettivo ambizioso a cui ci si può avvicinare attraverso azioni che possono potenziare l'impatto del servizio di raccolta e gestione dei rifiuti, con particolare attenzione all'aspetto della corretta informazione e della sensibilizzazione.

**Con l'obiettivo di realizzare questa proposta, si propone di prevedere l'attivazione digitale della tessera per il conferimento dei rifiuti; installare eco compattatori; replicare pratiche per promuovere il riuso di contenitori e imballaggi; realizzare campagne di sensibilizzazione per il corretto conferimento dei rifiuti; ridurre l'utilizzo di carta per stampanti nelle strutture e negli uffici pubblici; recuperare spazi pubblici e aree dismesse per destinarli a titolo gratuito a pratiche di scambio, di condivisione e di prestito gratuito tra cittadini/e; concedere gratuitamente o a canone ridotto dei locali pubblici per promuovere la vendita di prodotti sfusi; Installare nuove fontanelle; eliminare dagli uffici pubblici di distributori automatici e sostituirli con distributori di prodotti sfusi e fontanelle e aumentare le possibilità di conferimento differenziato.**

### Proposte di azioni

- 1. Attivazione digitale della tessera per il conferimento dei rifiuti** consegnata alla cittadinanza. L'Amministrazione comunale potrebbe esercitare un ruolo nei confronti del soggetto gestore del servizio per migliorare aspetti del servizio che ostacolano il corretto conferimento differenziato.
- 2. Installazione di eco compattatori** all'interno di strutture pubbliche o private (supermercati, stazioni, autostazioni, scuole o centri commerciali) per il riciclo di plastica e alluminio a fronte di forme di rimborsi (buoni spesa, buoni sconto, ticket trasporti o rimborsi in denaro).
- 3. Replica di pratiche** consolidate a livello europeo **per promuovere il riuso di contenitori e imballaggi**; come ad esempio il deposito cauzionale degli imballaggi per bevande molto diffuso in Germania.
- 4. Realizzazione di campagne di sensibilizzazione per il corretto conferimento dei rifiuti**, a partire dalle scuole. Si evidenzia la necessità di affiancare l'informazione già fornita dal gestore del servizio, con una sensibilizzazione di carattere più ampio che aumenti anche la fiducia nel processo del sistema di raccolta.
- 5. Riduzione dell'utilizzo di carta per stampanti nelle strutture e negli uffici pubblici.**
- 6. Recupero di spazi pubblici e aree dismesse per destinarli a titolo gratuito a pratiche di scambio, di condivisione e di prestito gratuito tra cittadini/e**, con obiettivi anche di riqualificazione urbana, promuovendo la diffusione di buone pratiche cittadine già esistenti in altre zone della città (Leyla-la biblioteca degli oggetti). In particolare, ci si riferisce al Second Life di HERA che andrebbe comunicato meglio, avere un aumento degli spazi a disposizione in altre zone della città e un ampliamento degli orari di apertura.
- 7. Concessione gratuita o a canone ridotto locali pubblici per promuovere l'attività di vendita di detersivi alla spina e altri prodotti sfusi** per ridurre i rifiuti in plastica.
- 8. Installazione di nuove fontanelle** per l'acqua pubblica in città.
- 9. Eliminazione dagli uffici pubblici di distributori automatici** di acqua, bibite e prodotti alimentari confezionati da **sostituire con distributori di prodotti sfusi e fontanelle.**
- 10. Aumento delle possibilità di conferimento differenziato** (cestini, bidoni) in zone della città ad alta frequentazione e nei luoghi pubblici di socialità.



Immagini dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana





## Raccomandazione 5

La situazione attuale di Bologna risente di un modello di sviluppo urbano e di pianificazione dei servizi incentrato sull'uso dell'auto.

Per invertire questa tendenza, la sfida principale è quella di cambiare le abitudini di mobilità delle persone e ridisegnare lo spazio pubblico privilegiando la pedonalità e la ciclabilità.

**Per raggiungere questo obiettivo, si raccomanda di sensibilizzare la popolazione per cambiare le sue abitudini di mobilità; promuovere l'intermodalità e la mobilità condivisa; aumentare le piste ciclabili e renderle più sicure e migliorare la qualità dello spazio pubblico rendendolo accessibile a tutte le persone.**



# Bologna neutrale è una città che riorganizza i propri spazi per la mobilità sostenibile

## Proposta 5.a. Sensibilizzare la popolazione per cambiare le sue abitudini di mobilità

A Bologna tutti sono chiamati a fare la propria parte, grazie a una sempre più diffusa consapevolezza di quanto anche i comportamenti e le abitudini individuali incidano sul raggiungimento degli obiettivi collettivi di mitigazione e adattamento. Questo può essere reso possibile grazie a un lavoro capillare e costante, promosso dal Comune di Bologna attraverso canali e strumenti differenti, capaci di interagire con la cittadinanza direttamente o attraverso le principali istituzioni e agenzie sociali, dalla scuola al mondo associazionistico, senza però tralasciare una particolare “alleanza” con il mondo dell’impresa e del lavoro. Cambiare le abitudini delle persone è una delle sfide più complesse, soprattutto per alcune fasce anagrafiche di popolazione che sono cresciute con certe abitudini, in un mondo pensato e costruito “a misura di auto”. Non basta dunque parlare di sensibilizzazione, ma occorre concepire e sperimentare forme e strumenti in grado di rendere “conveniente” (non solo in termini economici) il cambiamento delle abitudini e l’adozione di un diverso stile di vita, a partire dalla rinuncia all’utilizzo dell’auto in favore di spostamenti a piedi e in bicicletta. Si tratta di azioni che non possono essere realizzate senza una strategia complessiva e senza un Piano d’Azione che si ponga obiettivi, strumenti e tempi di realizzazione, nella consapevolezza che senza una corretta pianificazione e integrazione tra questi strumenti, sarà difficile ottenere un effettivo e radicale cambio di abitudini. In questa sfida un ruolo cruciale è giocato dai Quartieri, la dimensione istituzionale di maggiore prossimità per chi vive a Bologna.

Perché le iniziative di cui ai punti precedenti possano ottenere l’adesione di tutti e tutte e avere pieno effetto, è importante che le diverse misure e opportunità siano comunicate con efficacia. Una città verde è una città in cui tutte le persone che la attraversano sanno come fare a mantenerla pulita e sostenibile.

“Chi respira aria a Bologna” non è soltanto una bella immagine. Secondo l’assemblea, le informazioni devono raggiungere correttamente non solo i cittadini e le cittadine residenti, ma anche persone con domicilio temporaneo, persone pendolari e city-users, persone senza cittadinanza italiana e persone senza dimora. Chiunque attraversi il territorio di Bologna e respiri la sua aria, fa parte di quelle persone che possono tutelarne la qualità - se prima gli si danno i giusti strumenti per farlo.

**Per realizzare questo obiettivo, si propone di attuare una campagna informativa permanente nel contesto di una più ampia e unitaria campagna sui temi della sostenibilità e del decoro urbano; potenziare la diffusione di progetti di educazione ciclabile nelle scuole; sensibilizzare le scuole come alleate nello sviluppo e attuazione di nuove soluzioni; creare un mobility manager di quartiere che sia in dialogo continuo con la cittadinanza; informare sui mezzi pubblici della città e promuovere campagne informative e di sensibilizzazione per conoscere vantaggi e opportunità del trasporto pubblico e incentivare la mobilità sostenibile.**

### Proposte di azioni

- 1. Campagna informativa permanente, nel contesto di una più ampia e unitaria campagna sui temi della sostenibilità e del decoro urbano:** l’obiettivo è quello di raggiungere con mezzi diversi tutte le persone e le generazioni che vivono a Bologna. Una campagna permanente che abbia lo scopo di promuovere consapevolezza e cambio di stili di vita, ma al tempo stesso fornisca tutte le informazioni utili a usufruire dei servizi e delle soluzioni messe a disposizione dall’amministrazione per contrastare l’uso dei mezzi privati a motore. Un possibile strumento che va in questa direzione potrebbe essere una applicazione che abbia il doppio scopo di fornire informazioni utili e di misurare l’impatto dei comportamenti dei singoli utenti (una sorta di misurazione dell’impatto). Questo sistema permetterebbe il raggiungimento di punteggi che potrebbero dare vita a agevolazioni e sconti (si pensa principalmente ai servizi pubblici).

2. **Potenziamento dei progetti di educazione “ciclabile” nelle scuole.** Nelle scuole si fanno già progetti simili, ma occorre potenziare la diffusione di queste azioni, nella consapevolezza che attraverso la scuola si raggiungono le famiglie e si può incidere sugli stili di vita. Si pensa soprattutto a progetti che promuovano l’uso della bicicletta da parte dei bambini, ma anche la mobilità pedonale (es. pedibus, come si specifica nelle proposte d’azione della proposta 6.c). Un messaggio che non deve subire interruzioni lungo il percorso formativo di ragazze e ragazzi: per questo certi progetti devono poter continuare anche dopo le scuole primarie, coinvolgendo seppur in maniera diversa l’istruzione secondaria fino ad arrivare al mondo dell’Università.
3. **Sensibilizzazione delle scuole come alleate nello sviluppo e attuazione di nuove soluzioni.** Un contributo della scuola potrebbe essere ad esempio ridurre il carico di libri da portare nello zaino per rendere più agevole il tragitto a piedi casa-scuola. Lo strumento amministrativo in questo caso è la stipula di convenzioni con i diversi Istituti Comprensivi.
4. **Mobility manager di Quartiere e dialogo continuo con la cittadinanza:** data la rilevanza e la centralità del tema, ogni Quartiere dovrebbe dotarsi di uno “sportello per la mobilità” capace di fornire tutte le informazioni necessarie per favorire la diffusione della mobilità ciclabile e pubblica. L’istituzione della figura del Mobility manager di Quartiere può favorire una pianificazione e un raccordo tra le azioni di sensibilizzazione e quelle di attuazione degli interventi in favore della mobilità ciclabile; inoltre potrebbe rappresentare la figura su cui innestare un “dialogo continuo” tra istituzioni locali e cittadinanza, in modo da costruire occasioni e strumenti di monitoraggio collettivo e implementazione condivisa della strategia. In quest’ottica si potrebbe pensare all’istituzione di micro assemblee permanenti di quartiere (col criterio della rotazione della sua composizione), come strumento di formazione della cittadinanza di continuo confronto e monitoraggio sui risultati raggiunti.
5. **Informazione sul funzionamento dei mezzi pubblici,** per facilitarne l’utilizzo da parte della cittadinanza.
6. **Promozione di campagne informative e di sensibilizzazione** dirette alla cittadinanza **per conoscere vantaggi e opportunità del trasporto pubblico e incentivare la mobilità sostenibile.**

## Proposta 5.b. Promuovere l’intermodalità e la mobilità condivisa

Un progressivo abbattimento del traffico automobilistico privato non è sostenibile senza mettere in campo una serie adeguata di azioni che rendano concretamente agevole l’uso della bicicletta in città. Si tratta innanzitutto di una questione quantitativa e strutturale, che richiama lo sforzo di implementare il parco pubblico di bike sharing, la dislocazione spaziale di stazioni e hub in prossimità dei principali servizi; ma anche una questione di giustizia sociale, tesa a rendere conveniente e accessibile a tutte e tutti l’uso della bicicletta. Questo si traduce anche in scelte “radicali” a scapito della mobilità privata a motore, quali ad esempio la progressiva riduzione degli stalli di parcheggio per le auto, in modo da far posto a parcheggi per il bike sharing e più in generale per le biciclette.

**Per raggiungere questo obiettivo, si propone di migliorare il servizio di bike sharing nelle sue quantità; realizzare parcheggi scambiatori, fuori dal centro città con la possibilità di parcheggiare l’auto e prendere la bicicletta dotandoli di un accesso al bike sharing e di gabbioni per parcheggiare la propria bici e promuovere l’interconnessione tra mobilità ciclabile e utilizzo di TPL.**

### Proposte di azioni

1. **Miglioramento del servizio di bike sharing nelle sue quantità,** aumentando la flotta pubblica di biciclette per il bike sharing, prevedendo nuovi hub nelle aree della città non ancora coperte e una dotazione che comprenda la possibilità di noleggiare il rimorchio porta-bambine e bambini o anche biciclette con rimorchio incorporato, oltre alla sperimentazione di un servizio di bike sharing specificamente dedicato alle scuole. Una prima soluzione utile potrebbe essere quella di aprire il servizio cittadino a più di un operatore, in modo da migliorare l’efficienza del servizio e la sua capillarità. Il territorio comunale potrebbe essere suddiviso in lotti diversi in modo da affidare il servizio a più soggetti e al tempo stesso da estendere il servizio alle zone sin qui non coperte della città.
2. **Realizzazione di parcheggi scambiatori, fuori dal centro città** dedicati a chi deve percorrere piccole distanze, **con la possibilità di parcheggiare l’auto e prendere la bicicletta dotandoli di un accesso al bike sharing.** Il primo elemento su cui basare l’ampliamento degli hub per bikesharing e biciclette tradizionali dovrebbe essere quello di uscire dalla cerchia della città storica. In secondo luogo si potrebbe adottare come criterio quello dei principali spazi di interesse (es. parchi urbani, aree produttive, o altre zone dove si



concentrano servizi) per pianificare la costruzione di nuovi hub. Infine un'attenzione particolare va prestata al tema della sicurezza contro i furti di bici, **dotando i parcheggi per bici tradizionali di gabiotti** dove parcheggiarle al sicuro.

3. Doppio binario: bicicletta e TPL. Il Piano della mobilità della città di Bologna deve incentrarsi su due assi tra loro **interconnessi: mobilità ciclabile e utilizzo del TPL**. In quest'ottica devono essere riviste tutte le scelte e le trasformazioni della rete infrastrutturale, dando priorità a questi due assi anche dal punto di vista
4. tecnico (dislocazione stazioni, parcheggi scambiatori, larghezza delle corsie ecc). Questo significa che in prossimità dei nodi strategici della rete di trasporto pubblico urbano devono essere previsti parcheggi per le auto, in modo da scoraggiare l'uso del mezzo privato a motore all'interno della città. Il costo del parcheggio dovrebbe inoltre essere definito in base a criteri di progressività (es: si paga di più per la seconda auto che si parcheggia).

## Proposta 5.c. Aumentare le piste ciclabili e renderle più sicure

A Bologna "non si perde neanche un..." ciclista. Se si vuol raggiungere l'obiettivo di un "sorpasso" delle biciclette sulle auto private non c'è solo da moltiplicare le infrastrutture di accesso alla mobilità ciclabile, ma c'è bisogno anche di mettere in sicurezza chi pedala. Sono ancora troppi infatti gli incidenti che vedono coinvolte le persone che utilizzano la bicicletta in città: un elemento che scoraggia non poco chi per esempio vorrebbe spostarsi con i propri figli al seguito in modo da educarli all'utilizzo di questo mezzo.

**Per dare maggiore sicurezza a chi pedala e avere più bici che auto, si propone di aumentare il numero di piste ciclabili, estendendo la rete a zone ancora non troppo coperte della città; qualificare ulteriormente le piste ciclabili, rendendole più sicure e connettendo tutte le scuole elementari e medie; migliorare la segnaletica e migliorare l'illuminazione delle piste e corsie ciclabili.**

### Proposte di azioni

1. **Aumento del numero di piste ciclabili, estendendo la rete a zone ancora non troppo coperta della città.** Occorre implementare la realizzazione di piste ciclabili estendendo la rete a zone ancora non troppo coperte della città e mantenere costantemente quelle esistenti. Se si vuol promuovere la sicurezza occorre evitare di ricorrere alla realizzazione di semplici "corsie" che rappresentano spesso una soluzione promiscua che non mette in sicurezza chi pedala.  
L'obiettivo deve essere quello di aumentare lo spazio disponibile per il transito delle biciclette, senza sacrificare lo spazio destinato ai mezzi del tpl. Se - come confermato dal confronto con i tecnici - non è possibile realizzare ovunque piste ciclabili per un problema riconducibile principalmente alla larghezza delle strade - si deve comunque prevedere la realizzazione di corsie adeguatamente segnalate, con striscia continua e non tratteggiata. Nel pianificare la realizzazione di nuove piste/corsie il criterio cui rifarsi secondo un'ottica di graduale e progressiva estensione a tutta la città, potrebbe essere quello della presenza di hub di bike sharing, fermate dei bus navetta, e parcheggi scambiatori.
2. **Qualificazione ulteriore delle piste ciclabili, rendendole più sicure e inaugurando un circuito che connetta tutte le scuole elementari e medie.** In questo modo si permetterebbe ai bambini e alle bambine di andare a scuola da soli se abbastanza grandi, o anche di ideare dei pedibus in bicicletta. Sempre sul fronte della sicurezza si propone di intervenire sulle aree più pericolose (incroci e rotatorie) rafforzando il ricorso a soluzioni progettuali che possano contribuire a scongiurare incidenti (incroci ciclabili segnalati, semafori per biciclette, anelli intorno alle ciclabili come in via Zanardi zona PAM, ecc).
3. **Miglioramento della segnaletica.** Chi va in bicicletta deve essere messo in condizione di conoscere e di rintracciare facilmente i percorsi che può compiere in sicurezza da un luogo all'altro, da un servizio all'altro della città. Non ci si può perdere in città alla ricerca del percorso più sicuro. Attraversare la città deve diventare più comodo e sicuro che usare l'auto.
4. **Miglioramento dell'illuminazione delle piste e corsie ciclabili.** Una città come Bologna non vive solo nelle ore di luce solare. Per questo occorre potenziare l'illuminazione delle piste e corsie ciclabili e migliorare la segnaletica catarifrangente per favorirne l'utilizzo anche in orario serale.

## Proposta 5.d. **Migliorare la qualità dello spazio pubblico rendendolo accessibile a tutte le persone**

A Bologna non è facile andare a piedi, soprattutto se si è bambini o anziani. Come molte altre città italiane ed europee, anche Bologna ha visto la progressiva trasformazione dello spazio pubblico da spazio di relazione a spazio a servizio della mobilità a motore. Le piazze sono diventate parcheggi, le strade di vecchia fattura faticano a sopportare i livelli di traffico attuale, e quelle nuove sono sempre più larghe per permettere contemporaneamente il transito e la sosta delle auto. La città è pensata sempre di più a misura di auto e non di cittadino/a. Occorre invertire la tendenza, tornando a occuparsi dello spazio pubblico come spazio in primis di relazione - restituendolo alla sua funzione originaria - ma anche come luogo capace di contribuire al miglioramento della qualità della vita e dell'ambiente attraverso le sue dotazioni. Lo spostamento è un diritto, e va riconosciuto come tale a tutte le persone che vivono a Bologna. Per questo ogni misura deve sempre essere sviluppata e realizzata avendo cura di garantirne la piena accessibilità a persone con un diverso funzionamento fisico, cognitivo e sensoriale. Lo sguardo del Comune dev'essere all'accessibilità delle strade, ma anche a quello dei servizi.

