NET ZERO CITIES

EU MISSION PLATFORM CLIMATE NEUTRAL AND SMART CITIES

# CLIMATE CITY CONTRACT

## ACTION PLAN

PIANO Clima ROMA

ROMA

with the support of

AGENZIA PER L'ENERGIA E LO SVILUPPO SOSTENIBILE AESS

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# Abbreviations and acronyms

The list of abbreviations and acronyms **identifies the abbreviations** (a shortened form of a word used in place of the full word) **and acronyms** (a word formed from the first letters of each of the words in a phrase of name) used in the CCC Action Plan.

| Acronym | Description |
|---|---|
| AESS | Energy and Sustainable Development Agency |
| AFOLU | Agriculture Forestry and Other Land Use |
| ARERA | Italian Regulatory Authority for Energy, Networks and Environment |
| ASL | Local Health Company |
| CACER | Configurations for diffuse self-consumption |
| CCC | Climate City Contract |
| CDP | Carbon Disclosure Project |
| CIRIS | City Inventory Reporting and Information System |
| CIS | Institutional Development Contracts |
| CMCC | Euro-Mediterranean Centre on Climate Change |
| ERP | Social Housing |
| ENEA | Italian National Agency for New Technologies, Energy and Sustainable Economic Development |
| EPBD | Energy Performance of Buildings Directive |
| ETP | Regional Ecological Transition Plan |
| GHG | Green House Gas |
| GRP | General Regulatory Plan |
| GSE | Gestore dei Servizi Energetici |
| INECP | Integrated National Energy and Climate Plan |
| IPPC | Integrated Pollution Prevention and Control |
| IPPU | Industry Processes and Product Use |
| ISPRA | Italian Institute for Environmental Protection and Research |
| ISTAT | Italian National Institute of Statistics |
| MIMs | Ministry of Infrastructure and Sustainable Mobility |
| PNACC NCCAP | National Climate Change Adaptation Plan |
| NEEFE | National and European Emission Factors for Electricity |

| Acronym | Description |
|---|---|
| ETS | Emission Trading Scheme |
| CERC | Capitoline Renewable Energy Communities |
| NZD | Net Zero Districts |
| NGEU | Next Generation EU |
| PNRR NRRP | National Recovery and Resilience Plan |
| NSSD | National Strategy for Sustainable Development |
| NZC | Net Zero Cities |
| NZEB | Near Zero Energy Building |
| PFTE | Technical-economic feasibility projects |
| PINQua | National Innovative Programme for Quality Living |
| PNIEC | Integrated National Energy and Climate Plan |
| PPP | Public-Private Partnership |
| PUI | Integrated Urban Plan |
| SUMP PUMS | Sustainable Urban Mobility Plan |
| REC | Renewable Energy Communities |
| RES | Renewable Energy Sources |
| RRF | Recovery and Resilience Facility |
| PAES SEAP | Sustainable Energy Action Plan |
| PAESC SECAP | Sustainable Energy and Climate Action Plan |
| SIMU | Infrastructure Development and Urban Maintenance Department |
| SMEs | Small and medium-sized enterprises |
| ToC | Theory Of Change |
| TT | Transition Team |
| ZEB | Zero Energy Building |
| ZTL | Restricted Traffic Zone |

# Note

Please note that when in the text it is cited Roma Capitale it is meant the Administration of Rome while with the term “Rome” is indicated the territory of Rome.

# Annexes

The document includes the annexes listed in the following table.

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# 1 Introduction

**Introduction**

The priority of Rome's commitment to climate is due to the crisis acceleration and the increasing devastating social and environmental consequences worldwide, as well as in the willingness to make the climate a transversal key for urban policy innovation to tackle the challenges that the city is called to face.

Participation in the *EU Mission Climate neutral and smart cities* represents a great opportunity to effectively programme choices in the direction of an ambitious city trajectory towards climate neutrality and make it a shared goal for all city actors.

The city's two key words in its ongoing climate work are vision and concreteness. Two new instruments defining the city's climate action priorities - the Climate City Contract, as far as mitigation is concerned, and the Roma Capitale Climate Adaptation Strategy - identify the actions already underway and those to be undertaken, as well as the barriers to be overcome and the opportunities that can be created. Hence, the most effective solutions to help families and businesses reduce their energy expenditure thanks to competitive and accessible alternatives for all citizens.

The aim is to transform Rome into an energy transition laboratory where, thanks to the projects spread throughout the city, the city meets the challenges of liveability, strengthening industrial innovation and local economy, reducing inequalities and improving urban regeneration, creating new cultural activities and opportunities for all.

**Rome is a city where emissions are reducing.** Analyses carried out as part of the SECAP pathway show a steady decline since the beginning of the new century, with a 35% drop compared to 2003 and an 11% drop to 2015, from 12.905 million in 2003 to 8.411 million tonnes of $CO_2$ in 2019. Per capita emissions stand at 2.9 tonnes $CO_2$eq in 2019, whereas they were 4.9 tonnes $CO_2$eq in 2003. The new methodology introduced by JRC for the Mission also asks cities to consider the additional sectors of AFOLU (Agriculture, Forestry and Other Land Use) and IPPU (Industrial Processes and Product Use) and to use a slightly different emission factor. This brings the value of $CO_2$eq emissions in 2019 to 8.598 million tonnes, and per-capita emissions to 3.0 tonnes $CO_2$eq.
A gradual reduction in emissions has taken place in all sectors in recent years, with the percentage distribution between sources remaining essentially constant over the years, and almost 94% of emissions related to building and transport consumption.

**The reduction in emissions achieved in recent years is largely explained by technological improvements.** In particular, the renewal of the vehicle fleet has led to an improved efficiency of combustion processes, while in building heating, the gradual replacement of the most polluting boilers with more technologically advanced systems and the thermal insulation and energy efficiency of the building stock have reduced emissions. On the other hand, the increased use of renewable energy sources in the energy mix has had an effect on reducing emission factors related to electricity consumption. In addition, the switching of a large part of the lighting to LED lamps has reduced emissions from public lighting.

**Roma Capitale seeks to contribute to the global climate commitment through strengthened collaboration with European and international cities to stop the climate crisis**. In 2005, the

Municipality joined the **C40 network** of the world's large cities that agree on accelerating actions to stop climate change and, in 2009, the **Covenant of Mayors.** In 2013, it approved the Sustainable Energy Action Plan (SEAP). That same year, it joined the '100 Resilient Cities' initiative and, in 2021, the Sustainable Energy and Climate Action Plan (SECAP), which was last updated in the Climate Plan approved in 2023.

**In 2023, Rome approved the update of the SECAP,** as requested by the C40 Network to contribute to the global temperature containment target of 1.5 degrees. The 'Deadline 2020' programme has developed targets for different large cities around the world, with different goals depending on economic and geographic parameters. **For Rome, the planned targets are higher** than the reduction set by the SECAP in 2021. The new Plan, approved in November 2023 by the City Assembly, envisages a committed emission reduction target of **-66% in 2030 compared to 2003,** surpassing the -51.6% forecast in the plan approved in 2021.

**The carbon neutrality target set by the '100 carbon-neutral and smart cities by 2030' Mission requires us to raise the level of ambition and create a coherent framework of urban policies** with governance and long-term monitoring of results, based on a process of discussion and sharing with the city and stakeholder involvement.

**The first choice to respond to this challenge was to create a new Climate Office, in the Mayor's Cabinet**, with the task of coordinating the city's adaptation and mitigation policies. An internal working group within the administration, coordinated by the Climate Office, was created to ensure strong involvement and streamlining of all departments and councillorships whilst strengthening the scientific support of national research institutes and universities to the process.

**The Climate City Contract is part of a path of urban policies that have had a strong acceleration towards climate neutrality in recent years**, with a cross-sectoral vision covering the different sectors of the administration and which is in line with the instruments approved: Waste Plan, Urban Plan for Sustainable Mobility, Climate Adaptation Strategy. These newly drafted instruments are one of the building blocks of the CCC and their implementation and results verification, updating of measures will be crucial for the work effectiveness and policy integration. In addition, the CCC drafting saw the involvement of the city's economic, social and institutional actors with respect to the ongoing and planned decarbonisation choices so that they could be integrated within a vision and share the work path for the coming years.

Rome's Climate City Contract has involved the city's economic and social actors with an Expression of Interest to collect their participation in the decarbonisation process and trace the framework of implemented and planned actions in the direction of climate mitigation and adaptation.

80 stakeholders participated in the Expression of Interest, submitting a total of 705 action sheets[1]. The contribution of the urban ecosystem represents one of the building blocks for achieving climate neutrality: the decarbonization process concerns multiple aspects of the city organization and the activities present, and for its acceleration it is necessary to focus on some strategic choices that will affect the economic-industrial sector and people's lifestyles and habits in a transversal way. The strategies identified by the Administration, listed below, fall within sectors with a greater impact in terms

[1] Starting from the sheets, some actions were then merged during the portfolio analysis to arrive at a final number of 493 actions of external stakeholders to which 30 actions of Roma Capitale were added.

of $CO_2$eq emissions such as buildings and transport. More details will be provided in Part B of this document.
Main strategic choices of Roma Capitale:

- Growth in production from renewable sources: this measure includes the installation of photovoltaic systems on civil buildings, parking lots and shelters; it also estimates the agrivoltaic potential in the municipal area.
- Efficiency of buildings and electrification of thermal systems: the interventions concern the efficiency of envelopes, electrification of heating systems, implementation of energy consumption management systems, installation of renewable energy source systems for residential, social housing, industrial and tertiary sector buildings.
- Integrated and zero-emission mobility: the strategy proposed in the CCC focuses on the electrification of the vehicle fleet in line with the principles defined by the PNIEC and the enhancement of smart working for all public and private employees.
- Green energy: the estimate recognises partial coverage with green energy of total electricity consumption for the tertiary sector

As they will be presented in the following chapters, the strategies must be identified as part of an ambitious path that the Administration is committed to undertaking in the coming years: the estimates relating to the interventions will be validated over the years on the basis of the actual feedback that the Municipality will be able to collect during the process. The perspective for the future of climate goals focuses on the transversal involvement of social and economic actors: through the meetings, already started with stakeholders, the discussion on strategies and individual actions envisaged will be opened thanks to roundtables, follow-up events, seminars that will make it possible to verify the feasibility of the projects and welcome new proposals. The main elements that will guide the Administration are therefore expressed as follow:

- **Innovation in climate governance**: the Administration wants to stimulate innovative forms of institutional governance by strengthening the relationship with European, national and regional institutions, with the Metropolitan City and municipal structures. Collaboration between structures and institutions and joint commitment to shared objectives are decisive factors for achieving climate neutrality targets. Work will be carried out on this point, reaffirming the central role of the Climate Office and the whole Transition Team in a co-designing and listening logic established at the beginning of the pathway to neutrality.
- **An inclusive transformation of the city** that puts degraded neighbourhoods and buildings at the centre of the work, abandoned public spaces in which the focus is on the care and well-being of the people and communities who inhabit the places, starting with the most fragile segments of the population. An inclusive approach in which no one is left behind is the most effective way to build consensus on the energy transition, to make it understand its benefits not only environmentally but also in economic and social terms.
- **The integrated approach of climate policies**: the transversal nature of the environmental issue emphasizes the need to cross-reference the mitigation policies put in place at different geographical levels (local, Regional, National, European) with the objectives of adaptation: the intertwining of the two issues is inextricable when intervening in neighbourhoods with forestation and adaptation interventions, on energy and infrastructure networks, and an integrated approach allows for more effective results.

The application of these principles in continuity with the modalities that led to the current edition of the CCC will ensure transparency and good results from the path towards neutrality to 2030 of the city.

| Table I-1.1: 2030 Climate Neutrality Target | | | |
|---|---|---|---|
| **Sectors** | **Scope 1** | **Scope 2** | **Scope 3** |
| **Stationary Energy** | Included | Included | N.A. |
| | No exclusions | No exclusions | |
| **Transport** | Included | Included | Excluded as under NZC guidelines |
| | No exclusions | No exclusions | |
| **Waste and wastewater** | Included | N.A. | Included |
| | No exclusions | N.A. | No exclusions |
| **IPPU** | Included | N.A. | N.A. |
| | No exclusions | N.A. | |
| **AFOLU** | Included | N.A. | N.A. |
| | No exclusions | N.A. | |
| **Geographical Border** | **Same as Administrative** | **Smaller than Administrative** | **Larger than Administrative** |
| Tick the correct option | X | | |
| Specify excluded areas | No excluded areas | | |
| **Map** | | | |

# 2 Part A - Current Status of Climate Action

## 2.1 Module A-1 Baseline GHG emissions inventory

Since 2009, the Municipality of Roma Capitale, strongly convinced of the need to take part in the fight against climate change, had joined the European Covenant of Mayors Campaign. The Sustainable Energy Action Plan (SEAP) was drafted in 2013, providing an estimate of reference emissions as of 2003.

In June 2021, the Municipal Council approved the Sustainable Energy and Climate Action Plan (SECAP) through Resolution no. 55 of the City Assembly and committed to reducing GHG emissions by 51.6% compared to 2003 levels. The emission inventory was regularly updated by means of subsequent monitoring, up to the latest version of 2019, drafted within the scope of the Roma Capitale **Climate Plan** (2023). With its commitment to the Climate Mission, Roma Capitale provides an updated framework of the city's decarbonisation path and defines the guidelines to achieve climate neutrality, in line with the commitments taken within the international C40 Cities (Climate Leadership Group) network that Rome has joined in 2005.

The emission baseline (ref. year 2019) was calculated using the methodology defined by Europe under the Covenant of Mayors and the CIRIS IT tool provided to the cities belonging to the C40 network. This choice was driven by a desire to follow NZC's lead without neglecting the effort made to date within the C40. The CIRIS allowed calculating the emissions for stationary energy and the waste sector.

The baseline inventory of the Climate City Contract (CCC) is a step forward in the process to quantify local emissions and it is based on the data collected upon the latest update of the SECAP emission inventory (ref. year 2019), as developed within the scope of Roma Capitale **Climate Plan** (2023). Some changes and integrations were made to the SECAP emission inventory to adapt the baseline inventory of the Climate City Contract with the calculation method provided in the documents developed by the Net Zero Cities.

The main changes between the SECAP 2019 emission balance and the Climate City Contract baseline for the same year are listed below:

- ✓ **Electricity emission factor:** a different emission factor compared to the SECAP one was used to calculate the emissions related to electricity to also consider the contribution of GHG other than $CO_2$. Therefore, while the SECAP adopted the emission factor indicated by ISPRA[2] ($CO_2$), the CCC baseline calculation was carried out using the emission factor of the IPPC GHG approach in $tCO_2eq$. This technical assessment refers to the methodology drafted in 2006 by IPCC to create shared approaches for the estimation of GHG emissions. This results in different overall emissions, even though the starting point is the same final energy consumption.

- ✓ **Additional emission sectors:** this integration is necessary as it is explicitly required under Mission 100 Carbon Neutral Cities. The additional sectors are:

    1. **Industry Processes and Product Use (IPPU)** which includes GHG emissions deriving from industry processes and product use that produce emissions not

[2] ISPRA Link

resulting from energy consumption. More specifically, emissions related to the concrete and lubricant sectors were estimated.

2. **Agriculture Forestry and Other Land Use - AFOLU**, which calculates the emissions directly released in the atmosphere and not connected to final energy uses, related to the agriculture sector (i.e., manure management; use of fertilisers, spreading of slurry of livestock origin, etc.) and land use changes. More specifically, emissions related to breeding and land fertilisation. In addition, the ability of vegetation systems in the municipality, particularly forests and shrub lands, to store and accumulate carbon was quantified. Overall, the positive contribution related to absorptions can overcome emissions associated to the agriculture sector, hence the net contribution of the AFOLU sector would be negative. To maintain a cautious approach, the CCC emission inventory only accounted for GHG absorbed by vegetation systems able to generate full reduction of the emissions related to agriculture, this, the net contribution of the AFOLU sector in the CCC baseline inventory is null.

Below are the emissions divided according to the model provided by the NZC which specifies the sector in the rows and the reference energy vector in the columns, divided into three Scopes, where 'Scope 1' refers to emissions generated by combustion processes or climate-altering gas emissions emitted within the boundaries of the system under analysis (in our case within the municipal boundaries). 'Scope 2' refers to emissions generated by energy consumption distributed through networks (e.g. electricity and district heating), where the generation process of the energy consumed takes place outside the system boundaries (e.g. thermoelectric power plant producing electricity), while for 'Scope 3' refers to emissions generated outside the municipal boundaries but linked to processes that take place in the municipality (e.g. production of waste/wastewater produced within the municipality that is destined for waste-to-energy/treatment located in another municipality).

| A-1.1: Final energy consumption by sector | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **REFERENCE YEAR** | **2019** | | | | | | | | | |
| Unit | MWh/year | | | | | | | | | |
| | **Scope 1** | | | | | | | **Scope 2** | **Scope 3** | **Total** |
| **BUILDINGS** | **12,303,554** | **-** | **248,379** | **306,737** | **-** | **-** | **10,478** | **9,340,896** | **-** | **22,210,044** |
| Fuel type/energy vector used | Natural Gas | LPG | Heating Oil | Diesel Oil | Diesel Fuel | Petrol | Biomass | Electrical Energy | | |
| **TRANSPORT** | **-** | **882,029** | **-** | **-** | **6,184,414** | **4,336,133** | **-** | **311,023** | **-** | **11,713,599** |
| Fuel type/energy vector used | Natural Gas | LPG | Heating Oil | Diesel Oil | Diesel Fuel | Petrol | Biomass | Electrical Energy | | |
| **WASTE** | - | - | - | - | - | - | - | - | - | **-** |
| Fuel type/energy vector used | | | | | | | | | | |
| **Industrial Processes and Product Use (IPPU)** | - | - | - | - | - | - | - | - | - | **-** |
| Fuel type/energy vector used | | | | | | | | | | |
| **Agriculture, Forestry and Other Land Use (AFOLU)** | - | - | - | - | - | - | - | - | - | **-** |
| Fuel type/energy vector used | | | | | | | | | | |

| A-1.2: Emission Factors applied | | | | | | |
|---|---|---|---|---|---|---|
| For the calculation of gas in tonnes or primary energy in MWh | | | | | | |
| **Methodology used: IPCC** | | | | | | |
| **Primary energy/Energy source** | Carbon dioxide ($tCO_2eq$) | Methane ($CH_4$) | Nitrous oxide ($N_2O$) | Fluorinated gases (HFCs and PFCs) | Sulphur hexafluoride ($SF_6$) | Nitrogen trifluoride ($NF_3$) |
| Electrical energy [MWh] | 0.284 | - | - | - | - | - |
| Methane [MWh] | 0.187 | - | - | - | - | - |
| Diesel Oil [MWh] | 0.249 | - | - | - | - | - |
| Diesel Fuel [MWh] | 0.248 | - | - | - | - | - |
| Petrol [MWh] | 0.252 | - | - | - | - | - |
| Automotive Petrol [MWh] | 0.257 | - | - | - | - | - |
| GPL [MWh] | 0.239 | - | - | - | - | - |
| Fuel Oil [MWh] | 0.277 | - | - | - | - | - |
| Biomasses [MWh] | 0 | - | - | - | - | - |
| Solar Thermal [MWh] | 0 | - | - | - | - | - |
| Geothermal [MWh] | 0 | - | - | - | - | - |
| Biofuels [MWh] | 0 | - | - | - | - | - |
| $CH_4$ [ton] | 28 | - | - | - | - | - |
| $N_2O$ [ton] | 265 | - | - | - | - | - |

| A-1.3: Greenhouse Emissions by sector | | | | |
|---|---|---|---|---|
| **REFERENCE YEAR** | **2019** | | | |
| Unit | $tCO_2eq/year$ | | | |
| | **Scope 1** | **Scope 2** | **Scope 3** | **Total** |
| **BUILDINGS** | 2,531,414 | 2,652,815 | - | 5,184,229 |
| **TRANSPORT** | 2,841,514 | 88,331 | - | 2,929,845 |
| **WASTE** | 81,711 | - | 356,561 | 438,272 |
| **Industrial Processes and Product Use (IPPU)** | 45,658 | - | - | 45,658 |
| **Agriculture, Forestry and Other Land Use (AFOLU)** | - | - | - | - |
| **TOTAL** | **5,500,297** | **2,741,145** | **356,561** | **8,598,003** |

| A-1.4: Activity by sector | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **REFERENCE YEAR** | **2019** | | | | | | | | |
| Unit | $tCO_2eq/year$ | | | | | | | | |
| | **Scope 1** | | | **Scope 2** | | | **Scope 3** | | |
| **BUILDINGS** | **2,162,620** | **336,277** | **32,518** | **893,516** | **1,553,597** | **205,702** | **-** | **-** | **-** |
| Activity | Housing and Third Sector (including Municipal) | Industry and Agriculture | $CH_4$ Distribution Losses | Housing | Third Sector (including Municipal) | Industry and Agriculture | | | |
| **TRANSPORT** | **2,841,498** | **16** | **-** | **88,330** | **-** | **-** | **-** | **-** | **-** |
| Activity | Road Transport | Aviation | | Rail Transport | | | | | |
| **WASTE** | **59,129** | **22,582** | **-** | **-** | **-** | **-** | **19,181** | **185,536** | **151,844** |
| Activity | Wastewater Management CH4 - N2O | Composting CH4 - N2O | | | | | Composting CH4 - N2O | Waste Incineration CH4 - N2O | Landfill CH4 |
| **Industrial Processes and Product Use (IPPU)** | **45,658** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| Activity | Industrial Processes $CO_2$ | | | | | | | | |
| **Agriculture, Forestry and Other Land Use (AFOLU)** | **59,828** | **41,179** | **- 101,007** | **-** | **-** | **-** | **-** | **-** | **-** |
| Activity | Agriculture Emissions CH4 | Agriculture Emissions N2O | Green Intake $CO_2$ | | | | | | |

## A-1.5: Graphs and Charts

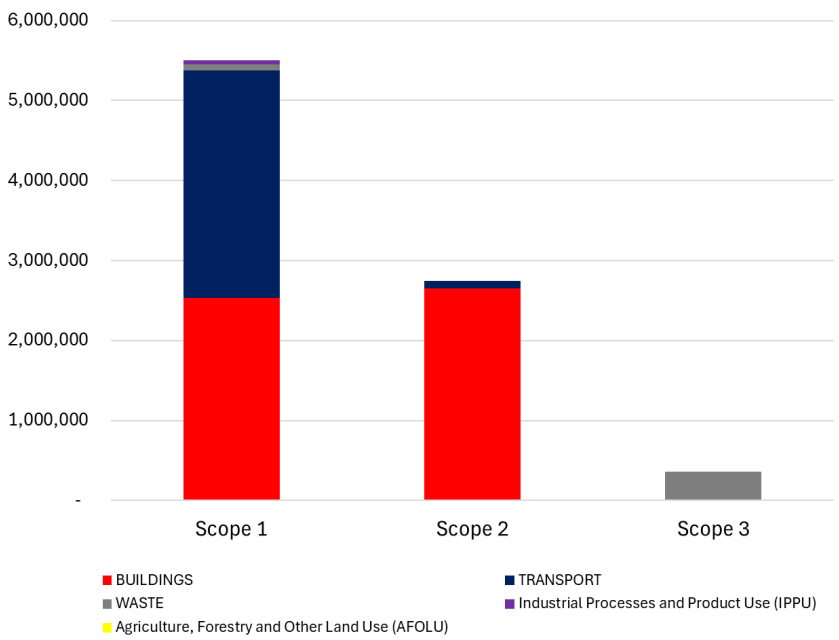


**Figure 1: Emissions 2019 divided by scopes and sectors [$tCO_2eq$]**

The graph in Figure 1 shows the relevant weigh of Scope 1 emissions compared to the other two types. It can be noticed how within this Scope the emission value of the Transport sector is higher (51%) than the Scope 1 of the Buildings sector (46%). Scope 3 emissions relate to waste management and disposal, which are mainly carried out outside the municipality.

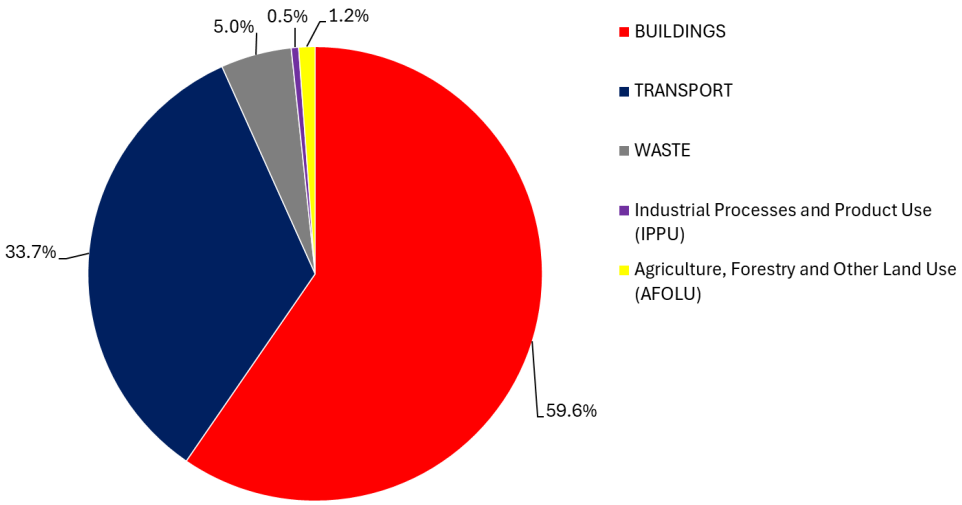


**Figure 2: Emissions 2019 divided by sectors, in percentage**

Overall, the Buildings sector shows a relevant emission value, resulting in a percentage (60%) higher than the overall value obtained by combining Transport (34%), Waste (5%) and IPPU (0.5%). The AFOLU sector, which includes agriculture and livestock farming activities, is equal to approximately 1% of emissions, fully balanced by the $CO_2$ intake or absorption by municipal vegetation systems.
To provide a clear picture of the emission contributions across the various sectors, the graph shown was made by excluding $CO_2$ absorption by vegetation.

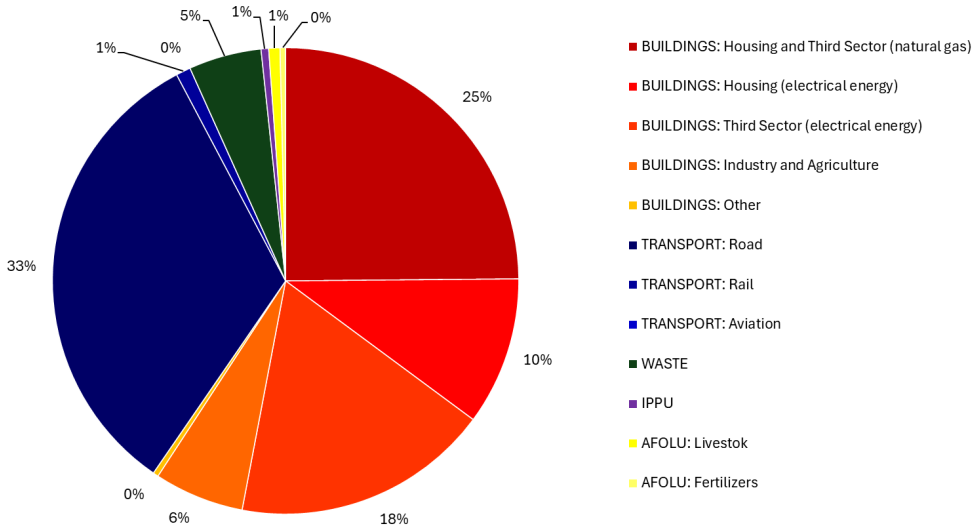


**Figure 3: Emissions 2019 divided by sub-sectors, in percentage**

The graph above provides additional details to Figure 2. The 'Buildings' sector is divided into emission sub-sectors: residential, tertiary, industry, agriculture and municipal buildings and equipment. In this case, the third sector also includes municipal buildings, and the industry sector include agriculture. Analogously, the 'Transport' sector is divided into the road, air (aviation) and rail transport sub-sectors.
A scenario emerges in which the final energy consumption ('Natural gas and Electrical Energy') of the residential and tertiary sub-sectors is responsible for more than 50% of total emissions. The single most relevant sector, however, is 'Road Transport', which accounts for about 33% of emissions.

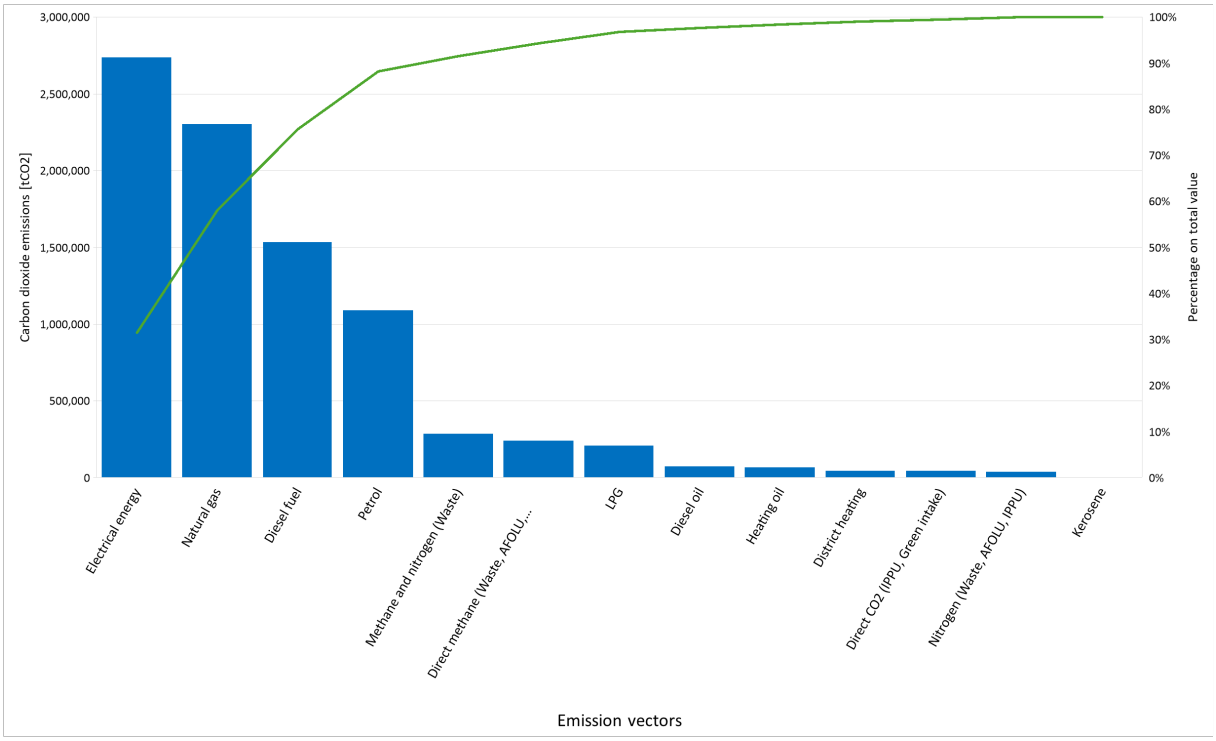


**Figure 4: Emissions by energy vectors/emitting gases**

The chart in Figure 4 shows that electrical energy is the most significant emitting vector in the context of city greenhouse gases, followed by natural gas. From the Pareto curve, shown in the graph, it is easy to deduce that the two energy vectors mentioned above give rise to about 80% of the total emission.

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

The CCC baseline of Rome as of 2019 was: quantified in **8,598,003 $tCO_2eq$**.

The general picture shows most of the emissions under Scope 1, directly generated within the Municipal area. Scope 2 includes most of the remaining emissions, and it only includes the final uses of electric energy. Finally, Scope 3 includes emissions related to waste treatment, currently carried out outside of the Rome territory. More specifically, such emissions are generated by composting, incineration and land filling. As far as the division by sector is concerned, most of the emissions (approximately 5,184,229 $tCO_2eq$) is included in the 'BUILDINGS' category, which corresponds to the Stationary Energy sector. In the 'BUILDINGS' sector, most of the emissions are ascribable to the housing and tertiary sub-sectors. In addition to that, the 'TRANSPORT' sector accounts for 2,929,845 $tCO_2eq$, equal to about 34% of total emissions. The 'WASTE' sector generates emissions for a total of about 438,272 $tCO_2eq$, of which the majority falls under Scope 3, as it is produced outside the municipal boundaries. The IPPU and AFOLU sectors remain residual. In addition, as far as the 'AFOLU' sector is concerned, the absorption of $CO_2$ by the vegetation systems present in the municipal territory exceeds the emissions attributable to the same sector; to keep a prudential approach, it was decided to treat the total emissions pertaining to this sector as equal to zero. In the table below, the percentages are calculated considering, as far as the AFOLU sector is concerned, only the emission contributions. The last row shows the contribution, in tonnes of $CO_2$ absorbed, of the vegetation systems in the municipal area, which is necessary to fully abate the emission contribution of the AFOLU sector.

| BASELINE - 2019 EMISSIONS | $tCO_2eq$ | Weigh % |
|---|---|---|
| **BUILDINGS: housing and third sector (natural gas)** | 2,162,620 | 25% |
| **BUILDINGS: housing (electrical energy)** | 893,516 | 10% |
| **BUILDINGS: third sector (electrical energy)** | 1,553,597 | 18% |
| **BUILDINGS: Industry and Agriculture** | 541,978 | 6% |
| **BUILDINGS: Other** | 32,518 | 0% |
| **TOTAL BUILDINGS** | **5,184,229** | **60%** |
| **TRANSPORT: road** | 2,841,498 | 33% |
| **TRANSPORT: rail** | 88,330 | 1% |
| **TRANSPORT: aviation** | 16 | 0% |
| **TOTAL TRANSPORT** | **2,929,844** | **34%** |
| **WASTE** | **438,272** | **5.0%** |
| **IPPU** | **45,658** | **0.5%** |
| **AFOLU: livestock** | 67,665 | 1% |
| **AFOLU: fertilizers** | 33,342 | 0% |
| **TOTAL AFOLU** | **101,007** | **1.2%** |
| **TOTAL, excluding Green Intake** | **8,699,010** | **100%** |
| **AFOLU: green intake** | -101,007 | |
| **TOTAL BASELINE INVENTORY** | **8,598,003** | |

**Table 1: Baseline emissions inventory**

As far as energy end-use is concerned, the consumption data in MWh contained in the 2019 emissions inventory template prepared within the SECAP were used; however, some modifications had to be made for the construction of the CCC baseline to fulfil the methodological indications contained in the 'Info kit for Cities' guideline.

Below are the differences between the SECAP and the CCC baseline:

1. For electricity consumption, the national emission factor as of 2021 of 0.284 $tCO_2eq/MWh$ was used (source National and European Emission Factors for Electricity Consumption NEEFE, jrc-com-neefe_1990-2021); in the SECAP, on the other hand, the emission factor used is 0.269 $tCO_2/MWh$, as indicated by ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale) in the document 'Efficiency and decarbonisation indicators in Italy and in the biggest European Countries' of 2023.
2. As indicated in the introduction, the contributions of the IPPU and AFOLU sectors that were not included in the SECAP baseline were calculated.

Details on the calculation methodology used for the two sectors added to the CCC and the differences with the SECAP calculation, namely IPPU and AFOLU; are provided below.

**IPPU**

As far as the IPPU sector is concerned, the estimate was made starting from the 2019 GHG emissions of the Metropolitan City of Rome published by ISPRA. ISPRA quantifies emissions across the following industries:

- Cement (decarbonation)
- Rolling mills
- Lubricants
- Use of lime and dolomite

As far as the territory of the Metropolitan City of Rome is concerned, the total amounts to about 593,000 $tCO_2eq$.

For the estimation of IPPU emissions in the Rome municipal territory, the electricity consumption of the various industrial sectors was used as a proxy. These data were obtained from Terna (for the Metropolitan City of Rome) and ACEA (for Rome). Based on this methodology, the total emissions of the IPPU sector for Rome amount to about 45,700 $tCO_2eq$, mainly concentrated in the cement and lubricants sectors. The table below summarises emissions by sector and specific proxy.

| Sector | Proxy | Municipality of Rome | | | |
|---|---|---|---|---|---|
| | | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2eq$ |
| Steel (electric oven) | Metallurgy and metal products | 0 | 0 | 0 | 0 |
| Cement (decarbonation) | Ceramics, glassware, cement, lime and gypsum and other non-metallic minerals | 27,994 | 0 | 0 | 27,994 |
| Ferroalloys | Metallurgy and metal products | 0 | 0 | 0 | 0 |
| Rolling mills | Metallurgy and metal products | 0 | 0 | 0 | 12 |
| Lubricants | Coke and refined oil products | 16,922 | 0 | 0 | 16,922 |
| Oil Industry Processes | Coke and refined oil products | 0 | 0 | 0 | 0 |
| Use of lime and dolomite | Ceramics, glassware, cement, lime and gypsum and other non-metallic minerals | 730 | 0 | 0 | 730 |
| Glass (decarbonation) | Ceramics, glassware, cement, lime and gypsum and other non-metallic minerals | 0 | 0 | 0 | 0 |
| **Total** | - | **45,646** | **0** | **0** | **45,658** |

Table 2: IPPU: Emissions values divided by sectors

**AFOLU**

The emission inventory of Rome also includes the emitting contribution of the Agriculture, Forestry and Other Land Use Sector. More specifically, inputs related to livestock farming, agricultural activities and carbon stock changes were assessed.