**Per tornare ad uno spazio pubblico pensato per le persone e capace di migliorare la qualità della vita e dell'ambiente, si propone di riqualificare la pavimentazione con soluzioni orientate alla ripermabilizzazione del suolo; potenziare le strategie di forestazione urbana; realizzare "rifugi climatici" in ogni quartiere nell'ottica di una giustizia sociale; coinvolgere la cittadinanza e il Terzo Settore nella cura del patrimonio verde; ridisegnare lo spazio della città secondo criteri di prossimità; abbattere la mobilità individuale per adempimenti burocratici; diffondere la pedonalità nelle zone periferiche e rendere i marciapiedi accessibili ed eliminare le barriere architettoniche.**

### **Proposte di azioni**

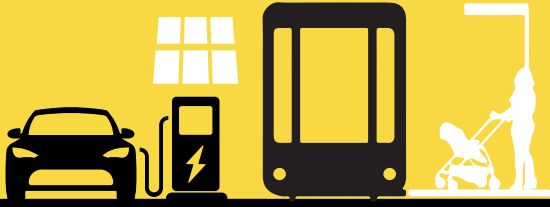
- 1. Riqualificazione della pavimentazione con soluzioni orientate alla ripermabilizzazione del suolo** (lastroni, autobloccanti ecc), in primis nel centro storico, ma anche nel resto del territorio urbanizzato, secondo un piano che preveda il progressivo rifacimento di pavimentazione, marciapiedi e corsie. In coerenza con gli obiettivi stabiliti dal piano pluriennale delle opere pubbliche, programmare la progressiva sostituzione dell'asfalto all'interno del centro storico, sostituendolo con materiali che garantiscano al tempo stesso drenaggio e stabilità per il passaggio dei mezzi pubblici.
- 2. Potenziamento delle strategie di forestazione urbana.** Bologna è una città dove il verde non manca, ma si ritiene debba essere implementato lo sforzo a renderla ancora più verde, studiando le soluzioni che rendano compatibile l'inserimento di piantumazioni anche in zone di vecchia urbanizzazione, per contrastare le isole di calore. Riconosciuta l'importanza del verde urbano nelle strategie di contrasto alle isole di calore, si ritiene che nella costruzione di nuovi piani di forestazione urbana si possa ricorrere anche in questo caso alla cancellazione di stalli oggi destinati al parcheggio delle auto per fare posto a piantumazione di alberi. Il piano di forestazione urbana - che potrà prevedere anche la riduzione di stalli per il parcheggio delle auto - dovrà partire dagli allegati del PUG, in particolare dalla carta delle isole di calore. Si privilegerà quindi l'intervento in quelle zone del territorio che risultano più calde.
- 3. Realizzazione di "rifugi climatici" in ogni quartiere privilegiando strutture già esistenti.** Occorre porsi il problema **anche in chiave di giustizia sociale**. Ci sono persone che non possono permettersi adeguate soluzioni per contrastare l'innalzamento delle temperature nelle proprie abitazioni. Occorre pensare in prospettiva alla individuazione di "rifugi climatici" dove le fasce più fragili della popolazione possano passare la maggior parte della giornata. Spazi con caratteristiche simili esistono già in alcuni quartieri, ma occorre pensare a una diffusione più capillare su tutto il territorio cittadino. Anche in questo caso l'individuazione dei rifugi climatici sarà guidata dallo stesso criterio utilizzato per la definizione degli interventi di forestazione urbana: la mappa delle isole di calore sarà dunque lo strumento di supporto principale per individuare le aree dove è più urgente pianificare l'identificazione di strutture pubbliche o private ad uso pubblico con le caratteristiche del rifugio climatico, privilegiando strutture e contesti a carattere sociale o ricreativo già esistenti (es. Case del Quartiere, biblioteche, ecc).

4. **Coinvolgimento della cittadinanza e del Terzo Settore nella cura del patrimonio verde.** Un piano per moltiplicare le dotazioni verdi della città implica uno sforzo maggiore per la sua cura e manutenzione. Occorre per questo motivo coinvolgere anche le comunità e i quartieri intensificando il ricorso a uno strumento già esistente quale il Patto di collaborazione.
5. **Ridisegno dello spazio della città secondo criteri di prossimità.** Per liberare il centro della città dalla forte pressione del traffico automobilistico occorre ripensare il sistema di pianificazione dei servizi, orientandosi in maniera più spinta verso il loro decentramento, secondo criteri della prossimità ispirati alla città dei 15 minuti.
6. **Abbattimento della mobilità individuale per adempimenti burocratici,** agendo direttamente sulla localizzazione e sulla modalità di erogazione dei servizi pubblici. Numerose le possibilità riconosciute all'ente pubblico su questo fronte. Aiuterebbe ad esempio garantire punti di accesso ai servizi diffusi capillarmente su tutto il territorio comunale così da permettere di accedere ai servizi pubblici con brevi tratte percorribili a piedi. Anche puntare sulla burocrazia digitale potrebbe rendere ancor meno necessario il movimento, a patto però di garantirne l'accessibilità a tutte le persone a prescindere dall'età (es. affiancamento di persone anziane).
7. **Diffusione della pedonalità nelle zone periferiche.** Una Bologna con meno auto è una Bologna in cui le persone sono libere di vivere le strade e respirare aria pulita, lontane dall'inquinamento acustico e atmosferico causato dagli automezzi. Quello della pedonalizzazione però è ancora un fenomeno esclusivo, che ad oggi interessa soprattutto il centro città e che rischia di avere effetti distorsivi nel rapporto della cittadinanza con la città. L'amministrazione comunale dovrebbe evitare di far sì che il centro storico diventi una "isola felice" irraggiungibile e ineguagliabile. Si propone quindi di concentrarsi anche sulla pedonalizzazione delle zone periferiche, naturalmente soltanto a fronte di adeguate compensazioni in termini di servizi di mobilità pubblica che permettano di muoversi facilmente tra centro e periferia, e all'interno della periferia stessa.
8. **Marciaipiedi accessibili ed eliminazione le barriere architettoniche,** per permettere alle persone di scegliere di attraversare lo spazio pubblico come pedoni invece che dover ricorrere all'automobile o altri mezzi.



Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana





## Raccomandazione 6

Per abbattere la produzione di CO<sub>2</sub> e mitigare i cambiamenti climatici, un'altra sfida della città sarà quella di ottenere la piena decarbonizzazione dei trasporti. Per questo è importante che il Comune di Bologna si dedichi contemporaneamente alla riduzione del traffico automobilistico ad uso privato e all'abbattimento delle emissioni connesse a questo. Una Bologna con meno auto è una Bologna per i pedoni, accessibile a tutte le persone, che sono libere di vivere nelle strade e riprendersi lo spazio urbano.

**Per raggiungere questi obiettivi, si raccomanda di diminuire il traffico automobilistico privato e ridurre le emissioni; realizzare un trasporto pubblico comodo, conveniente e fruibile; promuovere spostamenti casa-lavoro e casa-studio sostenibili e condivisi e disincentivare i voli privati e pubblici.**



# Bologna neutrale è in movimento collettivo ed ecosostenibile

---

## Proposta 6.a. **Diminuire il traffico automobilistico privato e ridurre le emissioni**

Una Bologna con meno auto è una Bologna per i pedoni, dove le persone sono libere di vivere nelle strade e riprendersi lo spazio urbano. Per questo è importante che il Comune di Bologna si dedichi contemporaneamente all'abbattimento del traffico automobilistico ad uso privato e all'abbattimento delle emissioni connesse a questo. Su questo fronte è importante sottolineare come le due direzioni di lavoro siano inscindibili. Secondo l'assemblea infatti non è accettabile puntare esclusivamente sugli incentivi per auto elettriche, se questo vuol dire trascurare il generale abbattimento del traffico privato. Promuovere l'uso di automobili sostenibili e disincentivare l'uso dell'automobile in generale può apparire come una contraddizione in termini. Secondo l'assemblea si tratta in realtà di obiettivi che possono coesistere su un orizzonte temporale diverso: un obiettivo di breve periodo (promuovere automobili elettriche) e un obiettivo di lungo periodo (abbattere il traffico automobilistico). Resta ancora da chiarire quali siano le fattispecie in cui il ricorso all'automobile si riconosce come davvero "necessario", e a quali organismi compete la risposta a questa domanda.

**Al fine di abbattere il traffico automobilistico privato e incentivare l'uso di automobili sostenibili, si propone di incentivare il ricorso ad auto elettriche riconoscendole come soluzione "di transizione"; rendere davvero sostenibile l'auto elettrica; promuovere interventi volti a disincentivare l'auto privata; rimuovere le barriere di accesso ai servizi di car sharing e fare una valutazione dell'impatto sanitario che il Passante di Mezzo avrà sulla salute della cittadinanza bolognese.**

### Proposte di azioni

- 1. Incentivo al ricorso ad auto elettriche, riconoscendole come soluzione "di transizione".** Le auto elettriche (come quelle a idrogeno) vengono riconosciute come un'ottima alternativa alle auto con motore a idrocarburi, e quindi come una buona soluzione a breve termine per abbattere le emissioni legate a spostamenti privati. Resta importante però continuare a riconoscerne e affrontare i limiti e le controindicazioni legate a un impiego di questi mezzi. Ad esempio, le auto elettriche non sono del tutto a impatto zero e un loro ricorso massiccio avrebbe comunque controindicazioni in termini di sicurezza stradale e vivibilità della città. Per quanto riguarda la mobilità privata, il consiglio è di mettere maggiori colonnine di ricarica per auto elettriche a disposizione dei lavoratori del settore pubblico e più in generale di tutta la cittadinanza.
- 2. Rendere davvero sostenibile l'auto elettrica,** ad esempio interrogandosi su come venga prodotta l'energia che le alimenta e sul ciclo di vita del prodotto. Soluzioni possono essere l'installazione di impianti fotovoltaici dedicati alla produzione di energia per le macchine elettriche, ma anche la promozione di circuiti che permettano il riutilizzo delle batterie esauste per altri usi. In materia di produzione di energia solare, si chiede di abrogare la normativa che impedisce ai residenti del centro storico di installare impianti fotovoltaici sui tetti - ma anche di promuovere defiscalizzazione e remunerazione a cittadini/e che producono energia.
- 3. Promozione di interventi volti a disincentivare l'auto privata.** Un importante incentivo su questo fronte potrebbe essere costruire parcheggi scambiatori fuori dal centro città dedicati a chi deve percorrere piccole distanze, con la possibilità di prendere navetta e altri mezzi pubblici con un unico biglietto per il trasporto integrato (vedi obiettivo 2). In ottica di adattamento ai cambiamenti climatici, questi parcheggi scambiatori dovrebbero prevedere porzioni rinaturalizzate e con rivestimenti fotovoltaici, sul modello del Parco Nord. Si propone anche di promuovere l'utilizzo di car sharing e moto sharing, sviluppando campagne pubblicitarie dedicate aumentando la disponibilità di mezzi in tutta l'area cittadina.

- 4. Rimozione delle barriere di accesso ai servizi di car sharing.** Download di specifiche app, caricamento di documenti d'identità, difficoltose modalità di sblocco: le iniziative di sharing mobility presentano ancora importanti barriere all'accesso per alcuni/e cittadini/e di Bologna, e in particolare per le persone più anziane. Per abbattere il digital divide e favorire l'avvicinamento di tutti e tutte a questo nuovo modo di spostarsi, si propone l'istituzione di sportelli informativi pubblici di iniziativa comunale che orientino la cittadinanza all'accesso e l'utilizzo di mezzi in condivisione.
- 5. Valutazione dell'impatto sanitario che il Passante di Mezzo avrà sulla salute della cittadinanza bolognese.**

## Proposta 6.b. Realizzare un trasporto pubblico comodo, conveniente e fruibile

Un progressivo abbattimento del traffico automobilistico privato non è sostenibile senza garantire in parallelo un trasporto pubblico efficace e di qualità. Secondo l'assemblea offrire un trasporto pubblico di qualità non significa soltanto garantire un adeguato numero di tratte e corse frequenti, ma anche favorire la piena accessibilità e fruibilità di tutte e tutti ai servizi. Oltre la sola fattibilità, muoversi con i mezzi pubblici deve essere quindi un'esperienza economicamente conveniente e "comoda". In questo modo, il ricorso all'automobile potrebbe diventare un'opzione obsoleta e poco conveniente. Con riferimento al tema del trasporto pubblico, l'Assemblea non ha toccato il tema dell'abbattimento delle emissioni di CO<sub>2</sub>, riconoscendo come già validi gli sforzi e gli obiettivi prefissati dal Comune di Bologna in altri documenti programmatici.

**Per garantire un trasporto pubblico efficace e di qualità, si propone di migliorare il servizio di TPL nelle sue quantità; migliorare il servizio di trasporto pubblico connettendo la città alle periferie e ai comuni limitrofi e diminuendo i costi per abbonamenti e tariffe; promuovere lo spostamento condiviso tra privati e promuovere il trasporto integrato di bus, tram, bike sharing e car sharing attraverso biglietti/abbonamenti integrati a prezzi accessibili.**

### Proposte di azioni

- 1. Miglioramento del servizio di TPL nelle sue quantità,** aumentando la flotta pubblica, il numero di linee e la frequenza delle tratte del servizio pubblico. Nell'ottica di ottimizzare le risorse a disposizione, si propone di avviare un'indagine per identificare le zone meno coperte e le corse meno frequenti su cui è necessario concentrare gli sforzi. Per quanto riguarda il trasporto pubblico, si consiglia di aumentare numero e frequenza delle corse notturne ed estive, con particolare riferimento alle corse che connettono la città alle periferie e ai comuni limitrofi. Un'altra proposta prevede di implementare strategie di decongestionamento del centro città che durino tutta la settimana.
- 2. Miglioramento del servizio di trasporto pubblico,** guardando alle disuguaglianze di movimento, anche fuori dal centro, **connettendo la città alle periferie e ai comuni limitrofi,** ma anche continuando ad **abbattere quanto più possibile abbonamenti e tariffe.**
- 3. Promozione del trasporto integrato di bus, tram, bike sharing e car sharing attraverso biglietti/abbonamenti integrati a prezzi accessibili.** Soluzioni di questo tipo possono essere implementate grazie al dialogo costruttivo tra Comune e Tper, e anche promosse anche alle aziende attraverso convenzioni e incentivi. Speciali tariffe potrebbero essere dedicate al turismo, ad esempio prevedendo biglietti della durata di 3 giorni o card con tariffe convenienti che combinino servizi Tper, accesso ai musei e car sharing. Ulteriore proposta in questo senso riguarda l'abbattimento dei costi del People Mover che porta all'aeroporto di Bologna, oggi meno conveniente del taxi privato.



## Proposta 6.c. Promuovere spostamenti casa-lavoro e casa-studio sostenibili e condivisi

A Bologna molte persone ricorrono al pendolarismo per ragioni di studio e lavoro, ma continuano a ricorrere all'uso dell'auto. Per questo è importante promuovere soluzioni di mobilità sostenibile a misura di pendolare, che permettano alle persone di raggiungere il Comune di Bologna in modo comodo preferendo il trasporto pubblico all'uso dell'auto. Inoltre, come molte altre città europee, anche Bologna non è un posto in cui un bambino/a può scegliere facilmente di andare a scuola a piedi da solo. Dall'asilo nido fino all'Università, è importante che l'accesso all'istruzione dell'obbligo e volontaria possa essere a emissioni zero, sviluppando soluzioni dedicate alla decarbonizzazione della mobilità annessa al sistema scolastico.

**A questo proposito, si propone di incentivare i lavoratori e le lavoratrici a spostarsi con soluzioni sostenibili; incentivare le aziende e l'Università ad adottare politiche di mobilità sostenibile; istituire un servizio di navetta aziendale; ricorrere allo smart working quando possibile; facilitare l'efficientamento energetico delle postazioni di lavoro; potenziare i sistemi di parcheggio bici davanti alle scuole; sperimentare un servizio di bike sharing specificamente dedicato per le scuole; migliorare il servizio pedibus nelle scuole; istituire una flotta di "scuolabus" pubblici e green e creare una piattaforma di condivisione mezzi dei genitori.**

### Proposte di azioni

- 1. Incentivi per i lavoratori e le lavoratrici per spostarsi con soluzioni sostenibili,** puntando primariamente sull'impiego di mezzi pubblici ma anche sulla mobilità privata sostenibile.
- 2. Incentivi per le aziende e per l'Università per adottare politiche di mobilità sostenibile.** La diffusione di stili di vita e abitudini diverse passa inevitabilmente da una "alleanza" con il mondo del lavoro e dell'impresa. Per questo occorre promuovere un maggior coinvolgimento delle aziende nella costruzione di strategie di sensibilizzazione e nell'attuazione di soluzioni che incentivino la mobilità sostenibile da parte di chi vi lavora. In particolare si propone di garantire una maggiore adesione delle aziende alla convenzione di Mobility Management, già disponibile. Su questo fronte si propone di ampliare la platea di aziende che possono partecipare alla convenzione, ad esempio sviluppando incentivi per motivare queste nuove aziende ad aderire volontariamente alla convenzione, abbattendo la soglia minima di 100 dipendenti e/o rendendo obbligatorio per le aziende con un numero di addetti superiore alle 10 unità l'interazione con il Mobility Manager di area, al fine di redigere e supportare la realizzazione di piani di spostamento casa-lavoro (anche a livello di area produttiva), e l'adozione di strumenti per monitorare i comportamenti virtuosi del personale dipendente. Come parte della convenzione dovrebbero essere previste assemblee trimestrali con personale formato del Comune che fornisca a ciascuna azienda risposte e proposte concrete in materia di mobilità sostenibili. Le aziende potrebbero anche essere incentivate a inserire nei parcheggi dedicati ai dipendenti delle colonnine di ricarica con produzione di energia fotovoltaica. In generale il dialogo con le aziende viene riconosciuto come il primo strumento amministrativo su cui puntare. Qualora dialogo e convenzioni non fossero sufficienti, viene riconosciuto come legittimo anche il ricorso a strumenti amministrativi più aggressivi e tendenti all'obbligatorietà.
- 3. Istituzione di un servizio di navetta aziendale** dedicato che permetta di raggiungere luoghi ad alta densità lavorativa senza fermate intermedie e con frequenti corse serali/notturne. Il servizio dovrebbe essere conveniente e agevolato (es. sconti 3x2).
- 4. Ricorso allo smart working quando possibile,** ad esempio incentivando aziende e uffici pubblici e anche i privati a fare ricorso allo smart working flessibile - ma anche contribuendo a garantire l'effettivo rispetto delle ore di lavoro agile già contrattualizzate e favorendo lo sviluppo di parametri chiari nella definizione dello smart working in fase di contrattualizzazione anche extra CCNL.
- 5. Efficientamento energetico delle postazioni di lavoro.** Secondo l'assemblea è importante abbattere non solo le emissioni di CO<sub>2</sub> connesse alla mobilità casa-lavoro, ma anche contrastare le emissioni prodotte nelle ore lavorative. Su questo fronte si propone ad esempio di promuovere sforzi di riorganizzazione delle postazioni di lavoro delle aziende verso un maggiore efficientamento energetico, prevedendo anche controlli periodici nei luoghi di lavoro con annesse sanzioni.

6. **Potenziamento dei sistemi di parcheggio bici davanti alle scuole**, ampliando anche numero e qualità delle rastrelliere.
7. **Sperimentazione di un servizio di bike sharing specificamente dedicato per le scuole.**
8. **Miglioramento del servizio pedibus nelle scuole.** Il Comune potrebbe incentivare il ricorso delle famiglie al servizio pedibus, ad esempio prevedendo un bonus di spesa per i libri di testo per le famiglie che scelgono di avvalersene. Il servizio pedibus dovrebbe essere offerto anche a chi si avvale di prescuola e doposcuola, attraverso bandi finanziati dal Comune, e diffuso capillarmente come esperienza su tutto il territorio cittadino, periferie incluse.
9. **Istituzione di una flotta di “scuolabus” pubblici e green**, dedicati al trasporto scolastico.
10. **Creazione di una piattaforma di condivisione mezzi dei genitori**, che possano accompagnare a turno i bambini a scuola. Questo servizio potrebbe essere avviato con l’impulso dell’amministrazione comunale grazie a una specifica gara d’appalto, e sviluppato con il supporto dell’istituto scolastico. Più in generale, l’idea di una piattaforma di condivisione mezzi bolognese potrebbe essere utile per promuovere lo spostamento condiviso tra privati di ogni tipo.