**EMISSIONS**

As for livestock activities, the emissions connected to enteric fermentation (methane) and manure management (methane and nitrous oxide) were considered.

The data related to the number of livestock units existing in the municipality of Rome were taken from the National Livestock Register, which provided the exact number of cattle, sheep, goats, buffaloes, horses, mules and donkeys and poultry in the municipality. The estimate of emissions was made using the methodology defined in the IPCC 'Guidelines for national greenhouse gas inventories' of 2006, adding, where applicable, the national emission factors as of 2019 calculated by ISPRA in the National Inventory Report 2021.

As far as agricultural activities are concerned, the emissions connected to the use of nitrogen fertilising compounds for soil cultivation were considered. Such emissions are directly connected to anthropogenic nitrogen inputs, but also to the contribution associated with the volatilisation of nitrogen compounds in the form of $NH_4$ or $NO_X$, which, once redeposited on the ground, can be a further source of $N_2O$. Also in this case, the methodology used was taken from the IPCC Guidelines above. The estimation of nitrogen additives to soils, however, was carried out by repartitioning regional ISTAT data (cultivated agricultural areas and quantities of nutrients contained in fertilisers per hectare of fertilisable area) at the municipal level.

**ABSORPTION**

The municipal territory of Rome, the largest in Italy, has a variety of landscapes characterised, both in the hills and valleys around the city, and in the coastal strip, by extensive woods and permanent grasslands.

To estimate the annual carbon stock variation, the first step was to obtain the data on the extension of the vegetation systems in the municipality of Rome, reported in the document "Rome's vegetation report": this document identifies and quantifies the areas of woodland, dividing between broad-leaved and coniferous trees, and those of shrub land, for a total of 24,803 ha. As regards the surface area in hectares of permanent grassland, the area occupied was instead taken from the report 'L'uso e il consumo di suolo di Roma Capitale - Land Use and Consumption of Roma Capitale (Rapport 2021)'.

The Vegetation Report identifies, within the forest and shrubland macro-systems, the areas with a prevalence of one or more plant species, such as: woods with a prevalence of holm oak, cork oak, turkey oak, maple, etc. Average carbon storage values per hectare (i.e. an average carbon dioxide absorption per hectare in $tCO_2$) were applied to these surface extensions, subdivided by type of prevalent plant species, based on estimates from an analysis conducted by the University of Parma. The results obtained correspond to an estimate of the total annual absorption of climate-altering gases by the forests and shrub lands of Rome. However, a prudential scenario was chosen, obtained by reducing the above results by 50%, considering environmental and human variables that may affect the development of plant biomass. As for the change in the carbon stock of permanent grassland, the estimated annual $CO_2$ uptake value extracted from the same analysis conducted by the University of Parma was applied directly.

The total annual absorption of $CO_2$ by the extra-urban vegetation systems of Rome territory amounted to over **273,000 $tCO_2$.**

| Extra-urban forests | Surface (hectares) | Intake $tonCO_2/y$ |
|---|---|---|
| Woods (Broad-leaved and conifers) | 15,953 | 247,393 |
| Shrubs | 2,195 | 13,884 |
| Permanent herbaceous | 6,656 | 11,980 |
| **Total** | **24,803** | **273,257** |

**Table 3: Surface and $CO_2$ absorption of extra-urban forestry**

As for public trees, mainly found in parks, streets and schools, the number of trees, split based on size into large, medium and small, was obtained from the document 'Strategic Guidelines on Urban Green in Rome'. As absorption coefficients per tree (in $tCO_2$), the values reported in the document 'Guidelines for the Region of Tuscany' were used, which reports average absorption data for each plant species. Using these values, average absorption coefficients were calculated for each macro set (large, medium, small trees), considering the main plant species in the city. The annual absorption of $CO_2$ by the public tree stock of Rome was found to be around **15,000 $tCO_2$**.

| Public trees (parks, roads and schools) | Number of trees | Intake $tonCO_2/y$ |
|---|---|---|
| Large trees | 181,884 | 12,381 |
| Medium trees | 83,604 | 2,345 |
| Small trees | 66,995 | 221 |
| **Total** | **332,483** | **14,946** |

**Table 4: Number and $tCO_2$ absorption value of trees**

The above results show how the emission contribution linked to livestock farming and nitrogen applied to soils in agriculture is lower than the absorption of the vegetation systems present in the municipal territory, and therefore the AFOLU would be a sector that reduces the stock of climate-altering gases emitted.

As mentioned above, to maintain a prudential approach, the amount of GHG absorbed was assumed to be precisely the value required to fully offset the emissions pertaining to the sector (101,007 $tCO_2$).

## 2.2 Module A-2 Analysis of existing policies and strategies

Before delving into the description of the strategic plans and policies for environmental sustainability and climate, a premise is a must: the Climate City Contract of Rome is part of a process that has seen a strong acceleration towards climate neutrality following the publication of the following strategic plans: **the Climate Plan, the Waste Plan, the Urban Plan for Sustainable Mobility, and the Climate Adaptation Strategy.** As these plans have been recently drafted/updated and approved (e.g. the City Council's approval of the Climate Plan in September 2023), and are often carried out alongside the work on the Climate City Contract, it is important to consider the named plans as key elements of a strategic vision into which the CCC fits for specific insights in terms of additional strategies, enlargement of the urban ecosystem (with further involvement and enlargement of the stakeholder base), specific analyses of costs and investments needed for the climate.

**Said Plans and related policies and actions must therefore be considered as an integral part of the CCC Action Plan, after obviously excluding the risk of double counting of actions.** In module B, special attention will be paid to the overall contribution of the existing plans in terms of reducing climate-changing emissions.

In detail, while the Climate Plan reaches an emission reduction percentage of -66%, the CCC achieves neutrality by 2030. Moreover, the Climate Plan explicitly mandates the in-depth economic and financial analysis of neutrality actions to the CCC. The Urban Plan for Sustainable Mobility focuses on tangible actions directly related to reducing emissions from the transport sector, concentrating mainly on large infrastructure interventions in the public sector. The CCC, again preventing double accounts of actions, broadens the range of mobility actors and makes public actors, such as Roma Capitale and its co-partnership, focus on behavioural and strategic actions for sustainable mobility. Similarly, there is synergy between the Waste Plan and the CCC. In conclusion, the Climate Adaptation Strategy complements the CCC on climate change adaptation, a topic usually not included in the CCCs of the Mission Cities.

The following is an overview of the chronological pathway that the city has pursued up to the drafting of this document, highlighting the main plans and giving an overall picture in which the City's interventions, strategies and corresponding co-participation on individual initiatives are evident. Table A-2.1 summarises the main contents selected at national, regional and local level.

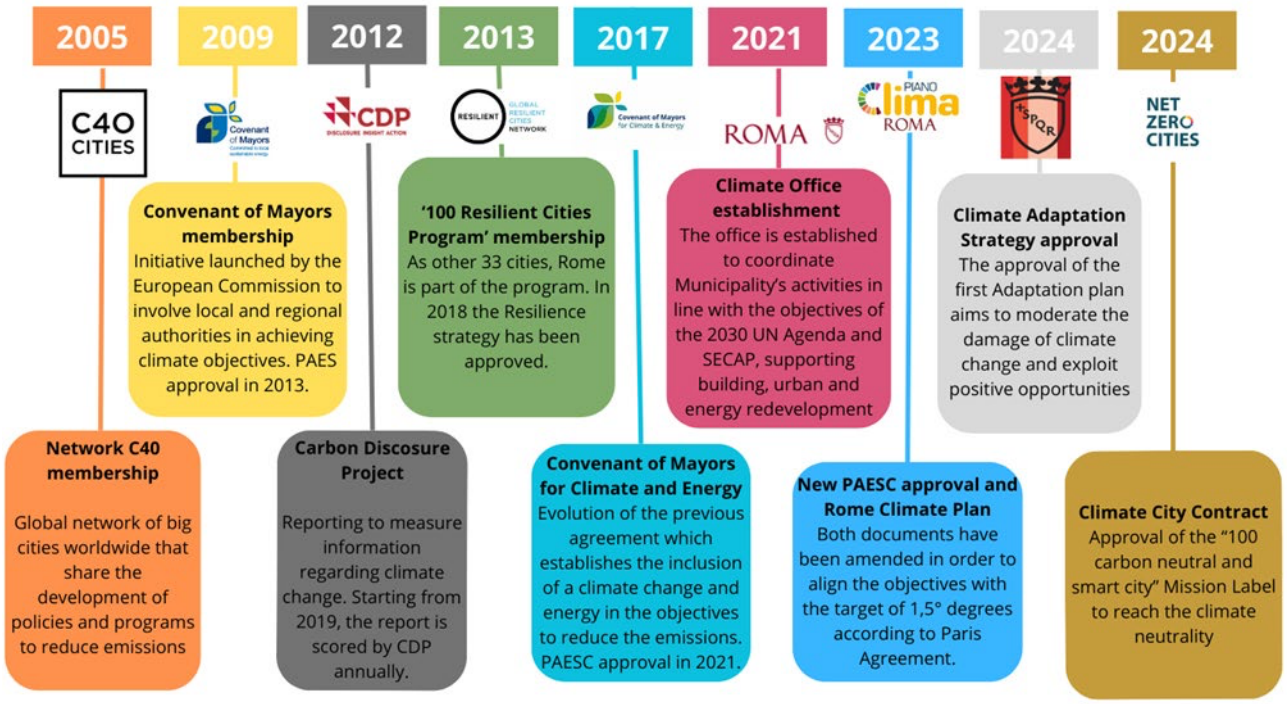


Figure 5: Timeline and pathway of Roma Capitale toward climate neutrality

**The Sustainable Energy Action Plan (SEAP) and the transition to the SECAP**

Roma Capitale's commitment started with joining the **Covenant of Mayors** by resolution no. 51 of 18/06/2009 by the Municipal Council, followed by resolution no. 10 of 7/3/2013, which led the City Assembly to approve the **Sustainable Energy Action Plan (SEAP).** This Plan included a series of actions to achieve the goals of the Covenant of Mayors, to which the city was committed up to 2020.

In 2017, the City Assembly approved resolution no. 78 of 14/11/2017 to join the **new Covenant of Mayors for Climate and Energy**, a new challenge launched by the European Commission on 15 October 2015, which introduced the European objectives for 2030 and presented an integrated approach to climate change mitigation and adaptation. Considering the above, with Resolution no. 55 of 8 June 2021, Rome's City Council approved the **Sustainable Energy and Climate Action Plan (SECAP),** its mitigation and adaptation strategies, and committed to reducing GHG emission by -51.6% compared to 2003 levels.

Resolution of the City Assembly no. 174 of 14 November 2023 approved the update to the goals of the preceding SECAP through a new document called '**Climate Plan**', drafted in concert with the members of the C40 Network, of which Rome is a member. This document effectively prevails over the SECAP, abandoning its original structure and devoting more space to strategies and future scenarios. In line with the C40 deadline, the goal is to contain the global temperature increase below 1.5 C° by 2030.

**The City Statute of Roma Capitale**

Approved for the first time in 2013, the **City Statute of Roma Capitale** is also in line with the objectives of the Covenant of Mayors, confirming the city's commitment to climate neutrality. Article 2 of the statute contains policy guidelines consistent with the objectives of the Climate Mission:

- promote the economic, social and cultural development of the city;

- direct urban planning choices towards the redevelopment of the urban fabric, safeguarding the landscape, the natural characteristics of the territory, and the public need for enough parks, gardens and green spaces.

The Statute is the fundamental charter of a municipality and regulates its general organisation within the principles established by law, such as the functioning of government bodies, citizen participation in political and administrative activity, the management of municipal public services, and collaboration with other bodies. Integrating climate objectives into this document is an important step that the city wanted to take to achieve climate neutrality and to involve its organs in an all-encompassing manner.

**The 2021-2026 Policy Guidelines and the Ufficio di Scopo Clima (Climate Office)**

**The 2021-2026 policy guidelines** for the government of Roma Capitale, approved by the City Assembly with Resolution no. 106 of November 2021, reaffirm the objectives to be pursued for the five-year period of the new administrative mandate, including the commitment to a policy of enhancing the city's sustainable development in its territory, in line with the goals of the United Nations 2030 Agenda and the European Energy and Climate Plan.

Also in 2021, the resolution of the City Council no. 306 of December 2021 established, within the Cabinet of the Mayor, the 'Climate Office' with specific tasks concerning the coordination of actions to fight climate change. The Office's main role in the transition to decarbonisation is that of 'Change Agent' (thus recognising it as one of the three roles indicated by NZC as relevant in the Transition Team), i.e. the local entity that leads the change. A detailed description of the Climate Office can be found in Form C.

**The Climate Plan and the C40 network membership**

Roma Capitale has been a member of the C40 network since its establishment in 2005. C40 is a global network of large cities working to develop and implement policies and programmes to reduce greenhouse gas emissions, damage and environmental risks caused by climate change, established under the Global Covenant of Mayors. As one of the network's partners, Rome committed to developing a series of actions towards climate neutrality by 2050, through the adoption of a strategic plan engaging every sector of the administration. Together with several other world and European capitals, the city of Rome is a signatory of two commitment **agreements**:

- **Green & Healthy Streets Accelerator:** a commitment to placing citizens at the centre of urban planning and transforming spaces in a greener and healthier perspective for the entire city population. Boosting infrastructures to facilitate intra-citizen movement by bike, on foot or public transport can reduce the number of vehicles in the city, and in particular high-emission polluting vehicles. The outcomes of these objectives will be the subject of a biennial report in which the city of Rome will play a leading role together with the other signatories to enable the monitoring of the activities introduced.
- **Urban Nature Accelerator:** cultivating and caring for urban nature creates opportunities for healthy and sustainable livelihoods, especially as cities increase their resilience to climate change. This includes improved physical and mental health and access to better employment and economic outcomes. To this end, the city of Rome commits to implement, within five years from the signing of the agreement, a strategy to develop green spaces in the city, draw up a baseline inventory of natural vegetation and conduct an accounting of green areas to raise awareness of the added value of urban natural spaces and, in addition, upgrade adaptation actions reflecting the ambitious environmental objectives.

Furthermore, as mentioned above, as a C40 member, in 2023, Rome approved the Climate Plan based on the C40 model and objectives.

**Participation in the Carbon Disclosure Project**

In 2023, Roma Capitale handed in its fifth annual assessment to the **CDP - Carbon Disclosure Project** to measure and manage the city's climate change information scoring a B[3]. The CDP offers a system to measure, track, manage and share climate change information globally: each year, a questionnaire is collected that contains a set of information that participants (businesses, cities and government bodies) are required to provide to feed a vast platform accessible to all members. It aims to provide information and share it among different actors to increase the transparency of undertakings and bodies with respect to their environmental impact and help public administrations develop models of adaptation to climate change by fostering the dissemination of best practices in urban areas. Using the CDP assessment methodology, the analysis led to an encouraging outcome since, according to the organisation, the administration 'understands the main local risks and impacts of climate change. Moreover, it has plans and actions in place to adapt and/or reduce these effects.' In particular, the score achieved on *adaptation actions* shows that the city 'has assessed the impacts and risks of climate change, it has implemented an adaptation plan and is taking measures to adjust to the effects of climate change'. As for *mitigation actions,* instead, the Administration 'has an inventory of emissions, has implemented a mitigation plan, has set a target and is taking measures to reduce emissions.'

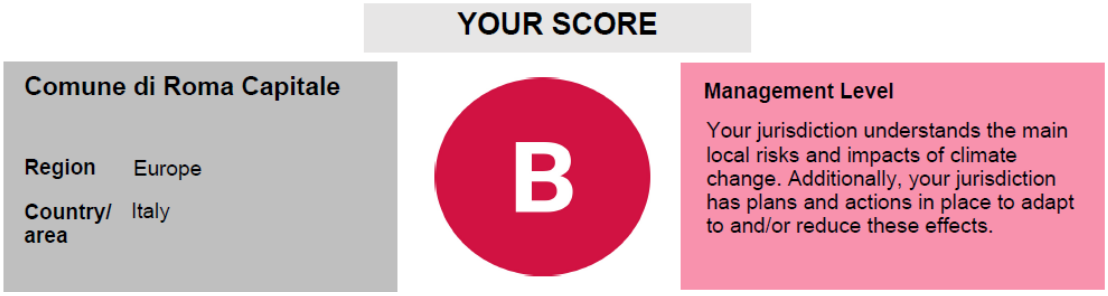


Figure 6: Score of the Carbon Disclosure Project

**Roma Capitale Climate Adaptation Strategy**

Special emphasis should also be made on the **Climate Adaptation Strategy** of Roma Capitale: Rome is the first Italian city to have adopted a real climate adaptation strategy to secure the territory from the impacts expected by 2050 with actions to be implemented already by 2030. Fighting the climate emergency passes through two main objectives: that of 'mitigation', to reduce emissions, and that of 'adaptation' to the impacts already underway.

The Strategy approval by the City Council took place on 23 January 2024, followed by the public consultation phase and moments of confrontation and training with the territory through conferences, thematic workshops and working tables with stakeholders and competent institutions (Ministry of the Environment, Regional Authorities and Metropolitan City)[4].

The decision to draw up the city's first Adaptation Strategy was prompted by the need for a clear and coherent framework of measures to be taken, which would make it possible to respond to the vulnerabilities highlighted, but also to deepen the analyses to address more complex areas. The Strategy is the most effective tool to govern a process, such as that of climate adaptation, which inevitably sees articulated responsibilities and competences. This document aims at setting up a path to share risks, objectives and intervention priorities for an effective institutional cooperation and for achieving results that depend on the effectiveness of the regulatory framework, the certainty of funding,

[3] The cities' score ranges from a D value (the lowest, usually taken at the beginning of the disclosure pathway) to an A value for leadership.
[4] The phase of meetings with citizens and stakeholders is described in module C of this document.

the clarity of competences, plans, programmes, and interventions carried out by different Authorities. Climate adaptation in Rome is a process that will undergo periodic reviews and adjustments to respond to the priorities identified in the strategy[5].