## Proposta 6.d. **Disincentivare i voli privati e pubblici**

Non è certo un segreto il fatto che l’aereo sia il mezzo di trasporto più impattante in termini di CO<sub>2</sub> e polveri sottili emesse nell’aria. Per questo, per una città a emissioni zero che voglia promuovere la giustizia climatica e la salute dei bolognesi è fondamentale limitare il più possibile il traffico aereo in generale e quello privato in particolare, in ogni modo possibile.

Quello della mobilità aerea è un tema che non è di competenza comunale, su cui il Comune di Bologna può difficilmente legiferare in modo diretto. Nonostante questo, per l’Assemblea resta comunque importante capire quale ruolo possa giocare l’amministrazione per contribuire al progressivo abbandono di cittadini/e e consumatori/trici dei voli pubblici e privati.

**Al fine di limitare il traffico aereo, in particolare quello privato, si propone di promuovere le opportunità ferroviarie di Bologna; sviluppare piattaforme online per promuovere il viaggio sostenibile; disincentivare o vietare, dove possibile, il ricorso a voli privati con ogni mezzo disponibile ed apprendere nuove strategie aderendo a reti esistenti sul tema.**

### Proposte di azioni

1. **Promozione delle opportunità ferroviarie di Bologna.** La città di Bologna può vantare un’elevata connessione ferroviaria rispetto ad altri capoluoghi di regione. Comunicarne i vantaggi a cittadinanza e turisti/e potrebbe rendere l’opzione più appetibile rispetto a voli interni.
2. **Sviluppo di piattaforme online per promuovere il viaggio sostenibile**, offrendo a turisti italiani e internazionali tutte le indicazioni necessarie a muoversi da e per Bologna senza ricorrere all’aereo.
3. **Ove possibile, disincentivo o divieto al ricorso a voli privati con ogni mezzo disponibile**, ad esempio attraverso specifiche tassazioni. Si segnala a tale proposito che le tassazioni monetarie potrebbero non essere un deterrente commisurato al patrimonio degli utilizzatori di voli privati. Un’altra soluzione prevede lo scollegamento dal sito aeroportuale delle aziende che propongono/gestiscono voli privati e/o l’aumento delle tariffe per servizi offerti a voli e compagnie private (es. servizi di rifornimento).
4. **Apprendere nuove strategie aderendo a reti esistenti sul tema**, ad esempio entrando nella rete globale dei sindaci uniti per affrontare la crisi climatica “C40”.



Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana



Immagine dei lavori dell'Assemblea cittadina per il clima - Margherita Caprilli, Fondazione per l'Innovazione Urbana



**Bologna Missione Clima**





## **Annex 2**

### **Impact Pathways**



## Early changes







## Late outcomes





## Direct impacts





## Indirect impacts (co-benefits)

### BUILT ENVIRONMENT AND RES

- Increased local energy autonomy
- Reduced energy poverty
- Improvement of urban environment health (starting from air quality)
- Development of employment opportunities
- Greater attractiveness and competitiveness of the territory
- Increased value of properties
- Increased awareness and consensus towards the energy transition and climate neutrality

### MOBILITY AND TRANSPORT

- Improvement of citizens' well-being and air quality
- Increased safety and liveability
- More equity in public space access
- Positive impacts on health

### WASTE AND WASTEWATER

- Greater competitiveness of innovative companies
- Increase and stimulus of circular economy
- Change in consumption styles
- Improvement of urban environment health
- Wider diffusion of sustainable practices

### IPPU

- Increased competitiveness
- Greater capillarity of health services
- Improvement of urban environment health

### AFOLU

- Increase in urban green spaces
- Increase in biodiversity
- Enhanced ecosystem services
- Improved health of citizens
- Increased urban drainage



**Annex 3**  
**Table B-2.1: Description of portfolio actions**



Sector	Action	ID	Stakeholders	Description
Buildings	Biomethane production	2	HERA	The organic waste of the Municipality of Bologna is sent to the Herambiente plant able to process 135,000 tons annually and to generating 80 millions of cubic meters of biomethane and 20,000 tons of compost.
Buildings	Energy efficiency of the IDAR water treatment plant	3	HERA	Installation of a filtration and oxidation plant and of the process controller for energy consumption optimization through real time monitoring of the parameters in the basin
Buildings	Energy efficiency improvement of IDAR plant lifting	4	HERA	Improving the efficiency of the initial lift system through progressive replacement of the lift augers.
Buildings	Energy efficiency of pumping systems	5	HERA	Replacement of the existing engines with higher efficiency ones Installation of new pumping system for suspended tank elimination
Buildings	DHS efficiency	6	HERA	Installation of new heat generator with economizer Installation for optimization of the heat recovery from cogenerators Extraordinary maintenance of heat exchangers S. Giacomo
Buildings	LED revamping	7	HERA	Energy revamping through LEDs lamps
Buildings	Energy efficiency of gas systems and networks	8	HERA	Net re-layout to maximize the operation of the turboexpander Installation of a new turboexpander Improving the efficiency of the pumping system of the thermal plant
Buildings	Power to Methane	9	HERA	Realization, at the IDAR wastewater treatment plant in Bologna, of an experimental plant of biological methanation. Investment covered for the 84% by NRRP; 16% Integrated water service.
Buildings	Calderara RES installation	10	HERA	Photovoltaic Installation at the aqueducts station San Vitale of 4.3 MW
Buildings	Energy Park	11	HERA/other subjects	Strategic projects for production of renewable electricity integrating the agrivoltaic park. The energy generated will be then sold to businesses that will be able to acquire Energy Park shares at discounted rates. It is estimated that the intervention covers about 1700 ha with a production of 1,320,000 MWh/year
Buildings	Energy Park agriPV Technopole and reforestation	12	HERA	Agrivoltaic plant that will be developed in an area privately owned inside the territory of the Municipality of Bologna, on which Hera has acquired the right. The wooded area will interest an area owned by the Municipality of Bologna adjacent to the area dedicated at the production of renewable energy.
Buildings	Expansion of the DH network	13	HERA	Interconnection CAAB-Pilastro and Berti-San Giacomo. The project predicts to connect 4 District Heating systems currently isolated through the implementation of about 8.3 km of the principal network (current network approximately 36 km). The project includes the increase in capacity of the thermal generation section at the Waste To Energy "Frullo" for the power supply of the 4 interconnected systems.
Buildings	PV 161.3 kWp	14	CAAB	Photovoltaic Plant with annual production of 209.44 MWh/year of photovoltaic + 500 kWh of storage
Buildings	Establishment of a REC	16	CAAB	Agreement Protocol between CAAB, AGER and FEDAGRO ACMO
Buildings	Food City Logistics: PV on shelters - 1.4 MWp	17	CAAB	Photovoltaic Plant on car parks shelters across 14,000 m <sup>2</sup> and about 1.5 MWh
Buildings	Electrification of buildings	18	Airport	Decarbonization of the thermal plants of the airport from gas to electric

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	BHS photovoltaic system, North Terminal and Airside (first phase)	20	Airport	Realization of photovoltaic plants for a power of 444 kWp and 4.8 MW
Buildings	North airside photovoltaic system Phase 2	21	Airport	Development until a potential of 20,000 kWp
Buildings	Energy efficiency of Bologna provincial headquarters	30	CNA	Energy efficiency. The winter and summer air conditioning system was completely replaced: power from the district heating system of the fair area was maintained but all the pre-existing fan coil terminals were removed and replaced with a more efficient ceiling system. LEDs and sensors of presence have been installed.
Buildings	Building Bonus Help Desk	32	CNA	Managing the citizens' requests for the redevelopment of residential buildings using the fiscal bonuses
Buildings	PV installation on the roof of the Illumia headquarters	33	Illumia	Photovoltaic installation on the headquarter roof
Buildings	Establishment of REC Pallavicini	34	Illumia	Realization of a photovoltaic plant at the aggregate Pallavicini, allowing the sharing of the electricity produced
Buildings	RES installation on agricultural land	35	Illumia	Development of a PV plant of about 1 MW on a uncultivated agricultural ground
Buildings	PV agrivoltaic (22.5 MW)	36	Confagricoltura	Installation of an agrivoltaic plant. In the Municipality of Bologna members are beyond 60, with a total agricultural surface of 1,140 Hectares, of which more than 900 of Utilised Agricultural Land (UAL), equivalent to a potential of about 450 MW. The exploitation of about 5% of such UAL in the short period can be hypothesized, installing 22.5 MW of agrivoltaics.
Buildings	NZEB Building (Hall 26)	37	AUO BO	In the scope of PNRR_PNC financing the demolition and realization of a new building for clinics at Hall 26 is expected
Buildings	NZEB Building (Hall 17)	38	AUO BO	Demolition of the Hall 17 for the realization of a new building mainly destined to laboratories by the University of Bologna
Buildings	NZEB Building (Hall 7)	39	AUO BO	Demolition and reconstruction of a nZEB building intended to Hospitalizations and Laboratories at Hall 7 Seragnoli
Buildings	NZEB Building (Hall 12)	40	AUO BO	The demolition of an existing building (hall 12) and the reconstruction of a nZEB building intended predominantly for hospital stays, surgery rooms and intensive care
Buildings	Redevelopment of hospital building	43	AUO BO	In the context of PNRR PNC it is expected the functional and energy requalification of the portion of the Pavilion related to the Church of San Gregorio - Hall. 3
Buildings	Sant'Orsola Polyclinic trigeneration plant	44	AUO BO	Construction of a trigeneration plant with electric tracking, with installation of methane gas cogenerators, low temperature heat pump, a lithium bromide absorber and related interventions for the requalification of the fluids distribution network.
Buildings	Trigeneration plant	49	AUSL BO	Installation of methane gas cogenerators, lithium bromide absorbers and related optimization interventions on heating and refrigeration plants.
Buildings	Cooling system intervention	50	AUSL BO	Requalification intervention of the refrigerated water distribution system and central refrigerator with energy efficiency improvements

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Widespread energy efficiency interventions	51	AUSL BO	Interventions in Maggiore and Bellaria hospitals aimed at the reduction of energy consumption, mainly through the installation of LED lamps
Buildings	Energy efficiency of headquarters in via Castiglione	52	AUSL BO	Interventions aimed at the reduction of energy consumption, through the installation of water heater condensing e thermostatic valves, attic insulation, replacement of part of the window frames and installation of LEDs.
Buildings	Energy efficiency of Polo Roncati	53	AUSL BO	Requalification of the thermal plant with the installation of a condensation boiler and thermostatic valves. Roof insulation.
Buildings	Energy efficiency of clinic Montebello	54	AUSL BO	Relamping with LEDs
Buildings	Energy efficiency of clinic Mengoli	55	AUSL BO	Relamping with LEDs and window frames replacement
Buildings	Energy efficiency of clinic Borgo Panigale	56	AUSL BO	Relamping LEDs and boiler replacement
Buildings	nZEB building: new community house	57	AUSL BO	Demolition of existing building and realization of a new NZEB building
Buildings	Rizzoli Hospital trigeneration plant	66	IOR BO	Construction of a trigeneration plant, with installation of a gas methane cogenerator, lithium bromide absorbers and related interventions of optimization on thermal and refrigerating plants
Buildings	Energy efficiency of Rizzoli thermal power plant	67	IOR BO	Heat and steam generators replacement
Buildings	Widespread energy efficiency interventions at Rizzoli Hospital	68	IOR BO	Interventions aimed at the reduction of energy consumption through installation of illuminating bodies, replacement of frames, replacement of central units of ventilation
Buildings	Cavaticcio hydroelectric plant	75	Canali di Bologna	Installation of a hydroelectric plant. The plant will provide on average 2,600,000 kWh equal to the annual consumption of about 1000 families.
Buildings	Nzeb Building	83	Emilbanca	Branch Zanardi relocated at an energy class A4 building: insulated panels, photovoltaic panels of 24,000 kWh, reuse of meteoric water system (9000litres)
Buildings	Relamping of Pilastro branch	84	Emilbanca	Branch Pillastro energy improvements: LEDs (The new plant has a 1.52 kW nominal power) and air conditioning plant
Buildings	Relamping of the Azeglio branch	85	Emilbanca	Branch d'Azeglio energy improvements: replacement of lighting (new plant with 0.63 kW nominal power) and air conditioning plant
Buildings	Relamping San Donato branch	86	Emilbanca	Branch San Donato energy improvements: replacement of lighting (The new plant has a 1.79 kW nominal power) and air conditioning plant
Buildings	Relamping Pianoro branch	87	Emilbanca	Branch Pianoro energy improvements: replacement of lighting (The new plant has a 1.79 kW nominal power) and air conditioning plant

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Relamping Headquarters Business Park	88	Emilbanca	New lighting system of 8.56 kW nominal power
Buildings	Relamping Mazzini headquarters	89	Emilbanca	New lighting system of 24.66 kW nominal power
Buildings	Energy audit of Business Park	90	Emilbanca	Energy audits in the property located in via Trattati Comunitari Europei 57-07, n. 19, Bologna for future energy efficiency and improvements
Buildings	Acquisition of tax credits	97	Emilbanca	The bank through acquisition of the fiscal credits from buildings owners or by businesses implementing the works, has allowed their immediate monetization and pre-financed the interventions, giving the possibility of carrying out efficiency improvement also to an audience of beneficiaries who otherwise would not have had the financial availability. 2022: total amount of operations €84,000; In the 2023: €41,000. Value of the investment referred to 2023
Buildings	New NZEB building	102	Ducati	Realization of the new NZEB building (Building I) for the process of finishing and aesthetics delivery of Ducati motorbikes.
Buildings	Installation of RES systems	103	Ducati	Installation on the new building roof
Buildings	Development of new RES plants	104	Ducati	Installation of different photovoltaic plants in the context of the development plan of the DMH site
Buildings	Energy management system	105	Ducati	Energy management System in agreement with the ISO 500001 for certification
Buildings	Energy efficiency installations	108	Ducati	Optimization and rationalization of the plants shutdown in non-working hours related to trial benches of the engine assembly area and rollers benches in the vehicle assembly area
Buildings	Relamping	109	Ducati	Replacement of existing lighting with LED lighting in different departments and company areas
Buildings	Energy diagnosis of systems	110	Ducati	Preparation of an energy audit containing possible scenarios of optimization and consumption reduction
Buildings	Digital platforms, consumption optimization software	111	Ducati	Use of specific softwares for remote control of energy performance and of the technical parameters of different systems
Buildings	Relamping shops	116	Coop Alleanza	Interventions on about 20 Coop stores
Buildings	Existing photovoltaic systems	117	Coop Alleanza	800 MWh of average annual production in total from 30 owned plants in total self-consumption
Buildings	Remote management of BMS adjustments	118	Coop Alleanza	Integrated control and management of buildings, monitoring and optimizing the operation of systems
Buildings	New relamping interventions	119	Coop Alleanza	Efficiency interventions on lighting of Coop stores



**2030 Climate Neutrality Action Plan**

Sector	Action	ID	Stakeholders	Description
Buildings	Photovoltaic systems to be installed	120	Coop Alleanza	Installation on buildings of renewable energy
Buildings	Energy remodeling	121	Coop Alleanza	15 energy remodelling for the reduction of buildings energy consumption
Buildings	Photovoltaic Borgo Panigale	122	Coop Alleanza	Photovoltaic plant hypothesis in study for a power of 990kWp
Buildings	Public Private Partnership	123	Municipality of Bologna	Energy efficiency measures for municipal buildings and public lighting systems which will be carried out as part of the public notice for expressions of interest for a public private partnership, concerning the unified management of maintenance services of the building asset and municipal systems. Purchase of green energy for municipal building electricity users and public lighting. Only the $\Delta$ compared to the objectives already defined in the SECAP are considered.
Buildings	Photovoltaic systems	124	Municipality of Bologna	Installation of photovoltaic on public buildings
Buildings	Construction of the "New hub 0-6 via Menghini" school	147	Municipality of Bologna	Construction of a new 0-6 year center on a lot occupied by a disused school and a photovoltaic energy production system with a peak power of 83.13 kW. No enough data to say if the building will be ZEB, but it is foreseen at least an NZEB.
Buildings	Extension of the children's center via Monterumici, Marzabotto	148	Municipality of Bologna	Dismantling the old school building and realization of a new building (not defined if NZEB) and installation of RES plant
Buildings	New Volta Mazzini school - EIB financing	149	Municipality of Bologna	Dismantling the old school building and realization of a new building (not defined if NZEB) and installation of RES plant with a power of 82 kWp
Buildings	New Besta schools, viale Moro	150	Municipality of Bologna	Construction of a secondary school, a gym, spaces for afternoon courses, spaces for institutional meetings. Expected the installation of photovoltaic panels of 225 kWp. No enough data to say if the building will be NZEB. Funding from EIB and NRRP
Buildings	Construction of a new gym in the Bonori sports center	151	Municipality of Bologna	Dismantling the old building/bowling club and realization of a new building (Not defined if NZEB) and RES plant
Buildings	Construction of new nursery via Barbacci	152	Municipality of Bologna	Realization of an 84 children nursery in replacement of the current nursery Roselle. The installation of 137.5 kWp photovoltaic panels is expected. NRRP funds
Buildings	Redevelopment of Villa Aldini and new nursery school in the woods	153	Municipality of Bologna	Renovation of a building complex under landscape protection. RES installation with potential annual power of 16,288 kWh/year
Buildings	Creation of a children's museum	154	Municipality of Bologna	It is proposed to install photovoltaic, geothermal heat pump and mini wind power for a power of 33.2 kWp. Furthermore, the sep up of a REC is proposed, that other public and private buildings from the area could join
Buildings	Redevelopment and valorisation of the municipal theatre	155	Municipality of Bologna	In the first lot the demolition of the water tower and some buildings in via del Guasto is planned to create new spaces in the basement in which to place a large part of plant engineering. In the second lot the demolition of the remaining part of the buildings along Via del Guasto is foreseen and the construction of a new volume that will host new spaces for public reception. Furthermore a 31 kWp RES installation is foreseen.
Buildings	Reconstruction of Carracci primary and secondary school	156	Municipality of Bologna	Via Felice Battaglia. With installation of a 62 kWp photovoltaic plant
Buildings	Construction of a new nursery school in the Pozzati garden	157	Municipality of Bologna	Via Tintoretto. With installation of a 35 kWp photovoltaic system

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Construction of a new nursery school and Tempesta primary school	158	Municipality of Bologna	Installation of a photovoltaic plant
Buildings	Interventions at the Rocca nursery school	159	Municipality of Bologna	Conformity Interventions for fire prevention and energy efficiency: the figure expressed is partial and represents in part the fire prevention adjustment and in part the energy efficiency
Buildings	Completion of the Rita Levi Montalcini school	160	Municipality of Bologna	Installation of a 30 kWp photovoltaic plant
Buildings	New nursery school "Giancarlo Cerini" in via Abba	161	Municipality of Bologna	Installation of a 20 kWp photovoltaic plant
Buildings	Interventions at Farini secondary school and P. Marella primary school	162	Municipality of Bologna	Installation of a 240 kWp photovoltaic plant
Buildings	New Federzoni school center in via Cage	163	Municipality of Bologna	Installation of a 80 kWp photovoltaic plant
Buildings	Construction of new Armandi Avogli schools	164	Municipality of Bologna	Demolition of the existing school - NRRP financing
Buildings	New construction of Dozza secondary school	165	Municipality of Bologna	via De Carolis, realization through the EIB Fund
Buildings	Demolition and reconstruction of the Cavazzoni nursery	166	Municipality of Bologna	Demolition And reconstruction of Cavazzoni nursery. NRRP Funds
Buildings	Renovation of Fortuzzi Primary School	167	Municipality of Bologna	Renovation of the former caretaker's house and construction of canteen rooms. Adaptation of thermal and electrical systems aimed at energy saving. Funds NRRP
Buildings	Construction of Parco Grosso nursery - Project Financing	168	Municipality of Bologna	New nursery with 76 places inside the Grosso park area, in via Gobetti in the Navile district, thanks to project financing.
Buildings	Redevelopment of building envelopes to increase energy efficiency	169	Municipality of Bologna	PON REACT EU funds. First batch of schools: Fioravanti, Grosso, Gandino Guidi, Romagnoli Panzini, Gamberini, Tambroni and the Roselle nursery; second lot: Guercino schools and Jacopo della Quercia. First lot of €6,250,000 and second lot of €5,190,000
Buildings	Water dispensers - Water houses	172	Municipality of Bologna	Installation of water dispensers (water houses) in the municipal area to limit the use of disposable bottles
Buildings	Redevelopment of sports buildings	176	Municipality of Bologna	Replacement of playground lighting lamps with LED lights. Forecast of installing photovoltaic systems for energy autonomy of sports facilities. Evaluation of replacements of heating and domestic hot water production systems through the installation of heat pumps. Redevelopments in progress: sport center Lucchini; Sports centres: Falchi, Pizzoli, Barca; Paladozza. Bonori counted separately together with the remaining building redevelopments
Buildings	Superbonus program	177	ACER	Energy efficiency of buildings with the 110% Superbonus program
Buildings	Energy efficiency via Gnudi	178	ACER	Extraordinary maintenance intervention with energy efficiency of buildings with the POR FESR 2021-2027 program

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Energy efficiency via Bentivogli	179	ACER	Renovation with energy efficiency of buildings with the green, social and safe PNC program
Buildings	Energy efficiency via Libia	180	ACER	Renovation with energy efficiency of buildings with the green, social and safe PNC program
Buildings	Energy efficiency via Fioravanti	181	ACER	Renovation with energy efficiency of buildings with municipal funds for ERS Co-Housing
Buildings	Replacement of refrigerator units	183	CNR	Replacement of refrigeration units with others with higher efficiency
Buildings	Boiler replacement	187	CNR	Replacement of boilers with others with greater efficiency
Buildings	RES installation	188	CNR	Installation of a photovoltaic system with energy production estimated at 95,000 kWh per year necessary for the self-consumption of an institute in the area
Buildings	Thermal insulation of buildings	189	CNR	Creation of external cladding and replacement of fixtures with others with thermal break
Buildings	Agrivoltaic system	191	Authorized photovoltaic Installations	Construction of an agrivoltaic system. 585 Wp modules mounted on structures with single-axis solar tracking tracker. Cultivation and production planned of medicinal plants to be used for the production of nutraceutical and cosmeceutical products
Buildings	Photovoltaic system ex San Luca quarry	192	Authorized photovoltaic Installations	Construction of a photovoltaic system with monocrystalline silicon technology with solar trackers
Buildings	Photovoltaic system Via Persicetana	193	Authorized photovoltaic Installations	Construction of a photovoltaic system with monocrystalline silicon technology to be placed on agricultural land near the Bargellino industries
Buildings	Energy efficiency through replacement of window frames	194	UniBo	Replacement of fixtures on university buildings for a surface area of 1,123 m <sup>2</sup> . Investment covered 60% MUR and 40% Unibo
Buildings	Energy efficiency through roof insulation	195	UniBo	Redevelopment of university building roofs for a surface area of approximately 13,726 m <sup>2</sup>
Buildings	Energy efficiency through insulation of vertical walls	196	UniBo	Installation of insulation via vertical walls for a total of 1,534 m <sup>2</sup>
Buildings	New NZEB building	197	UniBo	New construction with NZEB technology with a surface area of 4,676 m <sup>2</sup>
Buildings	Relamping buildings	198	UniBo	Internal and external relamping
Buildings	Building Automation	199	UniBo	Installation of building automation systems in some University buildings

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Replacement of heat generators	200	UniBo	Replacement with heat pumps in some University buildings
Buildings	RES installation	201	UniBo	Installation in some University buildings for a power of 647 kW and a production of 697 MWh/year
Buildings	Purchase of green energy	202	UniBo	For the year 2024, 42.3 GWh of energy from renewable sources purchased
Buildings	DH network implementation	203	UniBo	Supply of thermal energy from the district heating network with 12 new connections to the network for a total of 1.65 MW by 2026
Buildings	Energy management interventions	204	UniBo	Creation of an energy management system to achieve ISO 50001 certification
Buildings	Energy efficiency of the Giovanni XXIII Service Center	210	ASP	The energy requalification project concerns the installation of thermal insulation on the walls and roof floors, the installation of BACS systems inside the so-called "protected apartments", the replacement of lighting fixtures, the implementation of a photovoltaic system of the power of 150 kWp.
Buildings	Public Private Partnership	211	ASP	Public-Private Partnership proposals are currently being analysed, which include the installation of photovoltaic roofing, the management and optimization of electricity consumption, and the partial relamping of buildings. A reduction in electricity consumption is expected with the replacement of the carrier with RES produced on site
Buildings	Integrated Energy Service "Consp"	212	ASP	Signing of the Consip agreement "Integrated Energy Service, vers. 4 "- SIE4 for the management and maintenance of heating systems. Redevelopment interventions on the building and plant systems are envisaged: windowed components, thermal insulation of the roof, high efficiency heat generators, thermostatic valves, BMS remote control systems, replacement of circulators.
Buildings	System Of sustainability objectives	213	Confindustria Emilia	System of sustainability objectives (primarily reduction of energy, water and paper consumption) for Confindustria employees (around 60 for the Bologna office)
Buildings	RES installation	216	Toyota MHM	Installation of a photovoltaic system in a building used as a logistics warehouse of approximately 90 kWp
Buildings	New ZEB building used as a canteen	217	Toyota MHM	Building to be certified with 50 kWp photovoltaic system
Buildings	Electrification of buildings	218	Toyota MHM	Installation of heat pumps for air conditioning logistics buildings
Buildings	New logistics hub	219	Toyota MHM	Construction of a new logistics hub with photovoltaic system and heat pump air conditioning
Buildings	New heating and cooling system	220	Toyota MHM	Replacement of the current heating and cooling system of the sanding booth with one with less power
Buildings	Replacement of painting burners	221	Toyota MHM	Replacement of 8 burners of the painting system with an electric system
Buildings	Heat pump system for the workshop	222	Toyota MHM	Heat pump for air conditioning the part of the plant used for assembly

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Buildings	Installation of photovoltaic system	224	Toyota MHM	Installation of a 702 kWp photovoltaic system on the company roofs
Buildings	Heat pumps for offices	225	Toyota MHM	Heat pump for the air conditioning of the office part of the company
Buildings	Installation of photovoltaic on building	226	Toyota MHM	Installation of approximately 350 kWp to cover a building
Buildings	Public tender "Roveri area"	227	Companies of the "Roveri" Industrial Area	Public tender from the Municipality of Bologna for the development and redevelopment of companies located in Bologna "Zona Roveri". Financial incentives, partly non-repayable and partly as subsidized interest loans, for the development of investment projects also aimed at the environmental sustainability of business activity for production units located in the Roveri area. Focus of the overall investment on energy efficiency/renewable sources interventions
Buildings	Photovoltaic San Ruffillo	233	Rete Ferroviaria italiana	Self-consumption plant for the railway network with a target installed value of 10 MWp (this is an estimate as the area of interest is to be partly purchased and partly owned); site self-consumption level of approximately 70%
Buildings	Photovoltaic San Donato	234	Rete Ferroviaria italiana	Photovoltaic system with a power of approximately 10 MWp to power the railway line; 100% self-consumption level
Buildings	Efficiency improvement of the Viale Aldo Moro offices	235	Emilia Romagna Region	Energy efficiency plan and reduction of climate-changing gas emissions of the regional offices in Viale Aldo Moro 30 and 50-52. Sources of financing: 8 million FERS funds 2024-2027 the remaining amount from the regional budget
Buildings	New photovoltaic system on building	236	CRIF	Construction of a new 267 kWp photovoltaic system at the building in via Beverara in Bologna
Buildings	LEED certification	237	CRIF	The certification process of the building in via Beverara in Bologna is underway according to the LEED (Leadership in Energy and Environmental Design) protocol, with the aim of "platinum" level
Buildings	Construction of new building	238	CRIF	Construction of a new building with high energy performance, class A4, in via Beverara in Bologna
Buildings	New ground-mounted photovoltaic system	239	CRIF	Construction of a new ground-mounted photovoltaic system with a power of 2.7 MWp in Osteria Grande
Buildings	Energy requalification of a building	240	CRIF	Redevelopment and energy efficiency of the building in via Fantin in Bologna

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transport	Biofuel from waste oils	1	HERA	Collection and valorisation of Used Vegetable Oils (OVE) in order to produce 100% biofuel of plant origin. The oil is collected by citizens, restaurants and some canteens in the municipal area using special containers
Transport	Purchase of electric vehicles	22	Airport	Replacement of the airport company fleet with electric vehicles
Transport	Installation of electric car charging stations	23	Airport	Installation of 32 columns installed landside
Transport	Implementation of charging columns for airport vectors	24	Airport	Installation of 8 airside columns for airport carriers
Transport	Mobility Manager of the airport area	25	Airport	The airport area mobility manager has been appointed with the task of analysing, managing and monitoring traffic flows and transport to and from Bologna Airport, activating agreements, promoting and enhancing new, more sustainable methods of access to the airport
Transport	Eurovelo 7 creation	26	Airport	The project is part of the attempt to increase bike to work and cycle tourism thanks to the presence of a supervised bike station and other infrastructures dedicated to the air transport of bicycles
Transport	Actions to promote soft mobility	27	Airport	Bike station available to passengers and employees - Ridemovi bike sharing hub available to passengers and employees - Bike to work project, to encourage home-work travel by bicycle - FIAB bike friendly airport certification
Transport	MuoviAMOCi project	28	Airport	Pilot project currently applied only to employees: integrate the public transport fare system by also including shared transport for accessibility to the airport. Annual investment value
Transport	Public transport employees	45	AUO BO	Financial incentive recognition for employees who sign up for annual subscriptions in accordance with the methods set out in the specific Regulation (agreement with TPER). Annual investment value
Transport	Bike to Work project	46	AUO BO	Mileage reimbursements for employees who travel from home to work by bicycle
Transport	Soft mobility	47	AUO BO	Creation of protected fenced parking for employee bicycles in pavilion 2 and pavilion 1 (30+20 bicycle spaces), bike charging points, totem for small repairs
Transport	Car pooling project	48	AUO BO	Increase in parking spaces dedicated to the Carpooling project (n. 10) Installation of totems for displaying reservations (Hall 23, Hall 5 and Zaccherini-Alvisi car park)
Transport	Soft mobility promotion	60	AUSL BO	Protected parking for employee bicycles in the area overlooking the Ospedale Maggiore canteen
Transport	Bike to Work	61	AUSL BO	Mileage reimbursements for employees who travel from home to work by bicycle
Transport	Incentives for commuting to work	62	AUSL BO	Recognition of financial incentives for employees who sign up for annual subscriptions in accordance with the methods set out in the specific Regulation (agreement with TPER)
Transport	Increase the use of LPT	69	IOR BO	Introduction of incentives to reduce the use of private vehicles

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transport	Smart Working Plan	74	All healthcare companies	Reduction of travel to reduce CO <sub>2</sub> emissions
Transport	Fleet electrification and purchase of hydrogen vehicles	76	TPER	Purchase of 139 electric and 127 hydrogen vehicles with development of the related connected infrastructure
Transport	Behavioral innovation and MAAS	77	TPER	Development of the Maas Roger application
Transport	Electric car sharing	78	TPER	Purchase of new electric scooters and modernization of the car fleet available to the Corrente platform
Transport	Mobility management	79	TPER	Agreements with local companies to reserve a portion of the Corrente vehicle service as well as agreements and discounts for the use of LPT
Transport	Bus fueling with biomethane	81	TPER	Purchase of biomethane produced by the Hera plant in Sant'Agata Bolognese, circular economy
Transport	Adoption of Mobility Manager	91	Emilbanca	On 10/2021 the figure of Mobility Manager was appointed
Transport	Car sharing / Car Pooling	92	Emilbanca	Since 2017, Emil Banca has provided a company vehicle to some homogeneous groups of employees who share the same route when commuting from home to work
Transport	New car charging infrastructure at Mazzini headquarters	93	Emilbanca	Installation of a column with a power of 22 kW and consequent adaptation of the electrical system
Transport	New Business Park car charging infrastructure	94	Emilbanca	Installation of 3 wall boxes (22kW) and a charging column (22 kW)
Transport	Electrification of the company fleet	95	Emilbanca	Electrification of the company fleet. From March 2022 to August 2023, full electric cars traveled 23,000 km and saved 3745 kg of CO <sub>2</sub> . Since 2022, 7 cars have been replaced with hybrid technology. Annual investment value
Transport	Sustainable Urban Logistics (Cargo bike / Green fleets)	96	Emilbanca	Bike courier service for the transport of internal correspondence for the 8 branches in Bologna
Transport	Fleet electrification and new refueling stations	112	Ducati	Starting from 2022, the number of electric vehicles within the Ducati company fleet is expected to increase. Consequently, the number of charging stations for electric vehicles is being increased (10 planned, of which 4 have already been installed)
Transport	Corporate carpooling	113	Ducati	The program provides a number of parking spaces reserved for those joining the program
Transport	Adoption of Mobility Manager	114	Ducati	Ducati has equipped itself with a Mobility Manager, has drawn up the Home-Work Travel Plan and has signed the Mobility Management Agreement with the Municipality of Bologna
Transport	Bologna Città 30	125	Municipality of Bologna	Widespread traffic calming interventions

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transport	New discipline on small charging columns	126	Municipality of Bologna	Definition of the guidelines to be implemented in the development plan of the EV charging infrastructure. The fundamental principles are those of the rational use of public space, universal accessibility and interoperability (roaming) of the infrastructure and the services connected to it. All operators must only use energy from RES.
Transport	Green area	127	Municipality of Bologna	Access regulation in the perimeter coinciding with the inhabited center of the municipality of Bologna and the Città 30 (30km/h city)
Transport	Environmental Limited Traffic Zone	128	Municipality of Bologna	Inhibiting all vehicles that do not comply with the rules of the Regional Integrated Air Plan, and defining the criteria for issuing access permits to the heart of the city, which are no longer based only on functional requirements, such as residence, but also on environmental compatibility of motor vehicles.
Transport	Incentive for intermodality	129	Municipality of Bologna	Two facilitated forms of intermodal transport from the interchange car parks to avoid entering the city with a private car which include both buses and bicycles
Transport	Free subscriptions for students	130	Municipality of Bologna	Incentive to use public transport for boys and girls, boys and girls resident in the municipality of Bologna have a free season ticket for Tper public transport.
Transport	Electric monorail for Airport-Station connection	131	Municipality of Bologna	Ecological vehicle equipped with solar panels that reduce the energy required for its operation by 35%
Transport	New Red Line tram network	132	Municipality of Bologna	Development of the Red Line and surrounding infrastructure
Transport	New tram network Northern section of the Green Line	133	Municipality of Bologna	Northern section of the Green Line
Transport	Metropolitan Railway Service completion	134	Municipality of Bologna	Metropolitan train service that connects the city center with the main neighboring metropolitan areas
Transport	Trolleybuses	135	Municipality of Bologna	Strengthening of surface lines of urban public transport with civil works, systems and purchase of trolleybus rolling stock
Transport	Bologna-Portomaggiore underground works	136	Municipality of Bologna	Undergrounding of the urban section of the Bologna Portomaggiore railway line
Transport	Cycle network	137	Municipality of Bologna	Partly completed (over 70% of the km envisaged by Bicipan), partly under construction
Transport	Active mobility promotion: cycle stations and bicycle parking	138	Municipality of Bologna	Construction of 11 cycle stations near the SFM stops. Renovation plan and installation of new racks in schools and other areas spread across the municipal territory to encourage cycling and intermodality with the TPL
Transport	Promotion of active mobility for schools	139	Municipality of Bologna	Community project that aims to spread sustainable school mobility
Transport	Bike sharing	140	Municipality of Bologna	Municipal bike sharing service
Transport	Free-floating car sharing	141	Municipality of Bologna	Fleet composed of 215 vehicles, newly registered, service managed by ENI FUEL



## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transport	Car and bike sharing mobility vouchers	142	Municipality of Bologna	Discounts offered to residents of the municipality of Bologna
Transport	Adoption of Mobility Manager	143	Municipality of Bologna	Promotion of the creation of systems for the organisation, management and rationalization of the demand for private transport, in particular the mobility of company employees and the implementation of sustainable mobility policies applied to home-work travel
Transport	Incentives for the purchase of electric bikes and pedal-assisted cargo bikes	144	Municipality of Bologna	The contribution includes 500 euros for pedal-assisted bicycles and 1,000 euros for pedal-assisted cargo bikes.
Transport	SPINE project (Smart Public transport Initiatives for climate Neutral cities in Europe)	145	Municipality of Bologna	The SPINE project will support the implementation of two multimodal hubs, equipping them with various services and innovations to improve their sustainability, accessibility and inclusion (such as accessible electric charging stations and inclusive information services), and of other solutions for citizen mobility
Transport	URBANE European Plan	146	Municipality of Bologna	Creation of three proximity logistics spaces, in areas identified near the avenues, close to the historic center. The local logistics spaces will be dedicated to the transfer of goods from traditional vans to electric vehicles and electric and muscle-powered cargo bikes
Transport	Adoption of Mobility Manager	205	UniBo	The three-year annual mobility management plan has been prepared with the Municipality of Bologna as well as the annual Home-Work Travel Plan
Transport	Strengthening the use of LPT	206	UniBo	Through an agreement with TPER, discounts and preferential rates promote annual public transport. The agreements also concern the branch offices of Forlì, Cesena, Ravenna and Rimini
Transport	Strengthening cycling mobility	207	UniBo	Encourage an increase in the use of bicycles by offering parking, bicycle maintenance stations and marking services
Transport	PV systems for charging stations	209	Authorized photovoltaic Installations	Building practices for photovoltaic system installation projects and areas to be used for charging electric vehicles with related stalls and columns
Transport	Installation of charging stations	223	Toyota MHM	Installation of 2 additional charging stations for electric cars
Transport	Vehicle replacement for company transport	229	Fondazione Golinelli	Replacement of a Euro 2 vehicle with a Fiat Ducato electric vehicle
Transport	Sustainable Mobility	241	CRIF	<ul style="list-style-type: none"> <li>• Inclusion of sustainable mobility among the 4 pillars of the CRIF Environmental Policy.</li> <li>• Adoption of a corporate Mobility Manager with the aim of measuring, analyzing, designing and monitoring new mobility solutions that meet the travel needs of the company population.</li> <li>• Three-year Mobility Management agreement with the Municipality of Bologna</li> <li>• Introduction of a Mobility Plan to support employees in travel, home-work and personal mobility which includes agreements for the use of alternative means of transport</li> </ul>



Sector	Action	ID	Stakeholders	Description
Waste	Biogas Project	15	CAAB	Construction of a biogas plant at CAAB with the aim of producing electricity from renewable sources
Waste	Good practices for waste reduction	42	AUO BO	Progressive disposal of single-use systems in favor of multi-use systems
Waste	Implementation of use of multipurpose material	59	AUSL BO	Disposal of single-use systems in favor of multi-use systems
Waste	AUSL washable napkins	63	AUSL BO	Replacing disposable napkins with washable ones
Waste	Purchase of greens products	72	All healthcare companies	Purchasing products with characteristics that could contribute to climate neutrality.
Waste	Second Life reuse area	170	Municipality of Bologna	Practices aimed at the reuse of goods as a contrast to the production of waste, through the expansion of spaces aimed at the reuse of goods; there is also a Second Life center where you can channel goods. The project is aimed at all citizens of the municipality of Bologna. By 2021, there will be 70 thousand objects conferred
Waste	Projects for the reuse of municipal administration assets	171	Municipality of Bologna	Specific projects aimed at the reuse of assets abandoned by the municipal administration
Waste	Discount on the "anti-waste" waste tax	173	Municipality of Bologna	Citizens who carry out separate waste collection correctly are entitled to a reduction in the waste tax.
Waste	Discount on waste tax	174	Municipality of Bologna	As part of the reduction of waste production, only domestic users are granted the possibility of equipping themselves with a composter for the treatment of domestic food waste.
Waste	"Albo Circular" Project	215	Confindustria Emilia	Free circular economy platform designed for companies to make services, products and production processes more sustainable. Through quick matching between companies it is possible to identify operators and consultancy services, certifications, analysis and validation, and announcements to sell or purchase materials or production waste.