The Plan has the following objectives:

- Reducing risks to people's health and safety
- Rethinking the city's relationship with water and the sea
- Reducing heat in neighbourhoods,
- Improving liveability starting with the most fragile neighbourhoods
- An economy resilient to climate impacts

The main criticalities to deal with are:

1. **increased intensity and frequency of heavy rainfall** and flooding, with impacts on infrastructure and urban spaces, increased risk of river flooding.
2. **the availability of water supplies,** against a backdrop of longer drought periods, leading to an acceleration of measures to save, reduce losses, reuse.
3. **the rise in temperatures and heat waves**, in a city already experiencing increasing heat and with neighbourhoods suffering from a worrying urban heat island effect.
4. **the escalation of impacts on the shoreline,** from coastal erosion processes to storm surges and tornadoes, in a scenario of sea level rise.

Following the consultation, the administration published a summary document with details, images and links of the 7 public events held as conferences and workshops between February and May 2024. Throughout the consultation phase, people and stakeholders were given the opportunity to send in written comments regarding the issues and aspects to improve the work. Commitment to continue the discussion on these issues is a priority of the administration, which will be carried on in articulated and different forms also in the subsequent phases of the Strategy for the implementation of the measures, in-depth study of the issues and articulation of analyses and scenarios. Further details on the consultation will be provided in Module C.

**Selection for the 100 Climate Neutral and Smart Cities by 2030**

Finally, as part of this process, the city was short-listed by the European Commission in 2022 as one of the '**100 Climate Neutral and Smart Cities by 2030**' within the 'Horizon Europe' programme. With this strategy, the European Union wants to accelerate towards the 'European Green Deal' through cross-sectoral projects that target smart and sustainable cities capable of achieving climate neutrality by 2030.

**Memoranda of understanding and working tables**

Also, relevant as important levers for change are the memoranda of understanding drawn up by Roma Capitale for multi-level governance with various bodies and institutions in the territory. While leaving the in-depth analysis to Module C of this document, these have been included in the table below.

*Note: table below summarises the main contents selected at national, regional and local level.*

[5] Ref: https://www.comune.roma.it/web-resources/cms/documents/Sintesi-strategia-adattamento-climatico.pdf

Table 5: List of policies and related interventions

| A-2.1: Description and Assessment of policies | | |
|---|---|---|
| **Title** | **Description** | **Intervention by Roma Capitale** |
| **National** | | |
| INECP - Integrated National Energy and Climate Plan | The proposed update of the Plan, to be approved by 2024, takes into account the public consultation open to: individuals, associations, stakeholders and institutions. | At the direct request of the Ministry itself, Roma Capitale, together with the other 8 Italian cities selected within the Net Zero Cities European Mission, sent the forms to be included as strategies in the new INECP.<br>The 9 cities also worked together to send their comments during the public consultation phase that ended in March 2024. |
| National Plan to curb gas consumption | The measure, published on 17 October 2022, set out the consumption containment rules to be followed for the 2022-2023 winter heating season, in response to the energy crisis affecting the country. The Plan calls for a reduction in the building heating temperature and lowers the operating limits of thermal plants, i.e. their ignition and management. | The Municipality of Rome has implemented the measure within its buildings and encouraged the territory to follow the Plan. |
| National Recovery and Resilience Plan (NRRP) | The National Recovery and Resilience Plan (NRRP) is part of the Next Generation EU programme (NGEU), a 750-million-euro package, about half of which consists of grants, agreed by the European Union in response to the pandemic crisis. The main NGEU programme component is the Recovery and Resilience Facility (RRF), spanning six years, from 2021 to 2026, and with a total size of 672.5 billion euro (312.5 grants, the remaining 360 billion low-interest loans). | Roma Capitale has been granted NRRP funds, thanks to which new and important emission reduction measures will be developed. Additional details on the projects financed by this measure are presented in the Investment Plan. |
| Memorandum of Understanding to pursue the objectives of the European Union's Climate-Neutral & Smart Cities Mission | Memorandum of Understanding between the 9 Italian cities participating in the Mission and the Ministry of Infrastructure and Sustainable Mobility (MIMs) | The purposes of the project relate to possible solutions, also of a regulatory nature, to overcome any critical design or implementation issues that may prevent or hinder the pursuit of the Mission of the Cities in the areas under their jurisdiction; furthermore, the project undertakes to promote cooperation in developing specific projects to achieve the Mission of the Cities, to attract private funds for the implementation of investment plans of each of the 9 cities, and develop experimental measures likely to be adopted by other cities to provide a shared development model. |

| | | |
|---|---|---|
| NCCAP (National Climate Change Adaptation Plan) | The Plan is intended to contain the vulnerability of natural, social and economic systems to the impacts of climate change and increase their resilience. It represents the operational tool of the National Adaptation Strategy that defines national planning in support of institutions. | The Plan's classification sorts the provinces based on the index of potential impacts and adaptive capacity: the city of Rome is among the most fragile in both adaptive capacity and responsiveness to potential impacts. |
| Experimental programme of climate change adaptation interventions in urban areas | The Plan grants 13 Italian municipalities the opportunity to submit a project sheet containing a qualitative-quantitative framework that describes the initiatives put in place to address vulnerabilities to climate change in the urban context, such as, for example, the development of new green spaces, climate-friendly building interventions, rainwater recycling and reuse, circular economy practices in waste management, and innovative solutions for sustainable urban drainage. | Programme funding is allocated as follows: 40% to metropolitan city capitals; 60% to other municipalities with a population over 60,000 inhabitants. The city of Rome has received 6 million euro of funds distributed according to the criteria of resident population per city and surface area. In addition, all cities receive a fixed quota. |
| **Title** | **Description** | **Intervention by Roma Capitale** |
| **Regional** | | |
| Regional Ecological Transition Plan (ETP) | The National Ecological Transition Plan (ETP) responds to climate neutrality, zero pollution, climate change adaptation, and the transition to a circular economy. Subject to periodic updates, the Plan, consistent with the programmatic lines outlined by the NRRP, envisages a complete achievement of the objectives in 2050, as largely set out in the national Long-Term Strategy. The new ETP of the Lazio Region was approved in January 2023. | The process initiated with the Lazio Region ETP runs in synergy with the actions undertaken by the Municipality of Rome in the '100 Carbon-neutral and smart cities' Mission and acts as a reference point for activating the actions included in this document, the Climate City Contract. |
| Regional Energy Plan | Approved by the regional government in July 2022, the plan aims to reduce $CO_2$ emissions to zero by aiming for 100% renewable energy by 2050 as a macro scenario target | The REP is an ongoing document whose objectives will be redefined at specific times depending on the periodic monitoring of the decarbonisation process of the region and other local realities that are working in the same direction. The Municipality of Roma Capitale is an integral part of the development tables of the Plan guidelines. |
| Lazio Regional Strategy for Sustainable Development | The strategy aims to identify the main instruments to contribute to achieving the objectives of the National Strategy for Sustainable Development (NSSD) and the goals and targets | The paper was drafted in collaboration with all civil society representatives interested in sustainability issues (citizens, businesses, local authorities, schools, research and associations). The document, approved by the regional council in March 2021, constitutes a handbook in line with the objectives of the Climate City Contract to 2030. |

| | | |
|---|---|---|
| | set out in the '2030 Agenda for Sustainable Development'. | |
| Lazio Region Air Quality Restoration Plan | A plan that pursues two general objectives: the remediation of air quality in areas where regulatory limits have been exceeded or the risk of being exceeded is high; the maintenance of air quality in the remaining territory. | This plan provides support to the Municipality of Rome in the implementation of citizen-oriented policies that significantly contribute to achieving climate neutrality. Along with the measures taken by the Municipality of Rome to limit traffic in the ZTL Fascia Verde (Green Area Restricted Traffic Zone) zone, the Capitoline Administration has pooled the funds of this regional plan to encourage citizens in using public transport (free annual public transportation subscription in exchange for scrapping obsolete and polluting vehicles; incentive for switching from Euro 3/5 to full electric light commercial vehicles; re-issue of the Public Transport discount for the Mobility Manager network). The measures amount to a total of 3 million euro for 2022, 5 million for 2023 and 5 million for 2024. |
| Regional Mobility, Transport and Logistics Plan | The Plan contains objectives and strategic directions to be pursued in the areas of rail, road, cycle mobility, ports and airports, local public transport and the logistics system. | Adopted by resolution of the regional council in December 2020, the Plan is in line with the objectives of Roma Capitale's PUMS (Sustainable Urban Mobility Plan), identifying strategies for resolving congestion through the strengthening of the road network and collective public transport. The alignment of objectives is evidenced by the financing of some PUMS targets by the Regional Mobility, Transport and Logistics Plan for the strengthening metro lines and interchange nodes, as well as cycling and electric mobility infrastructures. |
| **Title** | **Description** | **Intervention by Roma Capitale** |
| **Municipal** | | |
| SECAP - Sustainable Energy and Climate Action Plan | The Sustainable Energy and Climate Action Plan (SECAP) is a document drafted by the municipalities subscribing to the new Covenant of Mayors which demonstrates how the municipal administration intends to achieve its $CO_2$ mitigation targets (in this case -55% by 2030) and increase its resilience to climate change. The addition of the adaptation part makes the new plan the evolution of the SEAP. | The Municipality of Rome adhered to the New Covenant of Mayors with Resolution of the City Assembly no. 78 of 14/11/2017, with which the previous SEAP was also revoked. Subsequently, in 2021, the SECAP was approved (Resolution of the City Assembly no. 55 8/06/2021). |
| Rome Climate Plan 2023 | Update of the SECAP to the GHG emission reduction scenario necessary to contain the global temperature increase within 1.5 °C, in line with the C40 'Deadline 2020'; it also increases the commitment to reduce emissions to - 66% compared to 2003, or - 54.1% compared to 2015. | This plan confirms and deepens the SECAP actions approved in 2021, the choices made in the current Plans in the various sectors (PUMS and Waste Plan), and the new actions that accelerate decarbonisation thanks to the NRRP resources, Jubilee funds, European, national and regional funding, and the administration's budget. Work on targets and actions will continue within the European Mission and will lead to the approval of the Climate City Contract in 2024. To accelerate and coordinate the decarbonisation process, the Municipality of Rome has created a new Climate Office in the Mayor's Cabinet. |
| PUMS - Sustainable Urban Mobility Plan | Sustainable Urban Mobility Plan, a strategic planning tool for urban mobility that aims to reduce atmospheric and climate-changing emissions, cut energy consumption and improve urban quality in general. Its long-time horizon (10 years) also | The Metropolitan City of Roma Capitale adopted the PUMS and its Plans with Decree no. 220 of the Metropolitan Mayor on 28/12/2022.<br>The Municipality of Roma Capitale approved the PUMS with Resolution of the City Assembly n.14 of 22/02/2022. The objectives and strategies identified in the PUMS are consistent with the requirements of the |

| | | |
|---|---|---|
| | includes plans for specific sectors such as PdB - Public Transport Plan for the Metropolitan Basin, Biciplan - Metropolitan Cycling Mobility Plan, PMLS - Sustainable Goods and Logistics Plan, PMPD - Mobility Plan for People with Disabilities. | Mission to achieve climate neutrality. The plan represents the primary local benchmark for emission reduction actions in the transport sector. |
| Roma Smart City Plan | Roma Smart City Plan stems from a shared path with the Roma Capitale Smart City Laboratory: the latter is a body composed of all those interested (multistakeholders) in co-designing the future of Rome. The Roma Capitale Smart City Laboratory operates with a multidisciplinary approach that brings together the Municipal Administration together with citizens, associations, businesses, universities, and research centres to support the plan's implementation and the elaboration of future projects. | The Roma Smart City plan is a dynamic planning tool and therefore requires annual updating with particular reference to the indicators and projects it contains. Updating and monitoring the plan falls within the competence of the governance bodies, which are also expected to give organicity and systematicity to all initiatives, implementing the guidelines and coordinating the management of the Plan. In addition, the aforementioned bodies (Smart City Council and Smart City Steering Committee) will be set up to start the activities to identify the members of the Technical-Scientific Committee that will work in close contact with those responsible for the Plan's development. Lastly, to disseminate the contents of the Plan more effectively, one or more online sections are foreseen that make the contents more accessible and consultable by citizens. A dedicated page could be created for the most relevant initiatives to increase the availability of information and data sharing for the benefit of the community. |
| GRP - General Regulatory Plan | The General Regulatory Plan of Roma Capitale is the most important urban planning instrument that regulates building activity within the municipal territory. | The Plan provides indications and suggestions for the planning and evaluation of interventions for the city's 20 municipalities. Given the uniqueness of the city's heritage, the GRP also contains the Charter for Quality, which provides precise evidence of Rome's urban landscape, public spaces and archaeological assets to ensure that the transformations taking place in the city are consistent with the pre-existing heritage. |
| Roma Capitale Waste Management Plan | The Plan for the Integrated Waste Management and Clean-up of Roma Capitale, approved at the end of 2022, is part of the framework outlined by the government decree that nominated the Mayor of Rome as Special Commissioner for waste and is in line with the national and European strategy for circular economy and sustainable development and the goals of the Climate Neutrality Mission. | The plan therefore intends to guarantee the Capital self-sufficiency in the management of the integrated waste cycle and a leading role in the circular economy and sustainable development. The new integrated plant system, the adoption of the most advanced emission abatement systems, and the massive reduction of landfill disposal will all contribute to the achievement of the Italian and European objectives for 2035. In particular, the goal is to increase the waste sorting rate from 45.2 % today to 65 % in 2030 and to 70 % in 2035. The scenario described in the Plan will lead to a reduction of about 90% in $CO_2$ emissions compared to the waste sorting scenario at 65% but with the plant situation unchanged. Rome's contribution to the path to climate neutrality will come from the recovery of energy from residual waste, the substantial decrease in climate-changing gas emissions, and the closure of landfills. The optimisation of transport will also be fundamental, by cutting long distances to plants located outside the region and abroad. |
| Regulation for the provision of areas and solar photovoltaic systems of Roma Capitale in favour of solidarity-based renewable energy communities. Date of | These Regulations relate to the provision of areas or installations for the production of energy from renewable sources owned by Roma Capitale or the Municipalities in favour of Solidarity-based Renewable Energy Communities (CERS), that are not used directly for institutional and instrumental activities and are not intended to be exploited. | Roma Capitale will be responsible for the drafting and approval of models and forms relating to the procedures set forth in the regulation, including: RECs Public Notice or Application for Participation; RECs Project Proposal; RECs Substitute Declarations; Outline of Agreement. |

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| approval by the City Council - July 2024 | | |
| Policy Guidelines 2021-2026 Resolution No. 106 of November 2021 | Approved in November 2021, these guidelines renew the objectives for the five-year period of the new administrative term, including the commitment to implement a policy of enhancing the sustainable development of the city within its sphere. | The commitment to implementing a sustainable development policy for the city at local level is fully in line with the objectives of the 2030 UN Agenda and the European Energy and Climate Plan. |
| Climate Office and Interdepartmental Working Group | In 2021, the Climate Office was established directly by the Cabinet of the Mayor, with resources with transversal competences in the technical and political-administrative fields. The main functions of the Office are:<br>• coordinating internal municipal activities regarding the objectives of the 2030 UN Agenda and the European Energy and Climate Plan<br>• defining an organic strategy to fight climate change through the adoption of the Mitigation and Adaptation Plan<br>• supporting the development of energy communities and energy efficiency interventions in buildings. | The involvement of the Mayor's Cabinet demonstrates the high political awareness of the entire municipal administration, which also ensures a cross-sectoral involvement of internal departments demonstrating interdependence with respect to climate objectives. An interdepartmental working group was also identified by the Office. |
| Measure<br>Resolution of the Municipal Council no. 371 of 10 November 2022 | Permanent, scheduled measures (new Operational Intervention Plan) for the **prevention and containment of air pollution:** redefinition of the perimeter of the ZTL Fascia Verde (Green Area Restricted Traffic Zone) and regulations. These measures curb the circulation of the most polluting cars in the historic centre areas and encourage users to equip themselves with more efficient and less polluting means of transport, and to transition to public transport and soft mobility. This action contributes to the achievement of climate neutrality, the goal of the Mission. | The City Council approved a resolution on the ZTL Fascia Verde (Green Area Restricted Traffic Zone), with new permanent, planned and emergency restriction measures for the prevention and containment of air pollution. The measure has been extended also in 2024. In addition to the above, there are the so-called emergency measures to be applied in the event of measured and/or planned pollution criticalities, articulated according to the methods and terms defined by the Operational Intervention Plan, within the municipal territory. |
| Regulation of the Food Council | Regulations governing the functioning of the Food Council called upon to consult and express | According to Article 2 of the Regulation, the Food Council allows stakeholders and right holders to:<br>• participate in the elaboration of the Food Policy and the Food Plan; |

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| | proposals on issues dear to the citizens' Food Policy | • monitor their concrete implementation on an annual basis;<br>• propose innovative policies, projects and ideas;<br>• express opinions on the Administration's proposals and initiatives;<br>• promote the participation of the local community in the effective implementation of the Food Plan.<br>The Food Council will play an advisory, proposing and supporting role. Full details will be provided in Module C. |
| Guidelines for the dissemination of solar installations, the promotion of energy communities and self-consumption groups, the simplification of installation procedures, support for families, associations and businesses | The city council approved the guidelines with resolution 402 in December 2022. Their purpose is to realise the European objectives of increasing energy produced from renewable resources to 1,240 GW by 2030. In this target, the role of collective self-consumption and energy communities can play an important role at municipal level. | The guidelines are part of the strategy that will engage Rome in the definition of a climate neutrality plan to 2030. The city's collaboration with the Energy Services Manager (Gestore dei Servizi Energetici), through the signing of a memorandum of understanding, represents a significant step forward for the realisation of actions including: creating solar plants and energy communities, promoting the participation of economically disadvantaged people in self-produced energy sharing projects, defining procedures for the creation of solar plants and storage at the service of the community, and supporting individual municipalities in training and raising awareness among citizens in collaboration with the Energy Services Manager and the University. |
| Regulation for the shared administration of movable and immovable property | This Regulation governs the collaboration between citizens and the Administration for the implementation of forms of shared administration of tangible and intangible common assets on the city's territory for the benefit of the entire community. Approved by Resolution No. 102 of May 2023. | The purpose is to pool the city's tangible and intangible assets to foster civic initiative and citizen participation while bringing together the interests of the municipality on the basis of citizens' concerns. |
| Strategic Plan for the Right to Housing 2023-2026 | Housing policies constitute a fundamental component of Roma Capitale's action for equal opportunities and the fight against inequalities. | The four action lines linked to the plan are: the provision of housing to increase the supply of housing on which the administration has allocated 220 million resources in 2022; the strengthening of programmes for the recovery of the housing stock and projects for the self-recovery of housing in a degraded state, for which PINQua funds are being used; the revision of housing welfare measures; the establishment of the Observatory of the Housing Condition in Rome and the Social Agency for Housing. |
| Plan 100 Parks for Rome | Project aimed at the recovery, redevelopment and enhancement of 100 parks and green areas in the city over 10 years, returning them to full public use. | Presented at the Campidoglio in February 2024, the plan envisages the first 21 actions for a total estimated amount of approximately 63 million euro to be completed by the end of the year. A further 16 projects are already financed with a budget allocation of more than 35 million euro. The projects are part of a strategic master plan that seeks to create a true green infrastructure in the city, favouring the connection between parks and green areas targeted for redevelopment. |
| Green Investment Plan | A plan that defines the priorities for intervention on green areas in different parts of the city, and quantifies the economic resources allocated; it envisages an online platform for transparent follow-up also by citizens. | The Plan includes a series of interventions, defined by the Environment Department, which are already affecting individual areas but also villas and gardens. It includes 61 different actions, most of which have already started or are about to start. They will be completed between the end of 2022 and 2023, thanks to a total investment of about 69 million euro, plus approximately another 50 million euro in planned expenses for the ordinary maintenance of green spaces |

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| Agrifood Strategic Plan 2020-2030 | Promoted by the Department of Economic Development, Tourism and Employment and the Department of Urban Planning of Roma Capitale in collaboration, the Plan, which was born out of moments of confrontation and sharing between sector stakeholders, outlines actions to be implemented in the medium and long term to add value to a strategic sector for the city and enhance the potential that the area could express | Among its key objectives are the promotion, development and protection of Roman agriculture with a view to achieving the sustainability of the agri-food system; the valorisation of origin production and education for conscious consumption involving support to Roman markets and short supply chains; the reorganisation of logistics; the fight against food waste; incentives for the circular economy; and the establishment of an efficient communication campaign to promote territoriality and sector enhancement projects. |
| The Climate Adaptation Strategy | It was approved on 23 January 2024 and followed by the public consultation phase and moments of meeting, confrontation and training with the territory through conferences, thematic workshops and working tables with stakeholders and competent institutions. | The Plan has the following objectives:<br>• Reducing risks to people's health and safety<br>• Rethinking the city's relationship with water and the sea<br>• Reducing heat in neighbourhoods,<br>• Improving liveability starting with the most fragile neighbourhoods<br>• An economy resilient to climate impacts |
| Memorandum of understanding between the Municipality of Rome and Terna for the modernisation of the capital's electricity grid | The agreement, signed in March 2022, is aimed at implementing interventions to improve the efficiency and sustainability of the capital's electricity grid. | The main action will involve the construction of four new high-voltage connections for a total of around 25 km and an estimated cost of around 60 million euro. Moreover, the agreement calls for the establishment of a permanent technical table to discuss time frames and methods for the realisation of major works in the capital's territory which will guarantee a renewed, safe, and efficient electricity grid and, at the same time, enhance the city's natural and environmental heritage. |
| Agreements with public administrations, research institutes, universities, non-profit associations, etc. | Agreements with various bodies/institutions for technical support and multi-level governance. | The environmental sustainability and the reduction of Roma Capitale's emissions are the basis of the agreements drawn up with various bodies/institutions. |

| A-2.3: Emission Gap | | | | | | | | | | | |
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| | **(1) Baseline Emissions** | **(2) Emission Reduction Target for 2030** | | **(3) Emission reduction through existing Action Plans** | | **(4) Emission Gap** | | **(5) Emission Reduction through the CCC** | | **(6) Residual Emissions** | |
| | Baseline emissions (ideally no later than 2021): refer to the inventory used for target setting | The emissions reduction target for 2030 ideally achieves a minimum reduction of 80% compared to the baseline scenario, as reported in Section 2 of the CCC Commitments document. The overall target should be absolute or net zero (i.e. include offsetting any remaining emissions). | | These are the emission reductions that could be achieved through existing policies and plans, outlined in Section A-2.1. These actions are by definition not part of the stock portfolio in Section B. If they are fully or partially incorporated in Form B-2, their associated reduction potential should be indicated in column (5) and not included here. PLEASE NOTE if the baseline is a BAU scenario: if the BAU model includes any of these existing measures, avoid also including the associated emission reduction in this column, otherwise it would be counted twice. | | (4) = (2) – (3) | | This column is used to present the already quantified emission reduction associated with the stock portfolios outlined in Form B-2. Ideally, this corresponds to the gap. If a gap exists between the reduction potential of the actions specified in Form 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 gap and explain how the gap will be closed. In principle, as long as the gap has not been addressed, it would be considered part of the residual emissions. | | (6) = (1) – (2) | |
| | (absolute) (specific values) | (absolute) | (%) | (absolute) | (%) | (absolute) | (%) | (absolute) | (%) | (absolute) | (%) |
| Buildings | 5,184,229 | 4,147,383 | *80.00%* | 569,788 | *10.99%* | 3,577,595 | *69.01%* | 3,543,961 | *68.36%* | 1,036,846 | *20.00%* |
| Transport | 2,929,845 | 2,343,876 | *80.00%* | 719,518 | *24.56%* | 1,624,358 | *55.44%* | 1,574,358 | *53.74%* | 585,969 | *20.00%* |
| Waste and wastewater | 438,272 | 350,618 | *80.00%* | 327,266 | *74.67%* | 23,352 | *5.33%* | 23,352 | *5.33%* | 87,654 | *20.00%* |
| Industrial Processes and Product Use (IPPU) | 45,658 | 36,526 | *80.00%* | 0 | *0.00%* | 36,526 | *80.00%* | 36,526 | *80.00%* | 9,132 | *20.00%* |
| Agriculture Forestry and Other Land Use (AFOLU) | 0 | 0 | *0.00%* | 5,205 | | (5,205) | - | 200 | | - | *0.00%* |
| **Total** | **8,598,003** | **6,878,403** | *80.00%* | **1,621,776** | *18.86%* | **5,256,626** | *61.14%* | **5,178,397** | *60.23%* | **1,719,601** | *20.00%* |

**Table 6: Emission Gap**

## 2.3 Module A-3 System Barriers and Opportunities for Climate Neutrality

**A-3.1: Description of Systemic Barriers and Opportunities**

An analysis of the barriers and opportunities for climate neutrality in Rome was recently carried out during the drafting of the Climate Plan. The main results are reported below, adding further details from both Roma Capitale's internal meetings and those held with external stakeholders.

The achievement of the CCC objectives requires significant investments in the sectors involved, with different relevance and features according to the parties involved (public or private), the technologies and incentives available, which allow a return on investments with different timelines through management savings. Some of the initiatives will need direct State and European non-repayable funds for public interventions, or through incentives to private individuals, while others will already be competitive without incentives but will require instruments to access credit for investments.

**Renewable resource energy**

The distribution of photovoltaic plants in the territory has gone from 13,007 plants installed at the end of 2019[6], the year of the baseline inventory, to 21,846 in December 2023 (GSE data). Despite the considerable growth in recent years, also shown by the data described above, the potential for the installation of photovoltaic systems in the municipal area, especially on buildings, is still significant.
For the installation of solar power on the roofs of buildings in Rome, on the shelters of the largest car parks and for a share of agrivoltaic plants according to the maximum potential covered by the study carried out for the Climate City Contract, the total estimated investment is about 5.5 billion euros (Ref. Investment Plan).
The incentive system currently in force allows investments by households and businesses to be financed up to 50%, through tax deductions, and provides incentives for energy communities and collective self-consumption configurations in line with the European Directive 2018/2001.

Additionally, the **barriers** to RES plant development concern low-income households, which cannot benefit from incentives due to the absence of income to be deducted, and more generally in the access to credit, which finds issues compared to the guarantees required for investments in the direction of decarbonisation. Large-scale agrivoltaic and photovoltaic plants to cover parking lots, on the other hand, are now in a grid parity in terms of price-production, so most frequent barriers they face are related to authorizations and access to credit.

To make the 2030 objectives concrete, it is important to give continuity and effectiveness to incentives, simplify procedures, solve issues for ineligible families and introduce a fund for access to credit at subsidized rates for this type of intervention.
The knowledge of the photovoltaic potential, both in terms of kWp and related to the most suitable places for installations, is a great opportunity for greater development of this renewable source in the territory.
RES installation is associated with the development of the CACER (called CERC – Capitoline Renewable Energy Communities in Rome) which put in place the first concrete steps just as this plan was being written. The development of Renewable Energy Communities is an effective solution to reduce energy poverty and fight inequalities, and a concrete response to the energy prices' fluctuations which imply higher bills.

[6] Cumulative data up to 31/12

Authorization barriers are also an issue face by the Capitoline Municipality. The installation procedures are often complex due to the national superintendence which defines limitations and to the legislation on suitable areas which presents strong critical issues for the development of photovoltaics and agrivoltaics systems. The Municipality will simplify the procedures for installing solar panels on the roofs of buildings, as required by Resolution No. 402 approved in December 2022, implementing a national law approved in 2022, in order to reduce one of the main barriers to access in a city where there is a widespread stratification of limitations.
Strong opportunities are given by new technologies (e.g. vertical and/or chromatic panels) and by the increasing development of innovative projects. An example of this is the San Giovanni Addolorata hospital in Rome with its flagship project, also presented on various national working tables, for the installation of a photovoltaic system located on buildings subject to specific limitations.

**Energy efficiency of the private building stock**
The planned energy requalification objectives for the building stock - private residential buildings, public social housing blocks, tertiary and industrial buildings, and public buildings - can be estimated at a total expenditure of about EUR 19.17 billion, which concern efficiency upgrades on the building envelope, the reduction of transmittances, and the efficiency/electrification of thermal systems; as far as the tertiary and industrial sectors are concerned, the interventions envisage the reduction of methane, fuel oil and diesel oil consumption in the sector through interventions on the building envelope, systems, and the electrification of overall consumption.
Barriers to the speeding up of interventions are to be found in the incentive systems in force, currently being reviewed by the government, which cover a share of the investment for private interventions but do not reward separately the performance achieved in terms of $CO_2$ and are inaccessible to low-income households (the individuals with insufficient earnings or those who have no income to declare). As with photovoltaics, households and companies face problems in accessing credit for financing this type of intervention.
As regards the assets of Roma Capitale, it can be estimated that more than half of the buildings (starting with schools, offices, social housing) could be upgraded with the incentive systems in force (including the thermal account, which covers 65% of the expenditure of efficiency-enhancing interventions) and through public-private partnerships for upgrading and management through tenders and Energy Performance Contracts. For the remainder, the structures' static and decay problems are such that state resources are needed to enable the interventions. A system of access to credit at subsidised rates must also be introduced for the financing of energy efficiency measures.
To realise the 2030 targets, it is necessary to introduce, within the framework of the National Plan for the Renovation of Buildings, provided for by the Energy Performance of Buildings Directive (EPBD), a system of incentives that transparently and progressively rewards the reduction of emissions over a multi-year horizon, and a fund for access to credit at subsidised rates for this type of intervention.
To ease the existing barriers, given not only by the economic difficulty and access to incentives for citizens but also by a need for cultural change that can facilitate the electrification of consumption in private households, Roma Capitale is moving towards several parallel directions while also creating opportunities: thanks to ENEA, a study was carried out on the incentives and tax breaks related to energy efficiency in the area. These results show the extent to which the measures are being implemented and serve as a starting point for future projections and scenarios in the private housing sector.
The Italian Government is in the process of updating the National Integrated Energy and Climate Plan. This represents an occasion for the entire country but also for Roma Capitale which, together with the other 8 Italian 'Mission Cities', has presented specific observations and suggestions addressed to private citizens and the entire urban ecosystem.

**ERP energy renovation**

The stock of public housing managed by the Municipality and Ater will be the priority in the redevelopment interventions for both social and energy reasons, given the current condition of abandon which characterize the structures. Today there is no incentive system that can accelerate these interventions, after the weakening of the Superbonus and given the shortcoming of the Thermal Account. To make these interventions possible, a guarantee fund is needed to access the credit at subsidized rates for the energy redevelopment of buildings, the installation of solar panels and the creation of energy communities, which would allow interventions to be carried out in neighbourhoods and buildings where low-income families live.
The social housing heritage of Rome is extensive with about 25,000 dwellings owned by the municipality by itself, to which are included those owned by the Lazio Region and the housing of individual citizens who have purchased ownership over the years. The large number of dwellings and the plurality of subjects involved does not facilitate the decision-making process necessary to put into practice efficiency and energy saving measures.
Another barrier is the lack of knowledge of consumption and the state of the social housing units. An opportunity, however, is drawing by the study which is currently carried out for the Municipality of Rome Capitale on the mapping of social housing buildings. The outputs will give a more detailed picture about the structures and detailed information necessary to carry out future project of renovation on energy saving and RES production.
A further opportunity is given by the increasing access to PPP - Public-Private Partnership contracts which, if applied to social housing buildings' renovations, could lead to a boost towards the energy requalification of this complex category of real estate assets.
The energy redevelopment of public housing assets has been identified as one of the priority strategies for Rome Capitale.

**Sustainable mobility**
For the implementation of the interventions planned by the Sustainable Urban Mobility Plan of Rome - i.e. the construction of line D, the extensions of lines A and B, the construction of the seven tram lines and the adjustments of the existing lines - it is estimated that there will be a need for about 15 billion in investments in the coming years.
Specific and additional resources should be allocated to strengthen the current inadequate public transport service that are made available through the National Transport Fund (which allocates 40% less per capita allocations than in Milan), in order to increase the frequency of subways, buses and trams in circulation: the estimation for the city of Rome requires almost 160 million euros per year by the Ministry of Transport as part of the national transport fund.
For what concern the private vehicle fleet, the replacement included in the CCC's actions and strategies are related to the renovation of private cars and commercial vehicles with electric vehicles which leads to an estimated cost of 13.6 billion euros.

**Electrical distribution networks**
The electricity distribution network operator, Areti, estimates additional investments of 3.8 billion euros by 2030, compared to those in progress planned in its business plan, to ensure the resilience of the grid to the climate change impacts, through interventions to recover the obsolescence of the network and the replacement of the oldest equipment of the grid; moreover, the estimation requires 1 billion euros for the introduction of storage systems for peaks in electricity demand, necessary to ensure the flexibility of an increasingly distributed and articulated system such as production, storage, consumption.

**Decarbonisation benefits for citizens and businesses**
Considering the whole range of buildings, the public and private ones, the institutional ones, the tertiary and the industrials - the energy efficiency measures presented in the Climate City Contract

would lead to a significant reduction in gas consumption, with savings in bills estimated at current prices of about 600 million euros per year.
On the other hand, it is necessary to consider an increase in consumption due to the electrification of heating systems and the production of domestic hot water equal to 6% for an expense of about 120 million euros.
At the same time, developing the potential of solar photovoltaic that can be installed in Rome generates direct benefits in self-consumption, sharing in energy communities, and selling to the grid. At current market prices, the valorisation of electricity production from photovoltaics (savings in bills from self-consumption and transfer of excess energy to the grid) can generate an estimated economic value of around €580 million per year.
Overall, it can be estimated a reduction in energy expenditure of 1 billion euros for the citizens and businesses of Rome who, moreover, would no longer be subject to the fluctuations in gas prices on the international market. It should also be considered that the investment expenditure is calculated on the current data available about technologies' prices which are constantly uncertain and on the prospects of increases in efficiency for solar panels, storage systems, heat pumps.

**Ancient Rome, archaeological sites**
Rome, the Eternal City, is famous for its rich history and cultural heritage. However, this same historical richness implies unique challenges on the path to climate neutrality, especially for the transport sector.
During construction and infrastructure development work, important archaeological finds are often discovered which cause delays in construction projects and create barriers to mobility.
For example, during the works for the construction of the new Piazza Pia, archaeological finds were found that required a delay in the project timeframe. In another case, during excavations for the new water system in the Appio Latino district, three mausoleums were discovered along the ancient Via Latina. Despite these challenges, Rome is trying to find a balance between infrastructural development and the preservation of historical heritage. For example, the city is working to integrate archaeological finds into urban design and to use innovative technologies to reduce the impact of development projects on historical heritage.
Furthermore, a key point for Rome would be to act directly in these cases which are currently mainly linked to the Ministry of Culture which has direct responsibility and decision-making power over the protection, enhancement and enjoyment of the national cultural heritage.
In conclusion, Rome's path towards environmental sustainability is a complex and challenging journey, but also full of opportunities. Each archaeological discovery represents a window into the city's past, enriching the urban development with new historical and cultural connections.

**Building strong institutional cooperation**
A further barrier/challenge is related to the definition of a strong institutional cooperation which brings cities at the centre of the debate. The Climate City Contract is the tool that can make it possible and can accelerate the achievement of the objectives of the European Green Deal starting from the cities through a strong and virtuous integration with national policies. In fact, the urban areas are responsible of the highest demand for energy, transport and materials and it is where integrated interventions can be carried out to enhance and multiply the contribution of renewable sources and energy efficiency, in neighbourhoods and buildings where ambitious results in terms of climate mitigation and adaptation can be achieved. In Italy, reasoning of this type is especially valid if it refers to Rome, the municipality with the largest population, the largest number of private and public buildings and by far the largest territory of a unique Municipality in the whole country.

To become credible, this hypothesis requires that cities, and in particular the larger ones, are involved in the definition of policies and plans through a co-design of priorities and actions, in order to make the results more effective. The State and partly the Regions have still the competence on financing

the energy transition, as well as the regulatory power to simplify the approval procedures for projects concerning energy efficiency and renewable energy plants. In addition, an important part of Rome's **public heritage** is owned by the State (Ministries, Public Bodies, military headquarters) and a part by the Lazio Region (ASL, over 50 thousand public housing units) so it will be important to share the energy redevelopment objectives. An involvement of cities and collaboration between different institutional levels will be essential for the achievement of the objectives of the Climate City Contract. About the **PNIEC** (Integrated National Energy and Climate Plan) it is worthy to remember that while during the drafting and approval there was not the involvement of the cities, in its implementation phase it is desirable a strong collaboration if the European targets have to be achieved. In Rome, more than 60% of greenhouse gas emissions come from buildings, so an important area of institutional cooperation will have to concern the drafting by 2026, as required by the EPBD (Energy Performance of Buildings Directive), of the **National Plan for the Renovation of Buildings** (both residential and non-residential and public and private) to identify priority interventions in terms of energy consumption and issues of households, in order to achieve the decarbonisation by 2050. Furthermore, since cities are carrying out a just transition in to order to face the greatest social and economic issues, it is necessary a debate on the National Plan that the Italian government should approve to carry out the measures and invest the resources of the Social Climate Fund to lower energy poverty and the strengthening sustainable mobility for the benefit of the poorest subjects, and which must involve indeed the suburbs of large Italian urban areas.