Sector	Action	ID	Stakeholders	Description
IPPU	Green Anesthesia	64	AUSL BO	Reduction of halogenated vapors and nitrous oxide and where this is not possible, installation of recycling systems for the same. Implementation of totally intravenous anesthesia systems



Sector	Action	ID	Stakeholders	Description
AFOLU	Woodland belt	29	Airport	Creation of a wooded area in the northern area of the airport with the aim of environmental mitigation and compensation: 40 hectares
AFOLU	Urban reforestation	115	Ducati	Near its site it is intended to create a biopark of approximately 20,000 m <sup>2</sup> for a total of 30,000 m <sup>2</sup> of planted land
AFOLU	Green works in the city	208	Municipality of Bologna	The action involves tree planting within the city boundary. To some extent, the action was already foreseen within SECAP, with 1,300 new plantings each year. The mandate goal includes 100,000 trees. The action was therefore estimated as an additional difference between the SECAP objective and the - more ambitious - mandate one

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transversal	Purchase of green electricity	19	Airport	Green electricity purchase
Transversal	Training/information/awareness	31	CNA	Diffusion of a culture in companies energy efficiency and the use of renewable sources. Annual investment value
Transversal	Purchase of certified green electricity	41	AUO BO	Purchase of green electricity certified by Guarantee of Origin
Transversal	Purchase of certified green electricity	58	AUSL BO	Purchase of certified green energy with Guarantee of Origin for the pumping systems
Transversal	Telemedicine Implementation	65	AUSL BO	Projects in the studio: Tele-screening, TAO tele-reporting and digitalisation, VIRTUAL EYE CLINIC, tele-consultation, multi-specialist tele-consultation in CRAs, specialist GP tele-consultation
Transversal	Purchase of certified green electricity	70	IOR BO	Purchase of certified green electricity with Guarantee of Origin from the central purchasing body
Transversal	Telemedicine Implementation	71	All healthcare companies	Services provided by AUSL: televisit, remote reporting, multidisciplinary discussion, Services provided by AUO BO: televisit, telereporting, remote case discussion All services are active and further implementations are expected to start from 2024
Transversal	Training Course	73	All healthcare companies	Environment and Health Programme: The course aims to actively involve healthcare workers in training and information courses on environmental and health issues and in concrete actions to reduce the use of plastics in favor of separate waste collection and recycling.
Transversal	Purchase of electricity from renewable sources	80	TPER	Purchase of electricity from renewable sources. Intercenter is an energy supplier that has guaranteed supplies from renewable sources since 2019
Transversal	Purchase of green energy	82	Emilbanca	Purchase through the BCC Energia consortium coming exclusively from renewables
Transversal	Subsidized financing with energy and environmental objectives	98	Emilbanca	Subsidized loans: 58 total loans in 2023
Transversal	Information campaigns on ESG topics	99	Emilbanca	631 companies involved in 2023 alone; training meetings with 1500 companies involved and 1500 entrepreneurs of which 32.5% in the province of Bologna
Transversal	Subsidized financing for investments with environmental objectives	100	Emilbanca	21 loans in 2023. Type of investments: - energy efficiency - biological conversion -sustainable mobility
Transversal	Information campaigns for the agricultural sector on environmental issues	101	Emilbanca	Creation of training and awareness meetings with operators in the agri-food sector on the following topics: - Energy saving and efficiency - Energy production systems from renewable sources - Use of water resources
Transversal	Environmental and energy training of employees	106	Ducati	Development of mandatory training for all Ducati employees and collaborators on the topic of energy saving and the environmental impact of greenhouse gases
Transversal	Purchase of certified green energy	107	Ducati	Purchase of certified green electricity from the grid for the energy not self-produced within the plant

## 2030 Climate Neutrality Action Plan

Sector	Action	ID	Stakeholders	Description
Transversal	Education in schools and workshops for citizens	175	Municipality of Bologna	Projects such as energy and environment showrooms, repair workshops, material regeneration with associations present in the area
Transversal	Digital Twin	182	Municipality of Bologna	Precise digital model of the city, powered by data and information collected, even in real time, by the city itself, capable of supporting decision-making processes through advanced analysis and forecasting functions, and of co-evolving with its real counterpart. Financed by PON Metro funds
Transversal	Memorandum of Understanding between the Municipality and CNR	184	CNR	Memorandum of Understanding between the Municipality and CNR - "TOGETHER FOR THE CITY OF KNOWLEDGE". Creation of the Science Park as part of the Via della Conoscenza project
Transversal	Dedication of a square to Piero Angela	185	CNR	As part of the "city of knowledge" project, the square in front of the CNR headquarters will be named after Piero Angela
Transversal	CNR centenary	186	CNR	Initiatives to raise awareness, disseminate and inform the public of the research activities carried out within the CNR
Transversal	iENTRANCE@ENL project	190	CNR	iENTRANCE@ENL project - infrastructure for Energy Transition and Circular Economy. Partnership project for the creation of a research infrastructure in the field of nanoscience and nanotechnology dedicated to the topic of energy transition linked to NRRP investments
Transversal	Sustainability Service Desk	214	Confindustria Emilia	The Sustainability Desk is a service to help companies set up their sustainability plan. Through this service, Confindustria provides support to companies to carry out an initial analysis that identifies the intervention priorities for the individual company and set up a corporate sustainability strategy.
Transversal	Young Digital Entrepreneurship Camp project	228	Fondazione Golinelli	Free training course oriented towards entrepreneurship in the "digital" innovation sector, which promotes the technical skills and abilities essential for the future by stimulating resourcefulness through the development of creative and innovative ideas in the environmental and digital fields
Transversal	Purchase of green energy	230	Fondazione Golinelli	Purchase of green energy to cover the annual electricity consumption of the entire Golinelli factory equal to approximately 710,000 kWh. The value of the investment varies based on the market price
Transversal	Climate change Teacher Academy project	231	Fondazione Golinelli	The foundation is a partner of the three-year teacher training project on climate change, financed by the Erasmus+ Teacher Academy, the new flagship action of the Erasmus+ 2021-2027 programme. Financing 80% European funds, 20% foundation
Transversal	Big Data & Climate change School Program project	232	Fondazione Golinelli	Born from the collaboration between the Carisbo Foundation and the Golinelli Foundation, it is a free path dedicated to students in the 2nd and 3rd year of lower secondary schools and in the first year of upper secondary schools in the Metropolitan City of Bologna. The initiative offers a series of free workshops to explore an innovative sector with strong growth and development prospects such as that of Big Data and climate change. The project promotes transversal skills and technical capabilities that are essential for the future. Financing partly Carisbo partly Golinelli.



**Annex 4**  
**Table B-2.2d**  
**List of supporters of Bologna Missione Clima**



### List of supporters of Bologna Missione Clima

Bologna understands the Climate Mission as an objective for the entire city in which a systemic approach that sees the contribution of all the actors involved - citizens, public and private organizations, municipal administration - is fundamental.

The importance of a collective commitment was therefore also realized through a real Call to action addressed to businesses, organisations, associations, the third sector and informal groups of citizens who wanted to contribute to the objective of the Mission through the implementation of material and immaterial actions.

70 organizations responded enthusiastically to the initiative launched in October 2023 by filling out the call to action form and therefore declaring their willingness to support the Mission.

To join, it was necessary to be a public or private organisation, a third sector body or an informal group of citizens that was carrying out an action for climate neutrality, that had carried it out from 2018 onwards or that was committed to carrying it out by 2030 within the administrative territory of the Municipality of Bologna. The call was therefore open both to organizations based within the administrative boundaries of Bologna and to those which, despite having their headquarters in a different municipality, committed to carrying out actions with a direct or indirect impact on the reduction of climate-altering gas emissions in the city.

Below are the admitted organizations which will therefore be an active part of the Bologna Missione Clima process.

Organization name	Number of actions	Action Type	Progress status	Website
Progetto Ristrutturabile	1	Environmental, digital and technological innovation	In progress	<a href="http://www.ristrutturabile.it">http://www.ristrutturabile.it</a>
mammabo project di emmebo srl	2	<ul style="list-style-type: none"> <li>- Reduction of consumption and energy needs;</li> <li>- promotion of urban green and blue</li> </ul>	In progress	<a href="http://www.mammabo.com">http://www.mammabo.com</a>
Kilowatt	2	<ul style="list-style-type: none"> <li>- Information, training</li> </ul>	In progress	<a href="https://kilowatt.bo.it/">https://kilowatt.bo.it/</a>





		and dissemination; - promotion of urban green and blue		
I Sapori dell'Autunno	1	Information, training and dissemination	In progress	-
Città Campagna aps	1	Information, training and dissemination	In progress	-
Confabitare - Associazione Proprietari Immobiliari	1	Information, training and dissemination	To realize	<a href="http://www.confabitare.it">http://www.confabitare.it</a>
WeVèz Soc. Coop.	2	- Production of renewable energy - Information, training and dissemination	- In progress - In progress	<a href="http://www.wevez.it">http://www.wevez.it</a>
Leila Bologna - La Biblioteca degli Oggetti aps	1	Circular economy	In progress	<a href="http://www.leila-bologna.it">http://www.leila-bologna.it</a>
Auser Bologna ODV	2	- Information, training and dissemination - Promotion of urban green and blue	In progress	<a href="http://www.auserbologna.it">http://www.auserbologna.it</a>
Casa di Quartiere 2 Agosto 1980	1	Promotion of urban green and blue	In progress	-
Attraverso Libreria	1	Information, training and dissemination	In progress	-
Produttori Agricoli di Borgo Panigale	1	Information, training and dissemination	In progress	<a href="https://www.produttoriagricoliborgopanigale.it/">https://www.produttoriagricoliborgopanigale.it/</a>
Casa di Quartiere Rosa Marchi	1	Promotion of urban green and blue	In progress	-
Graf - Casa di Quartiere San Donato	1	Information, training and dissemination	Finished	<a href="https://www.grafsandonato.it/">https://www.grafsandonato.it/</a>
Ancescao Bologna aps	1	Information, training and dissemination	In progress	<a href="http://www.ancescao-bologna.it">http://www.ancescao-bologna.it</a>
Consorzio della Bonifica Renana	1	Reduction of consumption and energy needs	In progress	<a href="https://www.bonificarenana.it/servizi/notizie/notizie_homepage.aspx">https://www.bonificarenana.it/servizi/notizie/notizie_homepage.aspx</a>
Arvai Soc. Coop. Agricola	1	Circular economy	In progress	<a href="http://www.arvaia.it">http://www.arvaia.it</a>
Marconi Express SpA	1	Reduction of	In progress	<a href="http://www.marconiexpress.it">http://www.marconiexpress.it</a>



		consumption and energy needs		
AICS Comitato Provinciale di Bologna aps	1	Information, training and dissemination	Finished	<a href="http://www.aicsbologna.it">http://www.aicsbologna.it</a>
Fraternità Cristiana Opera di Padre Marella Città dei Ragazzi	1	Circular economy	In progress	<a href="https://operapadremarella.it/">https://operapadremarella.it/</a>
Associazione Borgo Alice ODV-ETS	1	Information, training and dissemination	In progress	<a href="https://www.borgoalice.it/">https://www.borgoalice.it/</a>
La Carovana Società Cooperativa Sociale	2	Information, training and dissemination	- In progress; - To realize	<a href="http://www.lacarovanacoop.com">http://www.lacarovanacoop.com</a>
ASPPI Bologna	1	Information, training and dissemination	To realize	<a href="https://bologna.asppioncloud.it/">https://bologna.asppioncloud.it/</a>
Mercato Ritrovato	1	Circular economy	In progress	<a href="http://mercatoritrovato.it">http://mercatoritrovato.it</a>
TechneProgetti Srl	1	Information, training and dissemination	To realize	<a href="https://www.techneprogetti.srl/">https://www.techneprogetti.srl/</a>
Il Passo della Barca - Cooperativa Impresa Sociale	1	Information, training and dissemination	In progress	<a href="http://www.ilpassodellabarca.it">http://www.ilpassodellabarca.it</a>
La Terre Violette	1	Promotion of urban green and blue	Finished	-
Associazione Officina Educativa	1	Information, training and dissemination	To realize	<a href="http://www.officina-educativa.it">http://www.officina-educativa.it</a>
Ex Aequo Cooperativa Sociale	1	Information, training and dissemination	To realize	<a href="https://www.exaequo.bo.it/">https://www.exaequo.bo.it/</a>
Ramo d'Oro aps	1	Information, training and dissemination	In progress	<a href="http://www.associazioneramodoro.it">http://www.associazioneramodoro.it</a>
ASD Corri con Noi	1	Information, training and dissemination	In progress	<a href="http://www.corriconnoi.it">http://www.corriconnoi.it</a>
The Social Hub Bologna	1	Renewable energy production	Finished	<a href="http://www.thesocialhub.co">http://www.thesocialhub.co</a>
BackBO Hub aps	1	Information, training and dissemination	Finished	<a href="https://backbo.it/">https://backbo.it/</a>
Associazione Senza il Banco	1	Information, training and dissemination	In progress	<a href="http://www.senzailbanco.it">http://www.senzailbanco.it</a>
the room url sb unipersonale	1	Information, training and dissemination	In progress	<a href="https://www.theroom.it">https://www.theroom.it</a>



SAM Project Srl	1	Information, training and dissemination	In progress	<a href="http://www.samproject.it">http://www.samproject.it</a>
M'Over Walking aps ASD		Information, training and dissemination	In progress	-
Valentina Gozzi Studio - Giovanna Varotti Studio	1	Reduction of consumption and energy needs	In progress	<a href="http://giovannavarotti-studio.com">http://giovannavarotti-studio.com</a> e <a href="http://valentinagozzi-studio.it">http://valentinagozzi-studio.it</a>
Diventare Alberi	1	Promotion of urban green and blue	To realize	<a href="https://www.diventarealberi.it/">https://www.diventarealberi.it/</a>
Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori di Bologna	1	Reduction of consumption and energy needs	In progress	<a href="http://www.archibo.it">http://www.archibo.it</a>
Associazione Dilettantistica Polisportiva Lame	1	Reduction of consumption and energy needs	To realize	<a href="http://www.polisportivalame.bologna.it/">http://www.polisportivalame.bologna.it/</a>
Go2RAIL aps	1	Reduction of consumption and energy needs	In progress	<a href="http://www.go2rail.eu">www.go2rail.eu</a>
Amici di Rigosa	1	Reduction of consumption and energy needs	In progress	-
Ento Labs aps	3	<ul style="list-style-type: none"> <li>- Reduction of consumption and energy needs</li> <li>- Reduction of consumption and energy needs</li> <li>- Information, training and dissemination</li> </ul>	To realize	<a href="https://www.ento.ai/">https://www.ento.ai/</a>
Camilla Emporio di Comunità Soc. Coop.	1	Circular economy	To realize	<a href="http://www.camilla.coop">www.camilla.coop</a>
Abantu Società Cooperativa Sociale	1	Circular economy	In progress	<a href="http://www.coopabantu.it">www.coopabantu.it</a>
Day Ristoservice SpA Società Benefit	3	<ul style="list-style-type: none"> <li>- Promotion of urban green and blue;</li> <li>- Promotion of urban green and blue;</li> <li>- Environmental, digital and technological innovation</li> </ul>	<ul style="list-style-type: none"> <li>- Completed;</li> <li>- Completed;</li> <li>- Finished</li> </ul>	<a href="http://www.day.it">http://www.day.it</a>



Associazione Parco dei Cedri nel Cuore ODV	3	<ul style="list-style-type: none"> <li>- Information, training and dissemination;</li> <li>- Environmental, digital and technological innovation;</li> <li>- Information, training and dissemination</li> </ul>	<ul style="list-style-type: none"> <li>- In progress;</li> <li>- In progress;</li> <li>- In progress</li> </ul>	<a href="http://www.cortebellaria.it">www.cortebellaria.it</a>
Fondazione Carisbo	2	<ul style="list-style-type: none"> <li>- Information, training, dissemination;</li> <li>- Information, training, dissemination</li> </ul>	<ul style="list-style-type: none"> <li>- in progress;</li> <li>- Finished</li> </ul>	<a href="http://www.fondazionecarisbo.it">http://www.fondazionecarisbo.it</a>
100 per il Clima	1	Information, training, dissemination	To realize	-
Centro Natura Srl	2	<ul style="list-style-type: none"> <li>- Information, training, dissemination;</li> <li>- Reduction of consumption and energy needs</li> </ul>	<ul style="list-style-type: none"> <li>- In progress;</li> <li>- In progress</li> </ul>	<a href="http://www.centronatura.it">http://www.centronatura.it</a>
Fondazione del Monte di Bologna e Ravenna	1	Promotion of urban green and blue	Finished	<a href="http://www.fondazioneelmonte.it">http://www.fondazioneelmonte.it</a>
Sprintaly	1	Information, training, dissemination	To realize	<a href="https://www.sprintaly.it/">https://www.sprintaly.it/</a>
Associazione Generation Carbon	1	Information, training, dissemination	In progress	-
Volt Bologna	1	Information, training, dissemination	In progress	<a href="https://www.voltbologna.org/">https://www.voltbologna.org/</a>
Tecnoscienza Srl - Impresa Culturale Creativa	1	Information, training, dissemination	In progress	<a href="http://www.tecnoscienza.it">http://www.tecnoscienza.it</a>
GreenGo Srl	1	Information, training, dissemination	In progress	<a href="https://green-go.net">https://green-go.net</a>
REA Srl - Reliable Energy Advisors	4	<ul style="list-style-type: none"> <li>- Information, training, dissemination;</li> <li>- Information, training, dissemination;</li> <li>- Information, training, dissemination;</li> <li>- Information,</li> </ul>	<ul style="list-style-type: none"> <li>Completed;</li> <li>Completed;</li> <li>In progress;</li> <li>To realize</li> </ul>	<a href="https://readvisor.eu/">https://readvisor.eu/</a>



		training, dissemination;		
FIMM Srl	1	Information, training, dissemination	To realize	<a href="https://www.fimm.com/">https://www.fimm.com/</a>
Impronta Etica	1	Information, training, dissemination	Finished	<a href="https://www.improntaetica.org/">https://www.improntaetica.org/</a>
Dismeco srl	2	- Circular economy - Circular economy	- In progress - To realize	<a href="http://www.dismeco.com">http://www.dismeco.com</a>
IMAGEM srl	1	Information, training, dissemination	To realize	<a href="http://www.imagem.it">http://www.imagem.it</a>
Pictor Soc. Coop.	2	- Electrification of energy consumption - Environmental, digital and technological innovation	- In progress - In progress	<a href="http://www.cooperativapictor.it">http://www.cooperativapictor.it</a>
Arca di Noè Soc. Coop.	1	- Circular economy	In progress	<a href="https://www.arcacoop.com/">https://www.arcacoop.com/</a>
SUMs architects	2	- Renewable energy production - Circular economy	- In progress - In progress	<a href="http://www.sumsarchitects.it/">http://www.sumsarchitects.it/</a>
Synergy srl	2	- Renewable energy production - Information, training and dissemination	- Finished - To realize	<a href="http://www.synergy.it">http://www.synergy.it</a>
A Tutta Birra APS	1	Information, training and dissemination	In progress	<a href="https://atuttabirrabologna.wixsite.com/website">https://atuttabirrabologna.wixsite.com/website</a>
SITEB strade e Bitumi	1	- Information, training and dissemination	To realize	<a href="https://www.siteb.it/">https://www.siteb.it/</a>
Gruppo Ingegneria Benefit srl	2	- Information, training and dissemination - Promotion of urban green and blue	- In progress - In progress	<a href="https://gruppoingegneria.it/">https://gruppoingegneria.it/</a>
Massimiliano Roberto	1	Information, training and dissemination	To realize	-



## **Annex 5**

### **Listening and alignment process for the definition of a shared vision of achieving climate neutrality**



## Listening and alignment process for the definition of a shared vision of achieving climate neutrality

### 1. Context

Bologna embarks on the path towards climate neutrality by involving the entire city system in defining how to achieve the objective.