**Training for green jobs**

All the analyses confirm the significant potential for the creation of new jobs in Rome in the energy and mobility sector through interventions that aim to enhance the efficient use of energy for cooling and heating homes, self-production and sharing from renewable sources, the retrofit of buildings and the integrated management of plants and the territorial supply chains. The boost of the energy and digital transition, which are now deeply on-going, will depend on the ability to train workers with the technical skills required for the new professions that are taking hold in those sectors which are experiencing valuable and rapid transformation. To strengthen this perspective, it is necessary to put in place a strong institutional collaboration with the Lazio Region (which is entrusted with the competence in the field of vocational training), the Ministry of Labour and other competent institutions, business and workers' associations in order to identify the gaps in terms of skills and competences to be filled, the interventions necessary to update, strengthen and improve the training offer.

The following table shows the 80 stakeholders involved in the Mission. The details of the individual actions will be presented in Module B. The table is structured in relation to the system in which the stakeholder acts.

Table 7: Stakeholders mapping

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| **Rome Municipality** | | |
| Department of Major Events, Sport, Tourism and Fashion | Coordinates promotional activities for major sports, tourism and fashion events as primary resources for the economic, social and cultural growth of the area, also through participation in fairs and tourism promotion events | The objectives are to raise awareness of sport as a value for coherence and strengthening social life; to improve the tourist offer through Zatema Progetto Cultura for the tourism activities and provision of services; the spreading of low carbon impact practices for large events and demonstrations. |
| Department of Sustainable Mobility and Transport | Planning and management of urban mobility in its various aspects: traffic, pedestrian traffic, sustainable mobility, public and private transport, mobility of people with disabilities, parking and parking | The Department's objective is to improve the accessibility and availability of the LPT services and the quality of life of its inhabitants and tourists. |
| Department of Heritage and Housing Policies | The Department takes care of the inventory, protection, use and renovation of the Real Estate Heritage of Rome Capital and all the building redevelopment interventions affecting it. | It carries out recovery activities for public residential buildings (E.R.P.) and establishes the regularization assignments of E.R.P. housing. It also deals with housing support policies through rent contributions and redevelopment interventions. |
| Department of Social Policies and Health | Planning and coordination of the city's welfare needs through specific social projects. | Redevelopment interventions of municipally owned buildings, social housing initiatives and retirement homes |
| Department of Urban Planning and Implementation | The Department deals with the general planning of the territory, plans and regulates its transformations and manages its implementation tools, including those relating to public and private residential construction. | Urban recovery interventions in numerous neighbourhoods of the metropolitan area of Rome Capital. |
| Development of Infrastructure and Urban Maintenance | Development and construction of infrastructure, maintenance of hydraulic works and water networks, maintenance of heating and air conditioning systems, activation of alternative and renewable energy systems, construction of new social and school housing structures | The redevelopment and efficiency interventions of ERP housing, schools, theatres and museums, foundation of CER and installation of photovoltaic fields. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Department of Environmental Protection | The Department's objectives are protecting the territory, the environment and its biodiversity; furthermore, its skills include: the design, maintenance and construction of public green areas, including furnishings, play areas and dog areas. | The interventions mainly concern the redevelopment of areas intended for public greenery to extend the areas dedicated to parks and green areas to citizens |
| **Public administration** | | |
| ASL 1 | Public legal entity, created in 2016 following the merge between ASL Roma A, Azienda Ospedaliera San Filippo Neri and ASL Roma E: the merge follows a process of transformation of three healthcare companies into a single entity, in implementation of the operational programs of the Lazio Region 2013-2015. | Diffusion of ESG practices in the healthcare sector; energy renovations of owned buildings and construction of more energy efficient pavilions. |
| **Controlled and participated from the Municipality** | | |
| ACEA - ATO2 S.p.A. | 96% owned by the ACEA SPA group (controlled by the Municipality of Rome for 51% of the share capital) manages the integrated water service for Area 2 Central Lazio - Rome, combining quality of service, sustainable management of the water resource and respect for the environment. | Enhancement interventions of the local water network; some interventions concern areas located outside the municipal territory whose effects are also tangible for the city of Rome. |
| Areti S.p.A | Subsidiary of the ACEA group which deals with energy distribution and control of electricity networks. | The aim is the enhancement of the national electricity grid in state of obsolescence to guarantee greater capillarity and resilience in the increasing demand for electric energy and with a geopolitical and climate change framework characterized by strong instability. |
| AMA S.p.A. | 100% controlled by Roma Capitale, it is the company that deals with the collection, transport, treatment, recycling and disposal of waste. | Increase the sorted waste collection with the door-to-door solution across the territory; the development of collection centres for special and bulky waste; other solution to engage citizens is the home composting. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| ATAC S.p.A. - Mobility company | 100% controlled by Roma Capitale, it is the capital's road and rail haulage company | The projects of the local public transport network both by road and rail will allow an improvement in the service and an increase in users. |
| Centro Agroalimentare Roma S. Coop. p.A. | 27.8% owned by Roma Capitale, it is one of the most important European structures for the marketing of fruit, vegetables and fish products | The transformation interventions of some logistics spaces aimed at optimizing the market to make the storage of goods more efficient with particular attention to the efficiency of distribution processes represents an important innovative element for the site and the commercial reality of the city of Rome. |
| Risorse per Roma S.p.A. | 100% controlled by Roma Capitale, it supports the Capitoline Administration in the planning, territorial design and transformation sectors and in management support for the projects of the construction management of the urban planning department | There are numerous projects in which the company is involved as technical advisor to the Administration. Furthermore, the company manages the Roma Servizi per la Mobilità company which deals with mobility and transport with sector studies and research set in the local context. |
| **Controlled or participated from the State and other Institutions** | | |
| Agenzia del Demanio | Public company that manages the real estate assets of the State, administering approximately 44 thousand assets for a value of 62.8 billion euros. | Revamping and efficiency improvement of owned buildings |
| Autostrade per l'Italia S.p.A. | Publicly controlled company since 2021, whose main activity is related to the concession of motorway sections, as well as the performance of related maintenance. | Building efficiency improvements to the headquarters, installation of charging stations and electrification of the company fleet |
| Banca d'Italia | Central Bank of the Italian Republic, established under public law regulated by national and European legislation. It is an integral part of the Eurosystem, which is made up of the national central banks of the euro area and the European Central Bank. | The Institute has started a process of reducing its environmental and carbon footprint since 2008, with the dissemination of an Environmental Policy document, then updated in 2015. The Bank has been publishing an Environmental Report since 2010, updated annually. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Cassa Depositi e Prestiti S.p.A. | Public controlled financial institution, the majority of shares are held by the MEF, the remaining part by banking foundations). | Financing of major structural project for the country and for the local economic development of cities |
| Cinecittà S.p.A. | Italian public company, with the unique shareholder being the Ministry of Economy and Finance, whose rights are exercised by the Ministry of Culture in agreement with the Ministry of Economy and Finance. | As part of the CCC, the company is investing in the installation of RES systems and the renovation of buildings and in the more sustainable management of stage materials and circular products. |
| INPS – Istituto Nazionale Previdenza Sociale | Social security institution of the Italian public pension system. | The main headquarters of the Authority is located in Rome: the commitment is aimed at massive use of remote work for all employees. |
| Istituto Poligrafico e Zecca dello Stato S.p.A. | Italian State company that mainly deals with: publication of identity documents, anti-counterfeiting and traceability, coinage, web-based products. | The company adopts the following improvement guidelines for its offices and the production processes that characterize it:<br>- Green purchasing and supplier evaluation with a view to enhancing sustainability;<br>- Self-production of energy through renewable sources;<br>- Adoption of active policies for carbon neutrality;<br>- Reduction of the environmental footprint of products and production processes. |
| Leonardo S.p.A. | Italian company active in the defence, aerospace and security sectors. Its largest shareholder is the Italian Ministry of Economy and Finance, which owns approximately 30% of the shares. | The company's commitment to sustainability materializes in 2024 with the validation by Science Based Targets initiatives of the emissions reduction targets for 2028 and 2030. |
| Poste Italiane S.p.A. | Public company operating in the sectors of postal, insurance and financial services, telecommunications and telegraph services and recently also energy (electricity and gas). It is controlled by the Ministry of Finance and CDP which together hold 65% of the shares. | The Group, in line with its adherence to the Paris Agreement and the New Green Deal, has set itself the ambitious goal of contributing to the achievement of international carbon neutrality objectives by 2030; at the Rome headquarters, projects for fleet renewal, photovoltaic installation and building redevelopment are active. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Rete Ferroviaria Italiana S.p.A. | Group that manages the national railway infrastructure and define the development plan of the national mobility in agreement with the Ministry. | The company's commitment to ecological transition involves the development of solutions based on renewable energy sources, the implementation and modernization of the rail and road network that also touches the interchange hub of the city of Rome. |
| SACE S.p.A. | Italian insurance-financial group, directly controlled by the Ministry of Economy and Finance, specialized in supporting businesses and the national economic development. | The interventions mainly concern the efficiency of the Rome headquarters and its complete decarbonisation through the purchase of green energy. |
| Sport e Salute S.p.A. | Italian public company that deals with the development of sport in Italy, producing and providing general services. Its sole shareholder is the Ministry of Economy and Finance. | The company is committed to spreading the culture of sustainable mobility and attention to recycling during sporting events organized in the venues it manages. |
| **Research institutions and Universities** | | |
| CNR | Italian public research body which promotes scientific, technological, economic and social progress. | The organization has various offices located in the main Italian cities; the Rome office is the main office that brings together all the Council departments involved in training and dissemination events and meetings. |
| Enea | National agency for new technologies, energy and sustainable development, it deals with research in the energy and environmental fields and the application of new technologies to support sustainable development and competitiveness. | The agency's contribution is mainly research in innovative and high-tech fields including for example: innovative solutions for building efficiency, feasibility studies for innovative solutions in the RES field |
| ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale | The Higher Institute for Environmental Protection and Research is a public research body controlled by the Ministry of the Environment | The organization is involved in numerous research projects at European level such as sustainability and ecological transition topic, monitoring of land transformations, in reforestation and in heat wave cases. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Orto Botanico di Roma - Polo Museale | The current Botanical Garden extends over 12 hectares and preserves naturalistic varieties from all over the world as well as centuries-old trees and greenhouses where unique species are preserved. The Garden is an integral part of the Department of Biology of Sapienza University of Rome. | The institution is investing in the efficiency of its facilities and in improving waste management. Reforestation projects are active, including the new stops on the C metro line. |
| Università degli Studi "La Sapienza" | Public university with over 120,000 students and a building area of 439,000 m² just within the city. | Thanks to PNRR funding, the University Council has implemented an ambitious plan to improve the efficiency of buildings that affect not only the university city but also the branch offices present in the territory of Rome. |
| Università degli Studi Roma Tre | Third public university in the capital by number of students (32,000) with 13 departments in total, its own theatre and a sports stadium. | The university is working on the redevelopment of the facilities, with the installation of FER systems and the establishment of a CER. An awareness program against the use of single-use plastic is also underway. |
| Università degli Studi Tor Vergata | Public university whose main building is located in the district of the same name and occupies an area of approximately 500 hectares. | The University is mainly committed to communication, awareness and research in the areas of sustainability and ecological transition; the redevelopment of the main building. |
| **Energy sector operators** | | |
| Edison Next Government S.r.l. | Italian company active in the sectors of electricity and gas supply and sales, controlled by the French group Electricitè de France. | In the territory of Rome, the company has proposed innovative solutions relating to traffic control and management systems through the modernization of traffic light systems. |
| Enel Sole S.r.l. | Company that operates on behalf of the Enel group in the public lighting sector which has been committed to using LED technology in public lighting since 2009. | In the Rome area, the company is proposing innovative solutions to reduce electricity consumption |
| Enel X Italia S.r.l. | Global business line of the Enel group which operates in the field of energy supply, energy management services and public and private electric mobility | In the Rome Capital area, Enel is opening its own stores in order to |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Enel X Way Italia S.r.l. | Business line of the Enel group that promotes innovative solutions in the e-mobility sector | The company is installing electric charging stations in the municipal area and encouraging the spread of electric mobility |
| ENGIE Servizi S.p.A. | French multinational operating in the production and distribution of natural gas, renewable energy and services sectors. | The interventions planned by the company in the municipal territory concern the energy efficiency of numerous buildings housing national ministries and agencies. |
| ENI S.p.A. | Company 30% owned by the State (through MEF and CDP), active in the sectors of oil, natural gas, chemistry, biochemistry, production and marketing of electricity from fossil fuels, cogeneration and renewable sources. | As part of the sustainability plan, the company is planning interventions in the capital to consolidate electric sharing mobility through the diffusion of electric cars and the necessary infrastructure. Training and awareness-raising activities in schools and private institutions should not be forgotten. Finally, through its subsidiaries Versalis and Novamont, the company is involved in the sale of green products. |
| Terna S.p.A. | State-owned company (30% owned by CDP) operator in electricity transmission networks with the management of approximately 75,000 km of high voltage electricity lines | The modernization of electricity lines represents a fundamental element of the transition process towards the electrification of consumption. |
| **Business association** | | |
| Unindustria | Unindustria promotes the development of businesses in the areas of Rome, Frosinone, Latina, Rieti and Viterbo | The association's internal activities aim to raise employee awareness on environmental issues and promote more sustainable behaviour. In addition, awareness campaigns are underway for associated companies with the identification of good practices for members. |
| **Foundations** | | |
| Fondazione Banco dell'energia Ente Filantropico | Non-profit association created with the aim of supporting individuals and families who find themselves in economic and social difficulty | Implementation of projects related to the fight against energy poverty, establishment of Renewable Energy Communities, training on the conscious use of energy |
| Fondazione Bioparco di Roma | Zoo for the care, protection and enhancement of species belonging to wild fauna and flora. | The foundation that manages the park is committed to making the buildings within the garden more efficient with the aim of |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| | | installing RES and reducing consumption by making the systems more efficient |
| Fondazione Marevivo - ETS | Environmentalist association that deals with the protection of marine biodiversity through awareness-raising actions and involvement of citizens and its members | In the territory of Rome, the association is involved in various beach cleaning projects, waste recovery, sector studies on the health of rivers and seas in the Roman coasts, communication campaigns to raise public awareness |
| Fondazione MAXXI | National Museum of 21st Century Arts managed by the Ministry for Cultural Heritage and Activities. | The museum buildings are being redeveloped with the modernization of the systems to limit their dependence on fossil fuels. |
| **Non-profit, NGO and other associations** | | |
| A Sud Ecologia e Cooperazione O.d.V. | Ecological organization that deals with the environment, territorial development through training and information | In the capital, the association is active with programs to raise awareness of the suburbs; it is also an active part in the establishment of a CER in the Torpignattara district. |
| Green Building Council Italia | Green Building Council Italia is a non-profit association whose members are the most competitive companies and the most qualified Italian professional associations and communities operating in the sustainable building field. | The company operates on several buildings located in the territory of Rome Capital through the adoption of protocols for sustainability and the certification of green buildings. |
| Greenpeace Onlus | The local Greenpeace group in Rome is engaged in activities, research and support for Greenpeace Italy campaigns. | There are ongoing awareness-raising and active citizenship activities in schools, participation in numerous demonstrations and events consistent with the values of the association. The group is also active with other local associations and movements in Rome, with the common goal of creating a more sustainable city and raising awareness among those who pass through it. |
| Kyoto Club | Non-profit organization made up of companies, institutions, associations and local administrations, committed to achieving the objectives of reducing greenhouse gas emissions undertaken with | The main activities of the association are training and awareness-raising of citizens on issues of energy efficiency, |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| | the Kyoto Protocol, the Paris Agreement and the European Green Deal. | use of renewables, correct waste management and alternative mobility, bioeconomy and circularity. |
| Rete Assist - ETS | National network created to consolidate and continue the work started within the European project ASSIST. The association is a point of reference at national level for all those involved in promoting the fair energy transition and in reducing energy poverty. | At its headquarters in Rome, the association proposes a multi-level approach in line with the need for a holistic solution to address complex and multidimensional problems that encompass aspects ranging from the social to the technical. |
| Save the Children Italia - ETS | Independent international organization for the promotion of childhood and adolescent rights; the commitment also includes the promotion of sustainable development, in line with the objectives of the United Nations Agenda 2030 and the European Plan for Energy and Climate. | The Roman headquarters of the association has committed to redevelopment of the headquarters and training, with educational proposals aimed at schools of all levels. |
| WWF Italia - ETS | International non-governmental organization for environmental protection and conservation | The Roman headquarters of the association deals with training, awareness and enhancement of some green areas including the Centocelle park, the Roman coast park, the green areas bordering the Tiber river park. |
| **Credit institutions** | | |
| Banca di Credito Cooperativo di Roma Soc. Coop. | A local banking institution whose mission is to promote the sustainable growth of the territory and the well-being of the citizens and businesses that live there. | The bank's commitment to sustainability is consolidated by the publication of the Sustainability Plan for the two-year period 2024-2026. |
| Banca Popolare Etica S. Coop. p.A. | A local bank whose founding principles include putting finance at the service of people, for the construction of a fair and inclusive society | The bank's strategy at group level is to reduce direct emissions both with respect to the operating offices located in the territory and with respect to the products offered; for this reason, it has equipped itself with a Net Zero plan according to the SBTi standards. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Istituto per il Credito Sportivo | Bank for the promotion and development of Sport and Culture with the institutional mandate of promoting growth according to the principles of sustainability, social responsibility and intergenerational equity. | The banking management strategy constantly combines the sustainability of economic results with social and environmental returns, applying measurements and monitoring each individual initiative on sustainability criteria. The product developed by the Institute in this sense is the Delta Platform. |
| UniCredit S.p.A. | International Italian banking group present in 18 countries worldwide. | In line with its Net Zero commitment, UniCredit Group announced in January 2023 the first set of sector targets on Oil & Gas, Power Generation and Automotive. On coal, the Group has already defined a policy of phase-out by 2028. The Rome office is in line with the Group's vision. |
| **Private companies, enterprises and cooperatives** | | |
| ABB S.p.a. | World leader in the automation and electrification technology of engineering systems applied to industry. | The company's 2030 strategy involves reducing Scope 1 and 2 emissions by 80% compared to 2019 and reducing Scope 3 emissions by 25% compared to 2022. |
| Aeroporti di Roma S.p.A. | Company that manages the Roman airports of Fiumicino and Ciampino. Part of the Fiumicino airport is located outside the border of Rome Capital. | The company's goal is to achieve net zero emissions of Scope 1 and 2 by 2030: for this reason, the company has equipped itself with a program to reduce emissions that aims to plan interventions for the resilience of infrastructures and processes. |
| Aisfor S.r.l. | Agency for Innovation, Development and Training, operates in the field of training, innovation and business development | In the city of Rome, the Association is active with many training projects aimed at local authorities, tutoring aimed at energy poverty, support for the establishment of CER. |
| Almaviva S.p.A. | Leading company in ICT field and in the development of new integrated and sustainable business models. | The digitalization of processes is a fundamental element for the optimization of consumption: the company is committed as a group and in its Rome office in this direction. Furthermore, it |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| | | is active in the conversion of the fleet and in the adoption of remote working for all employees of the Rome office. |
| Angelini Real Estate S.p.A. | Private company that deals with the management of non-instrumental properties, real estate development and investments in the Real Estate sector in the territory of Rome Capital. | The Real Estate group will implement Angelini Industries' 2030 Climate Strategy, which is focused on decarbonization and is working on defining decarbonization targets in line with the SBTi initiative. |
| AzzeroCO2 S.r.l. | Founded by Legambiente and Kyoto Club, the company provides consultancy to companies to create shared well-being for local stakeholders, increase the value of their brand and reduce environmental impact. | The company offers services to local companies such as energy efficiency, studies on the replacement of systems, construction of FER systems, executive planning of residential redevelopments. |
| BASF ITALIA S.p.A. | BASF is a global leader in the chemicals industry with operations in more than 50 countries worldwide. | The Rome plant represents one of the main chemical hubs in central Italy with an area of approximately 45,000 square meters: the company is investing in the energy efficiency of the structure and in the industrial processes that characterize it. |
| Birra Peroni S.r.l. | Italian beer producing company, controlled by the Japanese multinational Asahi Breweries since 2016. | At its Rome headquarters, the company is applying new procedures to optimize and reduce the release of $CO_2$ into the air. |
| Biscotti P.Gentilini S.r.l. | Historical Italian brand for the production of biscuits and baked goods whose main production site is located in Rome. | Sustainable commitment to production and social responsibility represents two fundamental guidelines of the company. This commitment translates into eco-friendly practices relating to products and consumer awareness campaigns. |
| CER Confartigianato Lazio | Association of artisans and small entrepreneurs that offers numerous services such as access to subsidized credit, training, registration in registers and roles, legal assistance, union | Within the territory of Rome and surrounding areas, the association acts as a facilitator in the construction and installation of photovoltaic systems for members; it also deals with training, energy diagnoses and consultancy for members. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| | representation and labour policies, environment and hygiene, safety and quality | |
| Coopservice S. Coop. p.A. | The company deals with the management of facility services for offices, hospitals, schools, museums, airports, stations and shopping centres. | In the city of Rome, the company manages the IFO Hospital for which energy requalification and system modernization interventions are planned. |
| Elettronica S.p.A. | Company that operates in the defence sectors, particularly in electronic warfare systems. | The company is committed to the redevelopment of the headquarters located in Rome, the training of the staff and the conversion of the company fleet. |
| Envision S.r.l. | ICT consulting company that designs, following a circular economy model, high value-added technological services. | Construction of technologically advanced infrastructures that aim to design Rome as smart and resilient city. |
| FASSA S.r.l (Fassa Bortolo) | Italian company leader in the production of adhesives, sealants and other auxiliary products for the building industry. | At its Rome branch, the company is committed to training and raising awareness among staff about good sustainable practices. |
| Hotel Eden S.r.l. | Hotel chain, active in Italy with around a hundred locations. | Hotel Eden has begun its journey towards environmental sustainability, developing strategies and objectives to be achieved in various areas. |
| IKEA Italia S.r.l. | Swedish multinational company specializing in the sale of furniture and furnishing accessories, active in Italy since 1989. | The IKEA locations in Rome are among the first to have opened in Italy: the company, in line with its mission, is making its buildings and systems more efficient in order to achieve complete electrification. |
| Intecs Solutions S.p.A. | Company that designs and develops software systems for the Automotive, Defence, Aerospace, Traffic Control, Railway, Finance sectors. | The Group has defined an Environmental Management System, compliant with the requirements of the UNI EN ISO 14001 standard and obtained the relevant certification in March 2024. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| MAIRE S.p.A. | Italian company leader in the engineering, technology and energy sector with specific skills in plant engineering, green chemistry and the development of technologies for the ecological transition. | At its headquarters in Rome, the company is committed to building an ecosystem of industrial companies active in the energy transition sector through the creation of a new space for discussion, the Green Innovation District. |
| NETGROUP S.p.a. | ICT company committed with the digitalization and development of the IT solutions for the public authorities. | The digitalization of the public sectors includes health, defence and public administration. In Rome it is planned to renovate the main headquarter in term of energy efficiency. |
| NH Collection Hotels | Spanish hotel chain, active in Italy with around a hundred locations. | The group's goal is to requalify buildings and processes with a view to sustainability and reducing consumption. |
| Radio Rock - Q S.r.l. | Active local radio station founded in 1985. | The redevelopment of the radio station began in 2023 and will continue based on the funding the organization will obtain. |
| Sensoworks S.r.l. | IT company for software development and complex and integrated data management. | The company has started to monitor its emissions, from which a reduction and compensation strategy will be developed. The use of internally developed energy consumption optimization software will play a key role in this strategy. |
| Servier Italia S.p.A. | French pharmaceutical company established in Italy since 1982 with headquarters in Rome. | The Group is aligned with the Sustainable Development Goals (SDG) by planning to reduce $CO_2$ by 25% by 2030. The Rome office is committed to this direction with a modernization of the building, several projects to reduce plastic and reuse materials and with environmental management certifications. |
| Siram S.p.A. | French multinational which operates in three main areas of services and utilities traditionally managed by public authorities: water management, waste management and energy services. | The company's Rome office is committed to supporting local and national entities in the decarbonization process through integrated energy efficiency interventions, local production of renewable energy, management of water resources and special waste. |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| Teicos UE S.r.l. | Teicos carries out redevelopment interventions on existing buildings, on behalf of third parties and on its own initiative, with an engineering approach, oriented towards reducing times and costs also thanks to the use of innovative technologies and processes. | The aim is to promote and implement innovative and high-quality interventions by integrating the improvement of safety, healthiness, accessibility and living comfort into projects aimed at decarbonising the built heritage. The main activities in which the company is involved in the Roman territory are: projects for the integration of renewable energy in existing buildings, NZeB redevelopments, construction of ventilated facades for ever greater efficiency of the construction site. |
| Toyota Motor Italia S.p.A. | Japanese multinational automobile manufacturer. | In line with Toyota Motor Europe's (TME) strategy, the Rome office is committed to achieving carbon neutrality across its manufacturing plants and corporate facilities by 2030; achieving 100% zero-emission vehicle sales by 2035; and ensuring carbon neutrality across all purchased goods and services and logistics operations by 2040. |
| Triumph Italy S.r.l. | Communication and event organization company. | In pursuing the macro-objectives set by Agenda 2030, the company has adopted short-term planning to address the most relevant issues with respect to the company reality and the impact produced: among these, the periodic publication of the Impact Report. |
| UrbanV S.p.A. | The company designs and develops innovative urban mobility networks by leveraging its technical expertise and strong relationships with key stakeholders in the sector at national and European level. | The company is committed to electrifying its fleet and installing the necessary infrastructure. |
| Wind Tre S.p.A. | Italian company operating in the telecommunications sector. | The Rome office, in line with the group's guidelines, has launched a plan to eliminate carbon dioxide emissions (Scope 1 and 2) by 2030. The plan includes a continuous commitment |