The involvement of stakeholders and organizations is fundamental and necessary as the effects of the Climate Mission path will impact every type of entity and organization, all activities and the way in which the city is experienced.

It is for this reason that, between the end of 2022 and the first months of 2023, the Municipality of Bologna together with Fondazione per l'Innovazione Urbana-Rusconi-Villa Ghigi, created a listening and alignment process involving both the stakeholders inside and outside the administration. The objectives of this path were to identify the barriers and opportunities of the Mission and define the main challenges and co-benefits that neutrality will have on the city with respect to some transversal themes, in particular social inclusion, work, health and well-being .

Below is the timeline of the journey:



### 2. Internal Focus Groups

Between December 2022 and May 2023, 10 focus groups were held with 48 representatives of the different Sectors and Departments of the Municipality of Bologna who discussed and analyzed the relationships between their activities and the Bologna Climate Mission.

The objective of the focus groups was to understand, depending on the activities carried out by each Sector/Department, what are the opportunities that they could offer to the Mission and vice versa, what are the benefits that the path to neutrality could offer to their objectives and actions. Furthermore, risks and barriers observed from different points of view were discussed.



Below is the list of subjects involved:

- **Department of Urban Planning, Home and Environment:** Marika Milani.
- **Ecological Transition and Climate Office Sector:** Claudio Savoia, Lara Dal Pozzo, Valentino Ventrella, Chiara Cervigni, Federico Bortolot.
- **Planning Office Sector:** Francesco Evangelisti, Samantha Trombetta, Valentina Ballotta.
- **Heritage Sector:** Mauro Muzzi .
- **Private Construction Services Sector:** Monica Cesari, Andrea Menarini.
- **Department of Public Works, Green and Mobility:** Cleto Carlini.
- **Infrastructure and Sustainable Mobility Sector:** Gian Matteo Cuppini; **Tram Network Intermediate Unit and plans and projects for sustainable mobility:** Giancarlo Sgubbi; **Intermediate Unit Mobility Systems:** Luca Bellinato .
- **Public Good Management Sector:** Mirko Lelli, Chiara Caranti; **Building Maintenance Intermediate Unit:** Simone Stella.
- **Sports Sector:** Paolo Ricci.
- **General Secretariat, Tenders and Contracts Area:** Lara Bonfiglioli; **Tender and Procurement Intermediate Unit:** Maria Pia Trevisani, Maria Filomena Falivene, Gessica Frigato.
- **Human Resources Area and Organization:** Daniela Gemelli, Christian Baraldi, Rosanna Vallarelli.
- **Education Area:** Veronica Ceruti.
- **Civic Museums Sector:** Eva degli Innocenti.
- **Tourism Intermediate Unit:** Patrizia Minghetti.
- **Welfare Department:** Eugenio Soldati.
- **Neighborhoods Area:** Berardino Cocchianella .
- **Public Space and Green Footprint Intermediate Unit:** Giovanni Ginocchini.
- **Programming and Statistics Area:** Maria Grazia Bonzagni, Teresa Scarnati, Fabrizio dell'Atti; **Municipal Office of Statistics Intermediate Unit:** Silvia Marreddu.
- **Culture and Creativity Sector:** Giorgia Boldrini.
- **Social Service Sector:** Chris Tomesani.
- **Local Police:** Romano Mignani .
- **Security Intermediate Unit:** Antonella Sava.
- **Civil Protection Intermediate Unit:** Angelo Giselico.
- **External Relations Intermediate Unit:** Ilaria Bellelli
- **Security and Logistics Operational Unit:** Silvia Frontini.
- **Information Systems Intermediate Unit :** Stefano Mineo.
- **Innovation and Administrative Simplification and Relations with Citizens Sector:** Maurizio Ferretti.
- **Economy Sector and Environmental Procedures Operational Unit:** Pierina Martinelli.
- **Portici World Heritage Intermediate Unit:** Federica Legnani.





### 3. Focus Group with Deputy Mayors

On 16 May 2023, a focus group was held which involved the Deputy Mayors with mandates more directly linked to the themes of the Mission.

The focus group had the objective of transversally analyzing the connections between the policies developed by the various mandates and the Climate Mission.

In an initial phase of work, the priority policies of each Deputy Mayor were re-read with respect to the expected impacts on three key aspects for the Mission: social inclusion, work, health and well-being.

In a second phase of work, it was discussed how these policies can benefit from the path towards climate neutrality and what the contribution of the same policies to the Bologna Climate Mission will be.

Below is the list of representatives of the Deputy Mayors involved:

- **Deputy Mayor Emily Marion Clancy:** Housing and housing policies, environmental policies and climate assembly, equal opportunities and gender differences, LGBT rights, fight against discrimination, fight against violence and trafficking against women and minors, night economy .
- **Deputy Mayor Anna Lisa Boni:** International relations and cooperation, European funds control room, climate mission 2030: neutrality and transition, spokesperson for the Garisenda and Portici Unesco restoration and fundraising project.
- **Deputy Mayor Daniele Ara:** School, new architectures for learning, adolescents, agriculture, agri-food and water networks, education for peace and non-violence.
- **Deputy Mayor Massimo Bugani:** Communication and monitoring of construction sites, civil protection, digital innovation, cyber security, civic use of data, relations with the municipal council, union relations within the institution.
- **Deputy Mayor Luisa Guidone:** Neighborhood economics and commerce.
- **Deputy Mayor Roberta Li Calzi:** Budget, sport, demographic services, presidency of the municipal electoral commission and of the commission for updating the lists of popular judges.
- **Deputy Mayor Valentina Orioli:** New mobility, infrastructure, local public transport, Città 30, protection of cultural heritage and historic gardens.



- **Deputy Mayor Luca Rizzo Nervo:** Welfare and health, new citizenships, fragility, elderly people, disabilities.
- **Delegate Erika Capasso:** Delegate for neighborhood reform, civic imagination, neighborhood houses project, policies for the third sector, participatory budgeting, social inquiry, circular subsidiarity.
- **Delegate Elena di Gioia:** Delegate for culture of Bologna and the metropolitan city.
- **Delegate Rosa Grimaldi:** Delegate for economic promotion and attractiveness, innovation, businesses and start-ups, cultural and creative industries, impact of the technopole.

#### 4. Envisioning

On 5 June 2023, a day of work took place which involved over 70 representatives from the world of research, institutions, the third sector and the local economy of Bologna to identify the impacts and co-benefits that climate neutrality can generate on the city in terms of health, well-being of citizens, combating social exclusion, work and more generally on its attractiveness.

The participants were divided into three discussion groups: local economy, institutions and third sector with the transversal presence of representatives from the world of research. Within the three groups, further subgroups were created to address one of the three transversal themes (work, social inclusion or health and well-being) and identify the benefits and relationships generated by the connection with the Mission to 2030.

After this exercise, the results were shared within the three groups and the main factors that hinder and facilitate the carrying out of the Bologna Climate Mission were defined together, always taking into consideration the three transversal themes.





## 5. Living in Bologna in 2030. Imagination Workshop for Climate Neutrality

On 14 December 2023, "Living in Bologna in 2030. Imagination Workshop for Climate Neutrality" took place with the aim of contributing to the definition of a Vision that represents the transformation of Bologna into a neutral city from the point of view of its citizens. Before the meeting, Fondazione per l'Innovazione Urbana, Rusconi, Villa Ghigi had developed, starting from the results of previous events, a representation of the current lives of fourteen imaginary people from Bologna. During the meeting the participants developed a transformative picture of how the lives of these fourteen people will change when Bologna reaches climate neutrality, i.e. 2030.

Below is the list of participants and session moderators:

- **Federica Cipriani** of BackBo - Circular Economy Hub.
- **Erik Kooijmans** , Member of the Citizens' Assembly for Climate.
- **Lorenzo Benfenati** of WeVèz - Building an energy community in Emilia Romagna.
  
- **Francesca Sabatini**, University of Bologna.
- **Louise -Nour Sasser**, University of Bologna.
- **Martina Massari**, University of Bologna.



- **Riccardo Mercuri**, University of Bologna.
- **Saveria Boulanger**, University of Bologna.
- **Serena Pagliula**, University of Bologna.
- **Andrea Mularoni**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi.
- **Chiara Sponza**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi.
- **Mauro Bigi**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi
- **Marta Zaramella**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi.
- **Michele d’Alena**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi.
- **Noemi Julián**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi.
- **Rosanna Prevete**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi

**Moderators:**

- **Andrea Fabbri**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi
- **Sergi Vera Ponte**, Fondazione per l’Innovazione Urbana, Rusconi, Villa Ghigi

Below we report the work tool used to develop the activity described.



Listed below are the main conclusions derived from the activity “Living in Bologna in 2030. Imagination Workshop for Climate Neutrality”.

**6. Results**

The activities listed above have contributed both to achieving awareness of the importance of a vision and a shared commitment to achieving climate neutrality in Bologna, and to imagining how the activities of the Bologna Missione Clima will influence urban organization and how much they will impact on life of the people who live, work and frequent the city.

Below are the main barriers and opportunities and therefore the related conclusions identified throughout the process described.



## 6.1 The main barriers

From the activities reported above, the following barriers have emerged which are essential to overcome if we want to achieve climate neutrality in Bologna, guaranteeing equity and an improvement in the quality of life:

### Inequalities and human rights

- The inequalities generated by choices that are not yet within everyone's reach;
- Ecological choices still cost too high and are not accessible to the entire population and to many organized entities;
- The overly technical communication of many aspects concerning neutrality is not very accessible to all citizens;

### Behavioral and educational

- An insufficient assumption of co-responsibility by all the city's actors regarding the achievement of climate neutrality;
- The resistance of citizens to changing behavioral habits in terms of consumption of energy and natural resources;
- A poor culture of energy efficiency among public administration concessionaires.

### Techniques

- The implementation of neutrality measures frequently clashes with the need to grant exemptions from what is defined at the planning and urban and building regulation levels, both by the public and private sectors;
- Few virtuous interventions for neutrality that can be examples to follow;
- Difficulty in measuring certain climatic phenomena but also real emissions linked to some areas (e.g. private transport, construction sites, etc. );
- Limited knowledge of some of the technological solutions by operators.

### Bureaucratic

- Bureaucratic complexity and insufficient resources to intervene in the adaptation and upgrading of existing buildings, also considering the low impact generated by national incentive measures in recent years (i.e. Super Bonus).

### Systemic

- The difficulty in overcoming a sectoral approach in the implementation of complex projects that require intersectoral collaboration;
- The hegemonic transport model based on private transport;
- The complexity in extending the actions for the Mission also to citizens;
- The impossibility of impacting and transforming the labor market;
- The difficulty in democratizing energy so that it can be self-managed and shared.

## 6.2 The main opportunities



In the involvement process described above, a series of opportunities and co-benefits linked to the achievement of climate neutrality also emerged. It has often been underlined how these opportunities generated represent a virtuous circle in which Bologna Missione Clima becomes both facilitator and beneficiary at the same time. Furthermore, the Mission represents an opportunity to address and accelerate the overcoming of some of the barriers described in the previous point.

#### Governance

- Work in an integrated and transversal way, within the municipal administration and in connection with external and market actors;
- Experiment with new forms of collaboration between public and private;
- Facilitate social exchanges with the aim of enabling citizen participation and ensuring that Bologna Climate Mission is transferred to a city level;
- Rethink current governance, democratize the city and energy more, putting people at the center in such a way as to make them capable of contributing to climate neutrality;
- Develop a polycentric city that can be more locally self-managed;
- Co-responsibilize the entire city system and make choices for change that look to the long term.

#### Health and wellness

- Air quality and the strengthening of green areas are two aspects that mutually benefit from the carrying out of the Mission, having a considerable impact on the health of citizens;
- The new actions for active mobility and the promotion of public transport have an impact on the quality of life and health of people but also on the reduction of climate-changing gas emissions;
- Putting people's lives and their rights at the center and reducing inequalities by promoting social well-being and reducing the risk of energy poverty in the most fragile communities.

#### Education and training

- Form the basis of an information network and an infrastructure of innovative services for citizens through neighborhood homes;
- Raise awareness and engage citizens through cultural, museum and sporting events;
- Spread the Mission and raise awareness among citizens by integrating environmental education into the school system that has a greater effect on the care of the territory, nature and the reduction of emissions;
- Communicate the contribution that certain policies can make to health and to the Bologna Climate Mission.

#### Market and work

- Experiment with innovative financial instruments, leveraging participation in the European Mission and recognition of the quality of the Climate City Contract by the



European Commission;

- Recognize and support virtuous economic activities in terms of reducing climate-altering gases;
- Increase workers' green skills.

Energy efficiency in buildings

- Accelerate the energy efficiency of Bologna's buildings, avoiding the social exclusion of the most vulnerable.

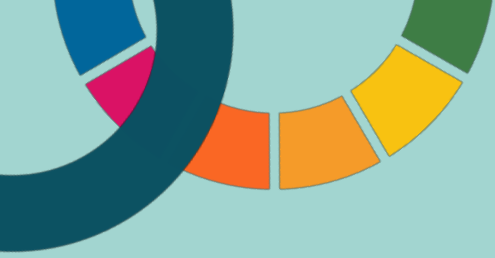
Communication

- Communicate neutrality in a language that is accessible, understandable and inclusive for all.

In conclusion, it is possible to state that this path of alignment and listening has been fundamental to commit, between now and 2030, to achieving a future of a healthier, more inclusive and proximity life for the citizens of the city of Bologna.

Visualizing the main barriers in order to break them down and emphasizing the numerous opportunities to allow their realization have in fact been key points for tracing the path of the Mission and will remain cornerstones for achieving the objective.





## Climate City Contract

# 2030 Climate Neutrality Commitments

## Climate Neutrality Commitments of the City of Bologna



**Comune  
di Bologna**



**Bologna  
Missione  
Clima**

*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.*





## Table of contents

The Vision of “Bologna Missione Clima” .....	3
1 Introduction .....	6
2 Goal: Climate neutrality by 2030 .....	9
3 Strategic priorities .....	10
4 Process and underlying principles .....	14
5 Signatories .....	18
Appendix 1: Individual Signatory Commitments .....	20



## The Vision of “Bologna Missione Clima”

*My name is Paolo, I'm 34 years old and I live in Bologna in a recently renovated two-room flat. Luckily, today, in 2030, household management costs are no longer as high as they used to be a few years ago, before Bologna reached climate neutrality. Being a member of a renewable energy community and the complete electrification of my place allowed me to decrease costs and therefore live a better quality of life".*

*“My name is Fatma, I am Kurdish and I have been living and working in Bologna for four years. Every morning I wake up early to take my daughter to school and then go to work by public transport. Today in 2030, thanks to the improvement of the city's sustainable mobility services, I no longer arrive late to work because of the traffic and the walking journeys that I was forced to take due to the scarcity of available lines and vehicles. Moving to climate neutrality in the city has in fact meant improved public transport, the possibility of having an integrated bus/bike/tram pass and a decrease in traffic resulting from the decrease in the use of private cars".*

*“My name is Alessia, I'm a lawyer and I live with my family on the hills of Bologna. I just returned from my local community store where I bought organic, farm-to-table fruit and vegetables for the week. Today in 2030, thanks to the increase in community stores and farmers' markets even in less central areas of the city, I have been able to significantly reduce purchases at the supermarket and consequently also the number of wastes produced. In my local emporium, they really care about ensuring that the whole city keeps up with our achievements in terms of climate neutrality. That is why they offer the possibility of purchasing loose products and they have totally eliminated plastic packaging ".*

Paolo, Fatma and Alessia are just three of the many possible residents of Bologna that we can imagine to be living in 2030 and represent examples of how their lives would change after the achievement of climate neutrality in the city.

Addressing climate emergency means first of all acting in cities and with citizens. It is precisely on this assumption that the European Union Mission to promote 100 smart and climate neutral cities by 2030 was developed, i.e. twenty years before the other European cities and the EU as a whole. Bologna chose to be part of this community and undertake the ambitious path towards zeroing its climate impact, thus giving life to “Bologna Missione Clima”.

The question we asked ourselves when embarking on this mission is: **"How will Bologna Missione Clima and its Climate City Contract influence urban organization and how will it impact the lives of the people who reside, work, play and use the city?"**

Two are the essential lines guiding Bologna towards achieving this ambitious goal: a bottom-up approach, through an organic dialogue with the citizenship and local communities, and the strengthening of the ecological DNA and commitment of the entire city to 2030 and beyond.

The rationale behind Bologna Missione Clima is the idea that the journey towards climate neutrality is as important as the destination, if not more. The aim is to create a strong collective awareness on climate, internalize virtuous behaviors and implement concrete interventions capable of influencing the local dimension and, eventually, the global one.

For the first time in its history, the city, with its institutions, its private sector and industry, its third sector and its citizenship, rallies around a common objective, climate neutrality by 2030. We are changing the



responsibility paradigm from an individual one to a collective one. This is why the participatory dimension of citizens and the federation of all local actors are placed at the center of our vision.

Both during the six Neighborhood Labs on Participatory Budgeting and in the Climate Citizens Assembly's recommendations, it's been citizens that have been proposing concrete projects and initiatives to achieve climate neutrality. As early as 2017, with the first Neighborhood Lab, the foundations have been laid for the creation of spaces for democratic discussion and participatory decision-making, accessible to all, facilitating dialogue between administrative policies and the local dimension. Participatory budgeting is thus a direct evolution of this process as a recognised instrument of direct democracy.