| A-3.2: Stakeholders mapping | | |
|---|---|---|
| **Stakeholder** | **Influence on the city's climate ambitions** | **Interests on the city's climate ambitions** |
| | | to the energy efficiency of equipment and infrastructure and the progressive purchase of renewable energy. |
| **Extra-territorial** | | |
| Fabbrica di San Pietro | Company that deals with and manages the assets related to the Basilica of St. Peter for the conservation and decoration of the building. | The Fabbrica has activated an "O Emissions" project with the aim of bringing St. Peter's Basilica and the relevant building complex to achieve "net zero emissions" on the path towards the Jubilee |
| FAO | United Nations agency responsible for ensuring the safety and sustainability of agri-food systems. | There are numerous initiatives in which the agency is involved in the field of sustainability in the municipal area of Rome. The agency also undertakes to prepare a sustainability report every year. |

As can be seen from the stakeholder table presented above, the stakeholders have been grouped into categories in order to be able to make a mapping that highlights how the various participating entities can be grouped into specific nuclei of interest. For example, all the entities operating in the energy sector have been grouped together, as well as all the Foundations or credit institutions. This categorization will also help in the future to carry out targeted actions for the continuation of stakeholder engagement. Below is the representation of the number of stakeholders by category, with the exclusion of the Departments of Rome Capital indicated above.

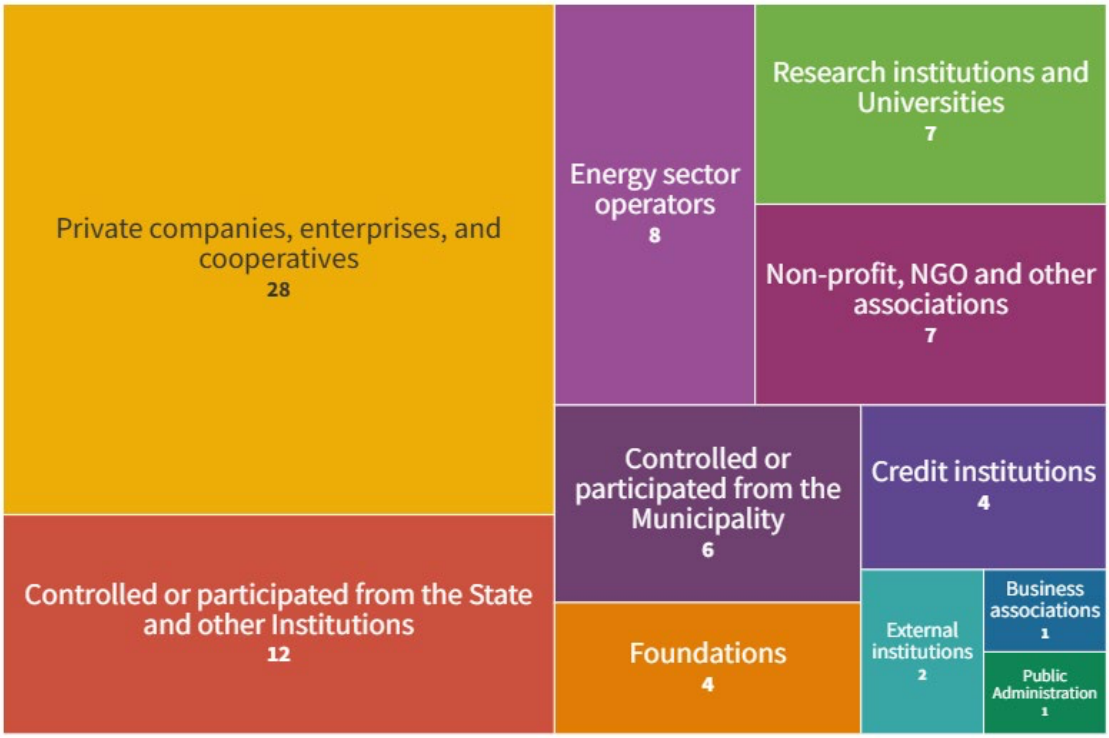


**Figure 7: Number of external stakeholders by category**

Overall, the number of 523 actions, extrapoled from the 705 action sheets, are presented by stakeholders' categories as follow:

- Roma Capitale: 30 actions
- Business associations: 4 actions
- Controlled or participated from the Municipality: 67 actions
- Controlled or participated from the State and other Institutions: 87 actions
- Credit institutions: 19 actions
- Energy sector operators: 42 actions
- External institutions: 18 actions
- Foundations: 15 actions
- Non-profit, NGO and other associations: 21 actions
- Private companies, enterprises, and cooperatives: 161 actions
- Public Administration: 12 actions
- Research institutions and Universities: 47 actions

The infographic above summarizes the number of action collected per each system showing the category in which the initiative is classified.

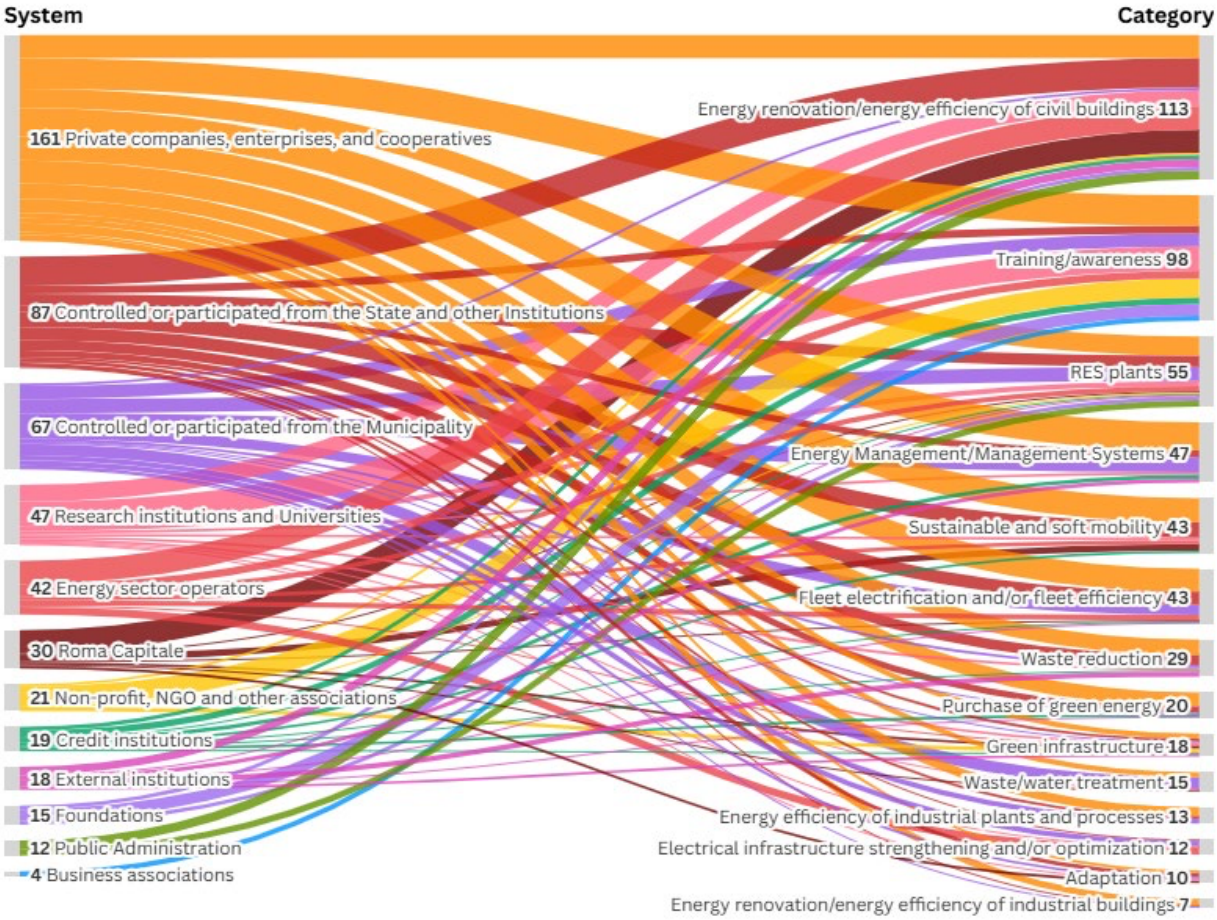


**Figure 8: Number of actions per system identified in the stakeholder mapping and NZC sector**

# 3 Part B - Pathway to climate neutrality by 2030

This section represents the central core of the Action Plan in terms of emissions reduction as it includes the essential elements that combine the scenarios, the strategic objectives, the impacts, the portfolio of actions, the indicators for monitoring and evaluating the work of the Administration.

## 3.1 Module B-1 Climate neutrality scenarios and impacts

In order to identify the impact pathways linked to the portfolio of actions, the Theory of Change has been applied, as also suggested by NZC. The ToC started from the so-called causal chain made up of 5 elements at the basis of which there is the identification of a purpose/objective, i.e. a macro action that the Administration or Institution wants to pursue/implement.
The five elements of the causal chain are listed and represented in the figure below:

1) The problem/need is related to the problem that the Administration wants to address and should ideally answer to the question "Why does the project/plan/initiative exist?"
2) The final results are the long-term results; these elements can be quantified through medium-long term KPIs
3) Intermediate results are the most immediate results that the Administration expects in the short term, and that represent a thermometer that detects the progress of the action itself in the long term
4) The products/tools with which the Administration acts
5) The activities that the Administration implements to respond to the need/problem that has emerged.

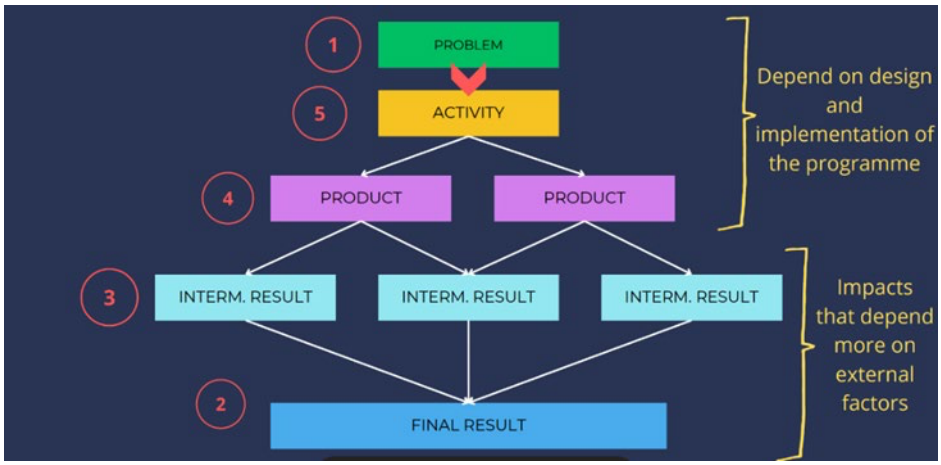


**Figure 9: The five steps of the causal chain in the Theory of Change**

Thanks to a specific two-day intensive workshop on the Theory of Change organized by AESS with an international trainer, expert in ToC, it has been worked on a first application of the ToC by choosing an extremely sensitive problem in the Rome area: the availability of social housing and its upgrade to a good energy efficiency level. Although this issue is part of the municipal agenda, as evidenced by the numerous ongoing redevelopments in the action portfolio, it is not included within the 5 impact pathways discussed and identified directly by the Climate Aim Office and presented in Figures 11-12-13-14-15. Therefore, the impact pathway on the topic of the right to housing serves as a model to exemplify the application of the ToC as presented during the AESS intensive workshop and does not fit within the macro-objectives that the Administration has set to develop in the coming years as strategic for the achievement of the climate neutrality objectives.