The cornerstone of the participatory dimension of citizenship in Bologna Missione Clima is though the establishment in 2022 of the Citizens Assembly for Climate - a new formal body added to the municipality statutes that is composed of 100 randomly selected citizens in the co-definition of municipal policies (methodology and outputs are well documented in the Action Plan). Energy retrofitting of public and private buildings, renewable energy production and communities, improvement of the quality of life through more green and blue solutions, increase of farmers' markets, increase of sustainable mobility practices and reduction in car traffic are just a few of the main recommendations produced by the members of the Assembly. Recommendations that are very well reflected in the changes imagined in the lives of ideal Bolognese models described above and which are totally in line with the key measures that we have included in our Climate City Contract.

Together with citizens' engagement, it is also fundamental to implement a federative approach that aims to strengthen old alliances and create new ones, across the board.

Twenty-five local partners including our municipality, both public and private, have decided to work together and commit to Bologna Missione Clima through concrete actions contributing to a significant emission reduction and therefore included in the Action Plan and Investment Plan of this Contract.

In addition to directly involving the city's most significant stakeholders, we launched a call to action addressed to businesses, third sector associations, informal citizens groups that wished to contribute to the Mission via the implementation of material and immaterial actions for neutrality. Over 80 organisations responded enthusiastically to the initiative launched in October 2023 and will therefore be an active part of this ambitious journey.

Bologna Missione Clima will also help the city to change its transformation paradigm towards a systemic approach that integrates policies, projects, measures needed to achieve climate neutrality. Making infrastructures, building and transport climate proof, increasing local renewable energy production, rethinking public space with more green solutions, developing tools like energy and mobility digital twins, raising the climate awareness of citizens, are only some of the many interventions aimed at increasing energy autonomy, fighting energy poverty, creating new jobs, improving the health and quality of life for all citizens. Policies such as lowering speed limits to 30 km/h in cities aim to increase the quality of life through promoting proximity, increasing road safety and reducing air pollution.

Furthermore, the work of regulatory coordination and institutional synergy with other levels of governance such as the Emilia-Romagna Region and the Italian government on the one hand, and, with the other 8 Italian cities of the Mission that Bologna coordinates, on the other, will help to break down those barriers that currently slow down or prevent the necessary transformations.

We want this Mission to be for and by the whole city. This is the way to make the lives of Paolo, Fatma, Alessia become reality.



Only through a collective commitment, a transversal and systemic approach and a multi-level governance will it be possible to build the climate of change that is so much needed to fight climate change.

Bologna Missione Clima - L'impresa eccezionale è essere neutrale.

Anna Lisa Boni Deputy Mayor in charge of Bologna Missione Clima



# 1 Introduction

## Introduction

The Climate City Contract represents the latest evolution of a path to reduce GhG emissions that the City of Bologna has formally undertaken since 2007 and thanks to which the city's per capita CO<sub>2</sub> emissions have been reduced from more than 6 tons /year in 2005 to 4 tons/year.

**The path of the Municipality of Bologna in the implementation of policies aimed at fighting climate change** was started in the 1990s with the first Municipal Energy Plan, then updated during the 2000s, but the assumption of the first concrete commitment to reducing carbon emissions into the atmosphere, in accordance with the Kyoto Protocol reduction goals for Italy, takes place with the Municipal Energy Program (PEC) of 2007. It was followed by:

- the adhesion to the Covenant of Mayors in 2008, approving the Sustainable Energy Action Plan (SEAP) in 2012;
- the adhesion the “Mayors Adapt – the Covenant of Mayors Initiative on Adaptation to Climate Change” initiative in 2014, approving the “Climate Change Adaptation Plan of the city of Bologna” in 2015;
- the achievement in 2018 of the objective of reducing GhG emissions by almost 22% compared to 2005 as set by the SEAP;
- the approval by the City Council of the Declaration of Climate and Ecological Emergency on 30 September 2019, which recognizes the urgency of fighting against climate change. The Declaration contains a series of commitments, including: promoting knowledge on CO<sub>2</sub> emissions, acting immediately to reduce emission levels to reach net zero by 2030; promote citizen participation in environmental policies. The Declaration also asks that measures to confront the climate emergency comply with the following principles: Climate and ecological justice, participatory and deliberative democracy, transparency.
- the adhesion to the New Covenant of Mayors for Climate and Energy in 2019, approving the Sustainable Energy and Climate Action Plan (SECAP) in 2021;
- the integration of SECAP adaptation and mitigation measures within the General Urban Plan and the Building Regulations, approved in 2021.
- The introduction in 2021 of some changes to the Municipal Statute of the Municipality of Bologna; the changes introduced by Council Resolution 77/2021 of 12/07/2021 concern the inclusion of the objective of a just ecological transition, sustainable development and places climate neutrality among the programmatic goals of the Municipality. Article 6 also formalises the Citizens' Assembly as a participatory institution.

The SECAP is the main tool through which the Municipality, up until the development of the Climate City Contract (CCC), estimated and monitored greenhouse gas emissions in the municipal territory and planned objectives and actions for reducing GhG emissions and for climate adaptation. The objectives contained therein have been largely implemented and developed in the General Urban Plan and in the Municipality's Building Regulations, key instruments that regulate all building and urban transformations in the area, thus aligning them with the adaptation and emissions reduction objectives set by the SECAP (40% reduction in emissions by 2030, compared to the 2005 baseline).

The CCC aims to be the natural evolution of the SECAP in terms of climate change mitigation, by resuming, updating and strengthening emissions reduction actions, with the aim of accelerating the achievement of neutrality by 2030. In particular, the CCC has triggered **a broader process based on a systemic approach, which follows the Net Zero Cities guidelines, integrating the following aspects:**



- **Synergistic and systemic planning of actions**, transversal to all sectors (Buildings, Waste and waste water, Transport, Industrial Processes and Product Use and Agricultural, forestry and other land use sectors) and exploiting all the levers of change (Governance & Policy, Finance & Funding, Social Innovation, Democracy & Participation, Technology & Infrastructure, Learning & Capabilities);
- **Strategic approach based on the Theory of Change**, in order to monitor actions and related impacts not only in terms of reducing emissions, but also of achieving co-benefits in other areas;
- **Collaboration and innovative governance for the activation of an "inclusive ecosystem for change"**, which includes:
  - commitment to actions and investments by local actors;
  - involvement and active participation of citizens;
  - multilevel governance to support the Mission's objectives.
- **Development of an Investment Plan** that supports the Action Plan.

**The Municipality has undertaken the path towards climate mitigation and adaptation also thanks to the stimulus of the citizens, who have demonstrated a growing awareness of climate change, as a consequence of the increasingly evident effects of these changes on the local territory.** Locally these effects manifest themselves mainly with an increase in average temperatures, with stronger anomalies during the summer period (increase in the duration of heat waves and tropical summer nights), the extension of periods of absence of rain and the increase in frequency of days with heavy rainfall. In particular:

- water scarcity has taken on ever greater importance, in 2021 Bologna was the city in the Emilia Romagna Region with the least rainfall (only 417 mm in 2021) and with the highest decrease compared to the decade 2005-2016 (311 mm less, -40.9%);
- the 2023 meteorological autumn in Emilia Romagna was the warmest since 1961 and in the September - October - November quarter the average and maximum temperatures recorded record values. The average regional temperature, in fact, with a value of 15.82 °C, was +2.3 °C higher than the average for the thirty-year period 1991-2020<sup>1</sup>;
- from a hydraulic and hydrogeological point of view, a dramatic representation of the effects of ongoing climate change can be traced back to the intense, extensive and persistent meteorological events of 1-4 and 16-18 May 2023 which affected a large portion of the Emilia Romagna Region, generating floods and landslides. In the Municipality of Bologna these events generated significant flooding in the urban area and the activation of over 200 landslides in its hilly territory, for a surface area affected by the disasters amounting to approximately 200,000 m<sup>2</sup>.

Also following these events, a recent survey commissioned by the Municipality of Bologna and the Metropolitan City on the quality of life of citizens, carried out in September 2023 on a stratified sample of the population, indicates that the majority of the municipal sample perceived an increase of extreme climatic phenomena in recent years. Furthermore, 86.1% of those interviewed residing in the Municipality believe that climate change represents a global emergency, 75% agree that it is a direct consequence of human activities and 66% believe that it also depends on lifestyle and habits of individual consumption.

It is also due to this increasingly widespread awareness and the growing consensus of Bologna citizens with respect to the objective of reducing emissions to zero, that the Municipality of Bologna has joined the "Climate Neutral Cities Mission" as a commitment to continue and accelerate the path

---

<sup>1</sup> Source ARPAAE: <https://www.arpae.it/it/notizie/autunno-2023-record>



already undertaken to reduce GhGs within a broader strategy, oriented towards improving the sustainability of the territory, the protection of nature and ecosystems, the healthiness and well-being of the population of all ages, which aims to transform the city from a centre of maximum consumption and production of outputs (emissions, wastewater and waste) to an efficient, generative and regenerative centre of resources (energy, water and materials).

**To sum up, the systematic process that led to the co-design of the Action Plan for climate neutrality and the Investment Plan** included:

- the creation of the Transition Team for the coordination of the Mission;
- innovative governance actions internal and external to the Municipality, such as focus groups with the Municipal Council and all municipal Departments and Sectors, the Citizen Assembly for Climate, the involvement of stakeholders through events, meetings, a call to action addressed to organisations and businesses;
- social innovation activities and participatory processes with citizens, the participatory budget focused on the Mission, the connections with the Neighborhood Laboratories;
- working groups with subjects and institutions at regional, national and European level to strengthen multilevel governance in support of the Mission;
- the coordination of the national network of the 9 Italian cities involved in the Mission.

Through these processes, we attempted to identify jointly with citizens and stakeholders the barriers and **opportunities deriving from the climate transition path linked to the CCC**. These in summary are the opportunities perceived by the City of Bologna deriving from the Mission:

- **Activate innovative governance processes:** work in an integrated and transversal way, within the municipal administration and in connection with external and market actors; experiment with new forms of collaboration between public and private; enhance citizen participation on the topic; co-responsibilise the entire city system and make choices for long term changes.
- **Improving health and well-being:** air quality and urban greening are two aspects which, although already present in municipal territorial governance tools, will benefit from the boost deriving from the Mission, having a considerable positive impact on the healthiness of the urban environment. The actions implemented by the CCC in the field of public transport and mobility will also have a positive impact on people's quality of life and health. Same will happen for the actions aimed at greater access to clean and renewable energy.
- **Further disseminate information, education and training:** a theme that emerged transversally from the dialogue and processes activated with citizens and stakeholders is that of the importance of strengthening awareness, information, education and training actions on the issues of climate transition, through cultural events, museum and sport events, strengthening environmental and climate education in schools, using accessible and effective communication and disseminating these services more widely across the territory.
- **Stimulate market and work:** the Mission is also perceived as an opportunity to increase workers' green skills, develop a local market linked to renewable sources, make the city and businesses more resilient with respect to the dynamics and trends of energy prices linked to fossil fuels, and experiment with innovative financial instruments.
- **Accelerate the energy efficiency** of Bologna's buildings, avoiding the social exclusion of the most vulnerable and combating energy poverty with structural and widespread measures.





## 2 Goal: Climate neutrality by 2030

### Goal

**The specific objective of the Action Plan** for climate neutrality by 2030 is to make the entire city of Bologna:

- net zero emissions by 2030 (in line with the Mission's definition of climate neutrality);
- almost energetically autonomous through the local production of energy from renewable sources.

**The objectives of the Climate City Contract are:**

- 1. CLIMATIC** – zero net GhG emissions in the City of Bologna by 2030.
- 2. RELATED TO THE URBAN ENVIRONMENT HEALTH** - improve air quality and reduce the heat island effect.
- 3. SOCIO-ECONOMIC** - greater energy autonomy through the local production of energy from renewable sources, also as a form of fighting energy poverty and increasing business competitiveness.
- 4. RELATED TO ADMINISTRATIVE IMPROVEMENT** – transversality, efficiency, programming.

**The boundaries of the CCC for the city of Bologna** is the administrative territory of the Municipality of Bologna; there are no areas of exclusion, as proposed in the application. The actions collected refer to the period from 2018 (year taken as the reference baseline) up until today (March 2024), including actions under study (in the Action Plan these are included separately from those carried out, in progress or approved). ETS facilities were not included in accordance with the Net Zero Cities guidelines.

In addition to the macro objective of reducing emissions of GhG and building a perspective of climate neutrality by 2030, the Municipality of Bologna intends to address further important issues strongly related to the objective of the Mission:

- counteract the negative effects of climate change;
- increase the city's energy autonomy, focusing on widespread local energy production from renewable sources, thus creating a clean and resilient energy system for the prosperity and well-being of the city;
- fight new forms of poverty and pursue a just energy and ecological transition.

The Action Plan and the Investment Plan will contribute to create important economic and environmental **co-benefits**, as well as benefits on citizens health, well-being and quality of life:

- **in relation to citizens' quality of life, well-being and health:** the expected co-benefits are the improvement of the urban environment healthiness (starting from air quality), greater safety and liveability of spaces, including more equity in public space access, and an increase in social inclusion.

We would like to underline the link between climate mitigation policies and air quality. Indeed this represents for Bologna a significant environmental challenge considering its location in the Po Valley, one of the most polluted areas in Europe in terms of air quality.

The trend over time in the concentrations of the main atmospheric pollutants in Bologna highlights a progressive improvement in pollution levels, although residual critical issues persist essentially due to the orographic and climatic characteristics of the Po Valley. In fact, especially in the autumn-winter period, conditions of thermal inversion, poor ventilation and limited rainfall arise, favouring the accumulation of pollutants.



Decarbonisation and the progressive electrification of consumption, in addition to reducing greenhouse gas emissions, contribute to improving the quality of the air we breathe. Climate change and air pollution caused by fossil fuels require us to review the ways in which we power our vehicles, domestic appliances, air conditioning systems, production processes, with benefits for everyone: citizens, businesses, economic activities and institutions.

The climate challenge of the Mission involves the replacement of fossil fuels with energy produced from renewable sources and the consequent reduction of emissions produced by combustion processes, primarily responsible for the production of primary pollutants, but also of precursors responsible for the formation of secondary pollutants. The combined implementation of policies, actions and investments envisaged by the Mission will influence the way energy is produced and used, as well as leading to a reduction in demand as an effect of energy efficiency. These structural transformations will also bring significant benefits to air quality and therefore in the coming years a decisive turning point towards the resolution of the residual problems at a local level linked to air pollution is to be hoped for.

- **in the socio-economic field:** greater local energy autonomy through widespread systems from renewable sources can be an important factor in fighting energy poverty, stimulating new employment opportunities and a local market for clean energy and energy efficiency and consequently greater attractiveness and competitiveness of the territory;
- last but not least, we recall the positive impact that the actions of the Plan will also have in terms of **resilience and climate adaptation** of the city, through the increase in urban green spaces, with a consequent **increase in biodiversity and ecosystem services, drainage and cooling urban;**
- also regarding the **participation and involvement of citizens and stakeholders**, the actions contained in the CCC contribute to strengthening the active and conscious participation of the community in the formation of city policies, to increasing access to information, awareness and consensus towards the energy transition and climate neutrality, to improve dialogue and collaboration between institutions, citizens and stakeholders.

### 3 Strategic priorities

#### Strategic priorities

**The fundamental strategic directions for achieving climate neutrality in Bologna are the following.**

1. Increase local energy production from renewable sources (0km renewable energy): starting from a rapid diffusion of technologies already available today, which is economically sustainable and inclusive for a city population that must be an active protagonist. In particular, **electricity produced from renewable sources** will be fundamental for decarbonisation in all sectors - buildings, transport and production activities - and will also be fundamental for producing "green" renewable fuels, such as **hydrogen** and **synthetic methane**. The increase in local energy production from renewable sources is also pursued:

- **working on regulatory innovation**, essential to direct consumption and investments towards renewable sources and more efficient technologies. Innovation that must concern national laws but also the planning and regulatory tools of all institutional levels: municipal, regional and national (starting from the Integrated National Energy and Climate Plan - INECP);
- welcoming the opportunities of **technological innovation in photovoltaic, agrivoltaic, hydrogen, hydroelectric, geothermal, etc.;**
- promoting market innovations, communicating in particular with **energy market players;**



- through the **redevelopment of the building stock** (public and private) and the creation of **Positive Energy Districts (PED)**, taking full advantage of the opportunities offered by particular financing and extraordinary tax deductions to redevelop the building envelopes from an energy point of view, while at the same time spreading the integrated installation of energy production systems from renewable sources in buildings and encouraging their widest sharing;
- **promoting the adaptation of electricity networks through dialogue with infrastructure managers**; because infrastructure and enabling technologies are essential for the transformation of the energy system.

2. Accelerate the reduction of energy needs: consuming less and more efficiently, especially in buildings, also promoting the spread of virtuous behaviours. This action is part of the broader one which for Bologna orients all the sectors of Efficiency, understood as the reduction of inputs (materials, energy, water, etc.) and outputs (waste, wastewater, emissions) and Circularity, promoting closed, generative and regenerative systems of resources.

3. Electrify consumption, in transport and buildings: orienting consumption towards **electricity produced from renewable sources**. Electrification is a fundamental tool applicable to all sectors and fields of the economy to reduce emissions, considering that it is electricity that has - and will have for the next few years - the greatest possibilities and opportunities for decarbonisation.

4. Widely recover natural performance, even on buildings, starting from the greening and cooling of the urban environment, increasing drainage and albedo: local norms and rules are needed that are capable of responding to the multiple demands for regulation and mitigation expressed by the city, starting from the choice of materials to be used, from sustainable urban drainage techniques (Sustainable Drainage Systems - SuDS), nature-based solutions (NBS - Nature-based solutions) and the increase in urban phytomass.

5. Create positive relationships, strong and quality partnerships: partnerships between different institutional levels, businesses, trade associations, the third sector, professional associations, investors, education, research and professional training is essential for the path towards climate neutrality; for this reason it is necessary to abandon compartmentalised or overly sectoral approaches in favour of coordinated and systemic actions.

6. Strengthen the involvement, training and information of citizens on climate and energy issues: because the transition towards neutrality cannot be achieved without the support and constant participation of citizens. This transition is capable of bringing widespread benefits, but involves numerous changes in people's lifestyles, habits and behaviours, such as travel methods, individual purchasing choices (e.g. electric vehicles, efficient appliances, green energy contracts certified at origin, etc.), heating and cooking methods, etc.

The Action Plan describes in detail the paths and actions envisaged and the enabling interventions necessary to achieve these priorities. The 2030 Climate Neutrality Investment Plan further details funding for pathways and actions. The individual commitments between the city and the signatories attached to this document aim to address key priorities and contribute to achieving them.

**In particular, in the next 2-3 years, the priority objectives** are to increase local energy production from renewable sources (0km renewable energy) and strengthen the involvement, training and information of citizens on climate and energy issues. The monitoring of these objectives will be carried out through the indicators present in the Action Plan, including the power in MW of photovoltaic installed in the city and the net GHG emissions per capita. The targets for the indicators are specified in the Action Plan.



Furthermore, the City Council has evaluated the Citizens Assembly's proposals, recognizing a general consistency with the strategic objectives of the Administration, while identifying some innovative and concretely implementable actions.

The Council has appreciated and shared the Assembly's request to act in a transectoral and integrated way on the needs of awareness, training, information and support for citizens and to other key actors towards climate neutrality, also through new channels, tools and roles that enhance what is already in place and recognize the need to define an overall and coordinated action strategy on these issues and also the reference to the principles of climate justice and social equity to avoid that the transition costs and the consequences of climate change exacerbate conditions of fragility.

The City Council has also identified three areas of intervention as priorities, transversal to different recommendations, since they are useful for achieving tangible results already within the present administrative mandate, as they are already part of the administration's flagship projects, but they can draw support from the directions of the Assembly:

1) In the field of energy and renewable sources: promote the development of financial instruments, such as ESCo o ways of accessing credit to encourage the ecological transition of citizens, in

collaboration and proactive discussion with potential public or private financiers, public shared companies, enterprises, for example through tenders or public notices from the Administration which must continue in the path of innovation and market orientation, also through the creation of support mechanisms for the energy requalification of private properties as well;

2) Some proposals relating to school mobility are considered of particular importance because they involve travel for the entire families and meet the objectives of education, sustainable mobility and improved safety for all road users, in line with what is provided by the "Città 30" (30km/h city). In particular, high priority, also in the procurement of the necessary resources, will have to be given to some specific tools suggested by the Assembly: mobility management spread across every neighbourhood, enhance and promote the figure of mobility managers in schools also through a network coordination role, progressive increase in walking bus and cycling bus, increase in school squares and school streets to be designed and financed, reactivation of initiatives that incentivize the transformation of public space involving schools and companies, and engaging the productive sector in a proactive way;

3) the proposals relating to the green infrastructure of the city are considered of particular importance as consistent with the administration's flagship project "Impronta Verde" (Green Footprint). In particular, high priority, also in finding the necessary resources, will have to be given to some tools suggested by the Assembly: creation of climate shelters, increase in the permeability of soils, protection and safeguarding of existing green areas with particular reference to performance levels, restrictions and compensations contained in plans and regulations, installation of widespread drinking fountains in public parks and along the most travelled, urban forestation actions and redevelopment of school green areas for the creation of new vegetable gardens to carry out environmental education activities, installation of micro-green areas also in the historic centre.

The City Council, with its resolution, therefore gave a mandate to the Deputy Mayors council to include such priority recommendations in the Municipality programming cycles and also as guidelines for companies shared by the Municipality, subject to verification of technical and economic feasibility, which will be followed by a timely monitoring of progress with periodic feedback to the Council itself.



In order to achieve accelerated change, the involvement of all public and private stakeholders in the area is fundamental: for this reason, the Municipality of Bologna has implemented an intense process of involvement, both within the institution for systematic and transversal involvement of all Departments and Sectors, both externally for the widest participation of citizens and various local subjects in the construction of the Climate City Contract (ref. Module C-1 of the Action Plan). At the same time, the Municipality is active in various working and discussion groups for multilevel governance, in order to stimulate the necessary support from the institutions of higher levels of government, such as regional, national and European, and encourage the development of a governance, regulatory and financial framework, fundamental for achieving neutrality at a local level (ref Module C-1 Action Plan). In particular:

- The Municipality has activated several discussions with the **national government, which currently focus on the drafting and updating of specific plans**, such as the National Plan for Adaptation to Climate Change (PNACC) and, through the network of the 9 Italian Mission cities, the Integrated National Energy and Climate Plan (INECP), also proposing a review of the different forms of public economic support regarding sustainable energy.
- **The Municipality of Bologna is actively engaged in dialogue and discussion with the Emilia Romagna Region.** These discussions, also in coordination with the Municipality of Parma participating to the Mission, led to Regional Council Resolution 102 of 01/22/2024 " *Approval of activities and initiatives to support the implementation of the 'Neutral Cities by 2030' project of Parma and Bologna as well as measures aimed at disseminating and promoting the ecological transition and carbon neutrality throughout the regional territory*". With this resolution, the Regional Administration defines the need to start an institutional collaboration with the Cities of Bologna and Parma concerning the Mission, aimed at developing initiatives in the financial, regulatory and planning fields to support the Mission and commits to implement specific activities, particularly relevant for overcoming existing barriers to achieving climate neutrality.

Finally, the Municipality of Bologna is the coordinator of "**Let'sGOv - GOverning the Transition through Pilot Actions**", financed as a pilot project by Net Zero Cities, and in which all the Italian cities of the Mission participate, which also has among its objectives the strengthening of multilevel governance necessary to support the transition process, in particular by acting on three common challenges for the Italian cities of the network: access to energy data, stakeholder and citizen involvement at all levels and exploration of innovative financing tools.

Finally, the Municipality of Bologna considers the active participation of citizens to be crucial, both in the construction of local climate policies and for the fundamental role it can play in the local energy and climate transition. For this reason, in December 2022, the City Council called the first Citizen Assembly on the topic of climate change, with the mandate to develop " *proposals and recommendations to make Bologna a solar, renewable and sustainable city, accelerating the right energy transition, towards a model based on the reduction of energy consumption, energy efficiency, the production and use of renewable energy, individual and collective self-consumption, energy communities*". The Citizens' Climate Assembly took place from May to November 2023, with a total of 9 meetings, and very positive results in terms of participation (on average around 80% of members throughout the entire process) and interest. The outcomes of the Climate Assembly are an integral part of the Action Plan (ref. Module C-1 and Annex 1 of the Action Plan).

The Municipality has also activated important tools to support citizens for the energy and climate transition, such as the Energy Help Desk and the Energy and Environment Showroom.

All the processes and tools put in place for the involvement and participation of stakeholders and citizens are described in depth in the Action Plan (in particular Modules C1 and C2 and related Annexes).



## 4 Process and underlying principles

### Process and principles

To face the challenges of the Mission, the Municipality of Bologna considered it essential to build a strong and solid mandate, both within the Administration at a political and technical level, and externally, dedicating particular attention to the activation of an ecosystem of actors and citizens and to strengthen relationships with institutions at different levels of government.

Following the approval of the candidacy for the Mission of the Municipality of Bologna, a specific mandate for the development of the Climate City Contract (CCC) was given to the Deputy Mayor with responsibility for the Climate Mission and the Transition team was established, which manages the Mission and the process of the CCC. The team is coordinated by the Deputy Mayor herself and made up of representatives of different Departments and Sectors of the Municipality, supported by two external subjects, the Fondazione Innovazione Urbana-Rusconi-Villa Ghigi and AESS (Agency for Energy and Sustainable Development). **The Transition team worked in parallel on three synergistic and complementary processes, which together allow to achieve the systemic approach necessary in order to activate an ecosystem that is as inclusive as possible to support the Mission:**

1. the **internal process**: to involve the City Council and all the Departments and Sectors of the Municipality on the Mission, overcoming the "silos" logic, through ad hoc interviews, questionnaires and focus groups about the Mission, which involved approximately 50 employees from all Sectors and also the Deputy Mayors. A continuous dialogue with the Sectors for the co-creation of the portfolio of actions was also set (ref. Action Plan Module C-1 Construction of an internal transversal governance);
2. the **external process**:
  - at a local level, to involve the entire city in the construction and continuous updating of the CCC, through events, numerous meetings and a calls to action; an example was the **Envisioning event**, which involved over 70 representatives from research, institutions, the third sector and the local economy of Bologna to identify the impacts and co-benefits that climate neutrality can generate on the city in terms of health , citizens' well-being, fight against social exclusion, work and more generally on the attractiveness of the city (ref. Action Plan Module C-1 External governance at local level).
  - at a supra-local level, to strengthen dialogue with institutions and relevant subjects at different levels, which is fundamental for overcoming existing barriers independent of the local context. On multilevel governance, the Transition Team works in particular through the coordination of the network of the 9 Italian cities of the Mission and 1:1 working groups activated with individual subjects, such as the Emilia-Romagna Region, or the energy distributors operating in the local area, with which in-depth discussions were opened for the transition towards electrification (ref. Action Plan Module C-1 Multilevel governance).

Internal and external governance for climate neutrality can be further strengthened by the Let'sGOv (GOverning the Transition through pilot actions) pilot project, financed by Net Zero Cities and active between 1 June 2023 and 31 May 2025 which involves the entire network of the 9 Italian Mission cities (ref. Form C-1 The Let'sGOv pilot project).



3. citizenship - for broad participation and listening to the population in the development of local climate and energy policies, the Municipality of Bologna has activated:

- *the Citizens Assembly for Climate*: an innovative instrument of participatory democracy, introduced in the Municipal Statute in 2021 and made up of a random sample of 100 citizens and city users, with the aim of formulating proposals on topics of public interest and municipal competence. The outcomes of the first Citizen Assembly of Bologna, held in 2023 on climate, are an integral part of the Action Plan (ref. Action Plan Form C-1). The citizens' proposals, positively evaluated by the City Council and accepted, become a tool for reorienting (or strengthening) the actions of the Municipality and are introduced, once the relative technical-economic feasibility has been defined, in the programming tools of the Institution, i.e. the Single programming document (DUP - Documento Unico di Programmazione) or the Activity Plan depending on the strategic or executive scale of the proposed actions. In the first "iteration" of the CCC we will be able to account for the activities introduced in the programming tools and also their implementation status.
- *The Energy Help Desk*: established in March 2023 as an action of Bologna Missione Clima, structured with a specifically dedicated web page, telephone line and e-mail, it is the tool aimed at all citizens for advice and information on sustainable energy and energy efficiency (ref. Action Plan Module C-2);
- *the Environment and Energy Showroom*: information and training tool on issues related to climate, energy and the environment, the Showroom offers training courses aimed at schools of all levels in the area (ref. Action Plan Module C-2);
- *the connections with the Neighborhood Labs process*: The participatory budget is a tool of direct democracy that enables and involves citizens to identify, devise and vote on proposals for their own neighbourhood. For the 2022/2023 edition of the Participatory Budget, all the projects proposed through the Neighborhood Laboratories had to be consistent with the objectives of the Bologna Climate Mission (ref. Action Plan Module C-2).

The combination of these three processes has made it possible to co-create the Action Plan and the Investment Plan for the climate neutrality of Bologna with citizens and stakeholders, working jointly and in a systemic way to identify barriers, opportunities, possible synergies, as well as specific actions and investments which each signatory commits to, as reported in Annex 1 of this Commitment Document.

Following the approval of the CCC by the European Commission, the monitoring of the actions and indicators contained in the Plans will make it possible to analyze the impacts and results achieved, to identify any need to adapt impact pathways or modify ongoing actions. The continuous process of integrating new stakeholders and the progressive increase in efforts will allow the implementation and continuous improvement of the CCC in order to achieve the objective of neutrality, based on the strategies to reduce residual emissions, identified in the Action Plan, and their possible improvement. The processes will tend towards the expansion and consolidation of the ecosystem of actors and towards an increasingly systemic and structured innovation action, both at a local and multilevel level, to achieve the objective.

The CCC is considered as a dynamic, iterative and continuously updated tool; it is in fact probable that in the coming years there will be an acceleration of changes in the scenario which could have a significant influence on what is currently defined; for example due to changed geopolitical contexts or particularly high-performance regulatory or technological innovations, linked to energy issues or artificial intelligence developments that are difficult to predict over a multi-year time horizon. A process of continuous evolution of the CCC and the Action and Investment Plans is therefore envisaged, starting from the following activities:



- monitoring of the planning and implementation phase of the actions contained in the Plan;
- definition of any corrective actions to maintain the set objective;
- integration between the CCC and the planning documents of the Municipality of Bologna - starting from the Single Planning Document (Documento Unico di programmazione) - in reference to the contents and indicators of the Action Plan coordinated with the planning documents of the Municipality. This will be particularly effective if we consider that these tools have a three-year validity, but that every year they are updated and monitored through specific indicators - which at least in part must reflect those of the Action Plan.
- construction of a platform for sharing best practices, actions and projects implemented;
- increase of the stakeholders number and consequently of actions useful for the objective of climate neutrality by 2030;
- strengthening of the climate culture within the Municipality of Bologna, also by expanding and structuring from an organisational point of view the Transition Team specifically established for the Mission;

This continuous work of implementation and expansion of actions and investments, as well as internal reorganisation and integration of the CCC and its actions into the programming and planning tools of the Municipality of Bologna, subject to periodic updating and monitoring, represent the concrete and pragmatic approach with which the Municipality intends to engage for the entire time period that separates the city from the actual achievement of climate neutrality. As well as for the outcomes of the Citizens Assembly for Climate which are introduced, once evaluated by the Municipal Council and the technical-economic feasibility has been examined, into the Authority's programming tools and subjected to continuous monitoring, as well as through indicators within the planning cycle itself, also by the specific monitoring committee (made up of a group of the same participating citizens) which periodically liaises with the Municipal Council. Some of the proposals also include actions to raise awareness and involve citizens, as well as a strengthening of the role of the neighborhoods as a point of "multiplication" of the initiatives, therefore supporting the mission in a logic of proximity and closeness to the territories.

The principles that will guide the implementation and updating of the CCC will be:

1. **Fair energy transition:** in line with the mandate of the City Council to the Climate Assembly, the Municipality of Bologna intends to pursue and promote an energy transition of the city, starting from the sectors with the most impactful GhG emissions, guaranteeing the principle of climate equity and justice and combating the phenomena of poverty and marginalization with particular reference to social residential housing. The transition towards a city powered by renewable and sustainable energy will be oriented towards a model based on consumption reduction, energy efficiency, production, use and sharing of renewable energy.
2. **Active involvement of citizens and stakeholders:** The Municipality of Bologna considers the involvement and participation of citizens in the Climate Mission and in the city's energy and climate transition process to be of fundamental importance. Bologna has stood out for years because it encourages and supports the active participation of citizens in city policies, also thanks to participation processes. This commitment immediately accompanied also Bologna Missione Clima, with the design of processes aimed at maximum involvement of citizens and local entities for the construction of the Climate City Contract. The response in this case too was characterised by broad participation, confirming that the city has an active and participatory social fabric, also in relation to the climate issue. Given the important role that private buildings have in the city's emission inventory, the acceleration of the local climate transition cannot ignore their inhabitants, key players in achieving neutrality both through





virtuous behaviours and lifestyles and through actions and structural interventions on to building and plants systems.

3. **Integration between mitigation and adaptation policies, for a neutral and resilient city:** in parallel with the reduction of emissions, the Municipality of Bologna promotes and pursues important climate adaptation objectives, strategies and actions aimed at addressing and containing the main climate risks of the city (heat islands, extreme weather events, floods, drought, etc.). The Municipality undertakes, through its plans and regulatory instruments, to make the city greener, to increase its tree balance and public green areas, to reduce pollution and to improve healthiness and sociality in the territory, in a perspective which aims to find, also in new building, urban planning and infrastructural transformations, the opportunities and contexts to strengthen the urban eco-network and strengthen the ecosystem services of regulation, mitigation and adaptation. Although the CCC is significantly focused on reducing emissions to achieve climate neutrality, the Municipality promotes the synergy between mitigation and adaptation for a neutral and resilient city to ongoing changes. The adaptation actions are integrated into the General Urban Plan and the Building Regulations, which regulate all the building and urban transformations of the City by prescribing improvement actions in terms of measurable climate performance of the buildings and urban space.
4. **Multi-level governance:** finally, the Municipality of Bologna considers it of fundamental importance to strengthen dialogue with regional, national and European institutions, in order to create a regulatory, policy and multilevel governance framework necessary for cities to achieve neutrality by 2030. For this reason, the Municipality is strongly committed to coordinating the network of the nine Italian cities participating in the Mission, with which an important collaboration is active both at a political and technical-operational level to jointly address the barriers that hinder the transition and create synergies of dialogue with the above-level institutions. At the same time, important discussion and collaborations have been activated with the institutions and with the most relevant subjects for the country's energy transition. Through the Mission, the Municipality of Bologna hopes for the creation of a solid European network of cities supported by European institutions, capable of effectively exchanging information and strategic indications on the most effective actions, measures, processes and investments, in terms of costs, times and reduction of emissions, in order to guide both local investment choices and European and national financing priorities and therefore accelerate the just and equitable transition towards climate neutrality, resilience and the healthiness of territories.



## 5 Signatories

Name of the signatory (organisation)	Sector / Level of operation <sup>2</sup>	Legal form	Name of the responsible person	Position of the responsible person
HERA	Energy Systems National	Holding Energia Risorse Ambiente S.p.A.	Orazio Iacono	Chief Executive Officer
CAAB	Built environment Local	Centro Agroalimentare di Bologna S.p.A.	Duccio Caccioni	Market Director
Aeroporto	Transport National	Aeroporto Guglielmo Marconi di Bologna S.p.A.	Nazareno Ventola	CEO and General Director
CNA Associazione di Bologna-CNA Servizi Bologna-GSA	Built environment Local	CNA Associazione di Bologna-CNA Servizi Bologna-GSA	Claudio Pazzaglia	General Manager
Illumia	Sistemi energetici National	Illumia S.p.A. e E-Wide	Marco Bernardi Matteo Carassiti	Chairman Illumia s.p.a. CEO E-Wide
Confagricoltura Bologna	Built environment Regional	Confederazione Generale dell'Agricoltura Italiana Bologna	Guglielmo Garagnani	President
Azienda Ospedaliero Universitaria di Bologna – Policlinico Sant'Orsola Azienda USL di Bologna Istituto Ortopedico Rizzoli Azienda USL di Imola	Built environment Local	Azienda Universitaria Ospedaliera di Bologna – Policlinico Sant'Orsola Azienda Unità Sanitaria Locale di Bologna Istituto Ortopedico Rizzoli Azienda Unità Sanitaria Locale di Imola	Anselmo Campagna	General Director Istituto Ortopedico Rizzoli
Canali di Bologna	Built environment Local	Consorzio della Chiusa di Casalecchio e del Canale di Reno	Andrea Zanotti	Legal Representative
TPER	Transport Regional	Trasporto Passeggeri Emilia-Romagna S.p.A.	Giuseppina Gualtieri	President and CEO
Emil Banca Credito Cooperativo	Built environment Regional	Emil Banca Credito Cooperativo	Gian Luca Galletti	Vice President
Ducati	Built environment National	Ducati Motor Holding S.p.A.	Claudio Domenicali Giovanni Fallone	CEO Infrastructure & EHS Director
Coop Alleanza	Built environment Regional	Coop Alleanza 3.0 Soc. Coop.	Simone Presotto	Technical Director
ACER	Built environment Local	Azienda Casa Emilia-Romagna della Provincia di Bologna	Marco Bertuzzi	President

<sup>2</sup> The “level of operation” indicates if the organisation is active at local, regional, national, or international level.



CNR	Built environment National	Consiglio Nazionale delle Ricerche	Vittorio Morandi	President of the Research Area of Bologna
Alma Mater Studiorum Università di Bologna	Built environment Local	Alma Mater Studiorum Università di Bologna	Giovanni Molari	Rector
ASP Città di Bologna	Built environment Local	ASP Città di Bologna - Azienda Pubblica di Servizi alla Persona	Carlo De Los Rios	Asset Director
Confindustria Emilia Area Centro	Built environment Regional	Confindustria Emilia Area Centro	Tiziana Ferrari	Managing Director
Toyota MH	Built environment National	Toyota Material Handling Manufacturing Italia S.p.a.	Riccardi Magnanini	Purchasing and Sustainability Director
CRIF	Built environment National	CRIF S.p.A.	Loretta Chiusoli	Group Chief HR and Organization Officer
Fondazione Golinelli	Behavioral Local	Fondazione Golinelli	Antonio Danieli	Director
Regione Emilia-Romagna	Built environment Regional	Regione Emilia-Romagna	Irene Priolo	Vice-president and Regional Deputy Council member for Ecological Transition and Climate change, Environment, Soil and coast defense, Civil Protection
RFI	Transport National	Rete Ferroviaria Italiana S.p.A.	Gianpiero Strisciuglio	Chief Executive Officer and General Manager