The following image shows the result of the analysis based on the previously exposed scheme. The expressed need, which summarizes the "problem/purpose" of the ToC, was identified in the "right to housing", as a practical example discussed during the workshop.

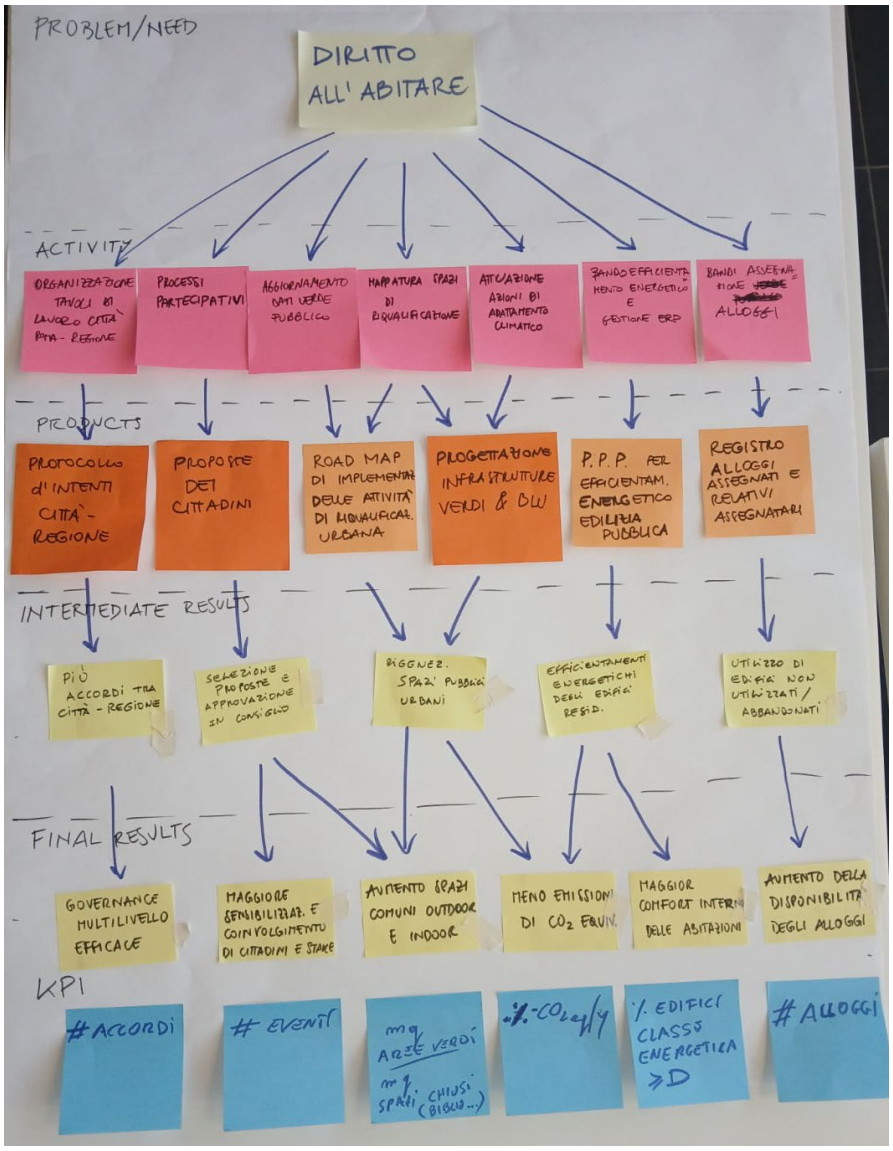


**Figure 10: Theory of Change applied to the "right to housing"**

The issue of the "right to housing" has assumed crucial importance in large cities like Rome in recent years: the lack of housing and the inflationary flare-up that has inflated the cost of rents and sales has posed an important issue for the public administration, not only on the quantity of available accommodations, but also on the energy performance of the buildings. The complexity of the social housing management is given, not only by the high number of accommodations, but also by the plurality of actors involved. Some accommodations are owned by Roma Capitale, others are owned by the Lazio Region and others have, over the years, been redeemed by private owners. The right to housing does not only concern the energy efficiency and maintenance of accommodations, but also the development of neighbouring areas to provide inhabitants with services and green areas. The presence of participatory processes, as well highlighted in module C of the present document, has characterized the development of several projects at local level: this involvement not only makes citizens more responsible but raises their awareness ending up on the proposal of concrete initiatives to be applied in the territory.

The right to housing is part of the broader plan for the urban redevelopment of public spaces which represents a challenge for the Administration.

Based on what presented above, in agreement with the Climate Office and the internal Departments of Roma Capitale, the 5 strategic macro-objectives in 2030, have been defined:

- Electrification and decarbonisation of the territory
- Energy efficiency of civil and industrial buildings
- Sustainable mobility
- Water and waste management
- Development of green heritage

For each of these macro-objectives, an impact pathway has been implemented taking into consideration the systemic levers defined by the Theory of Change according to the scheme previously explained.

In the following figures, each action is traced back to one or more systemic levers (indicated with coloured dots in the following diagrams). The definition of actions has not been intended as exhaustive in defining the objective itself given the complexity and breadth of many of the objectives analysed.

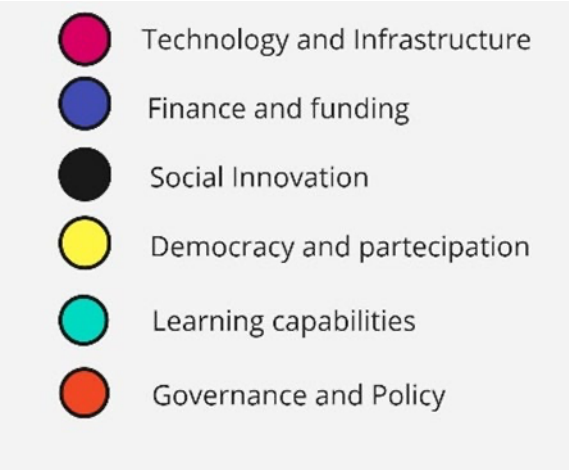


**Figure 11: Systemic levers**

Among the relevant elements of the Theory of Change there is also the identification of **co-benefits**: a clear and complete understanding of the potential collateral benefits and the way in which they are interconnected, can help the Administration to identify indirect impacts and evaluate their effects.

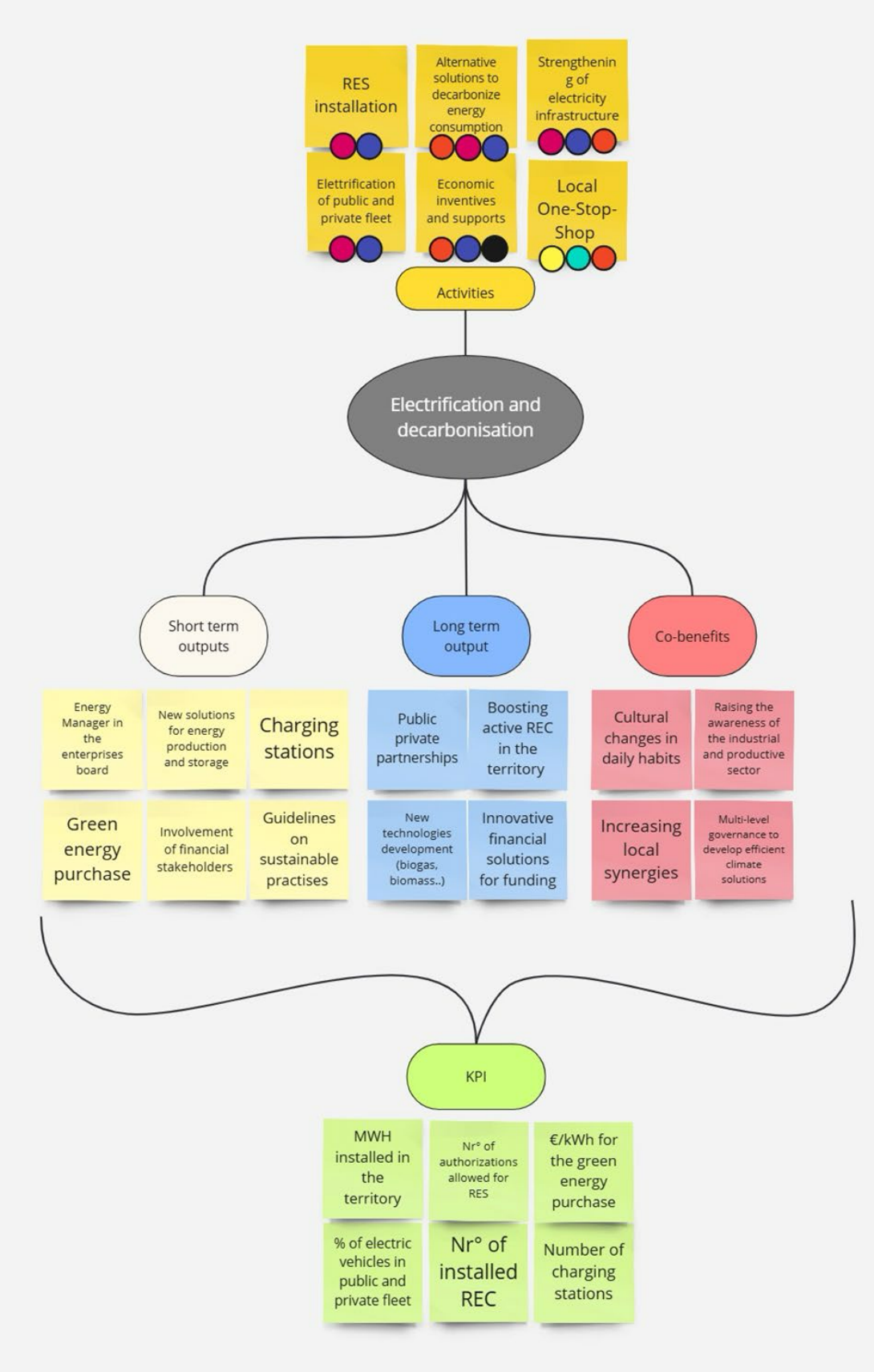


Figure 12: ToC - Electrification and decarbonization

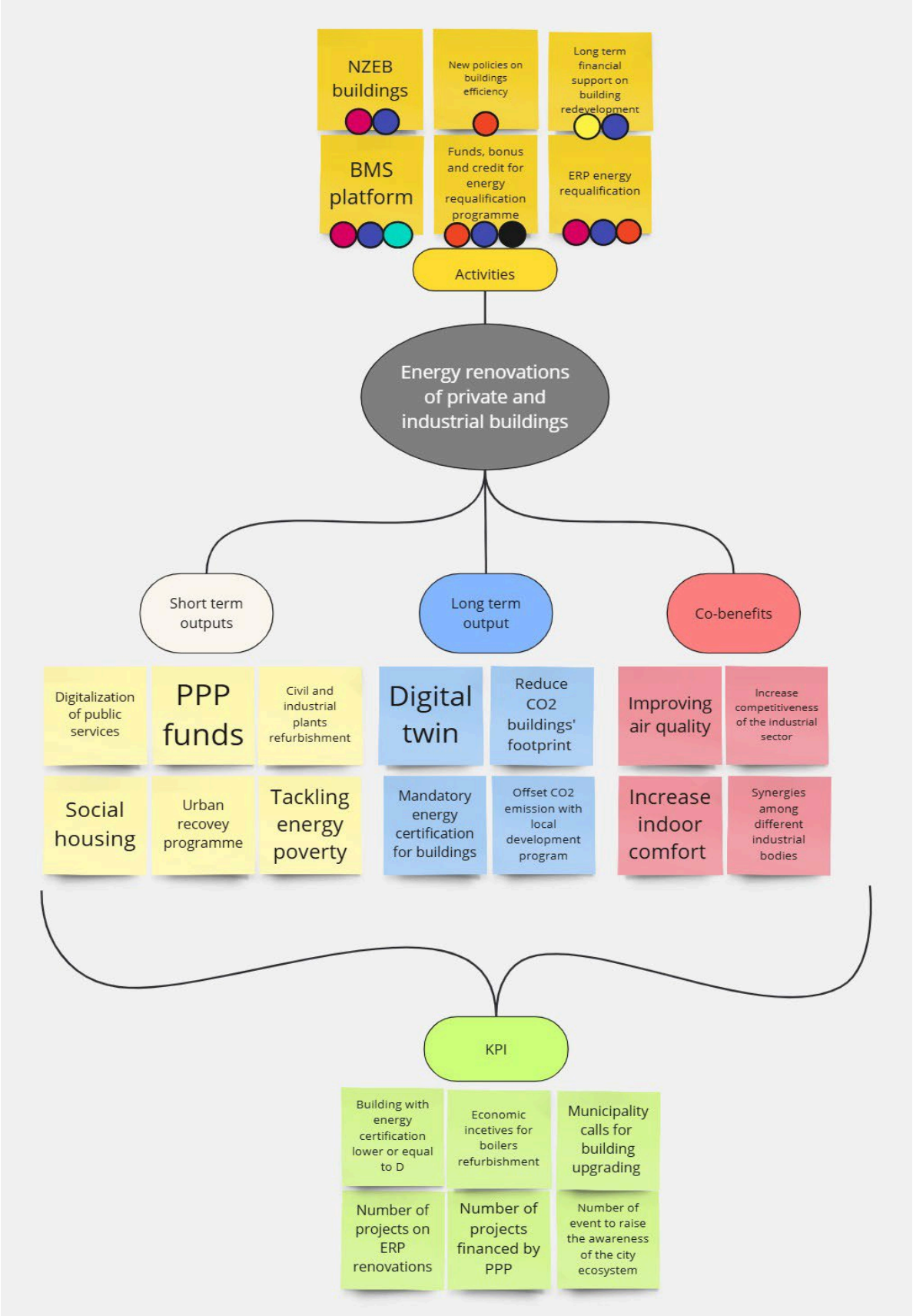


**Figure 13: ToC - Energy renovation of private and industrial buildings**

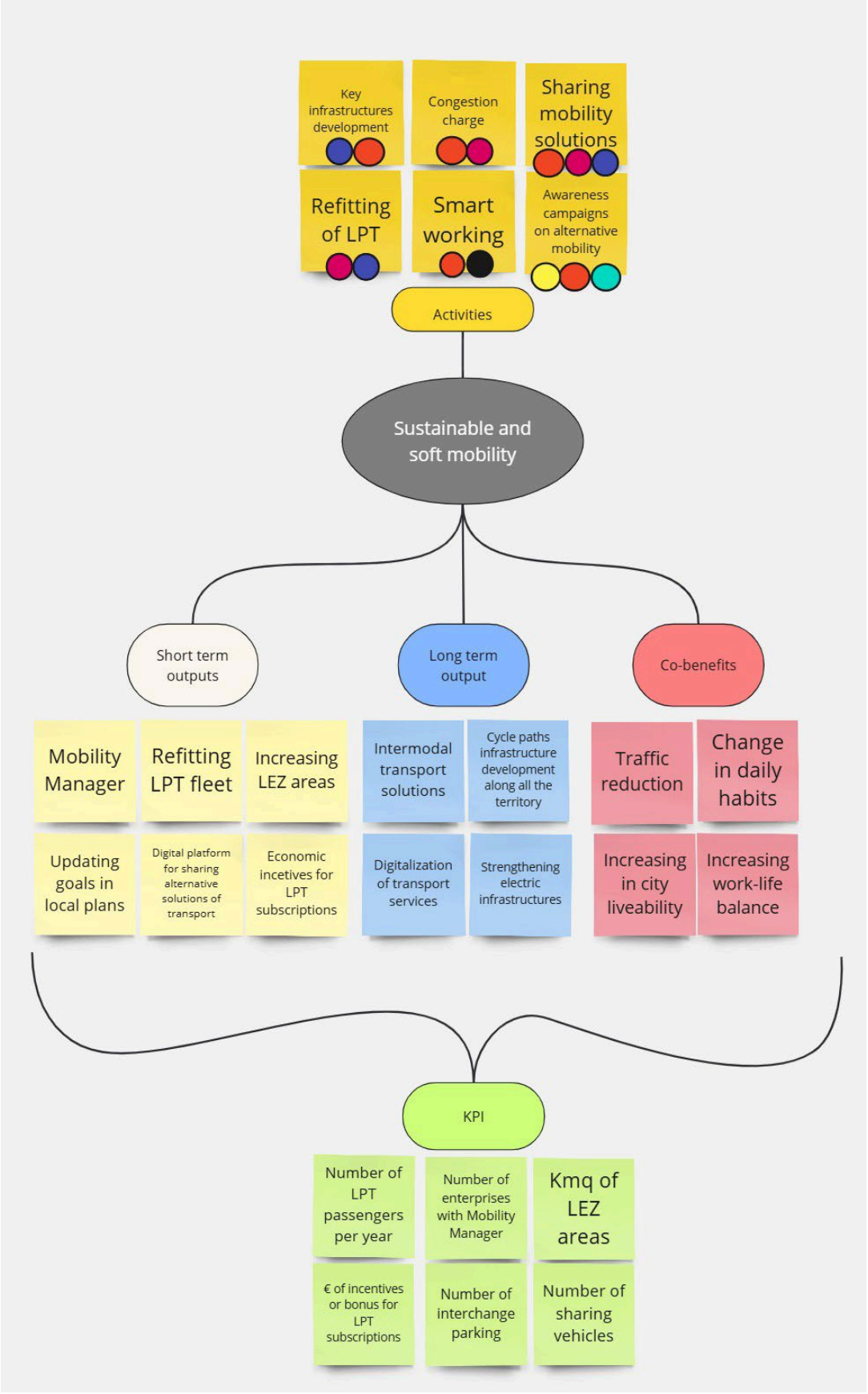


Figure 14: ToC - Sustainable and soft mobility

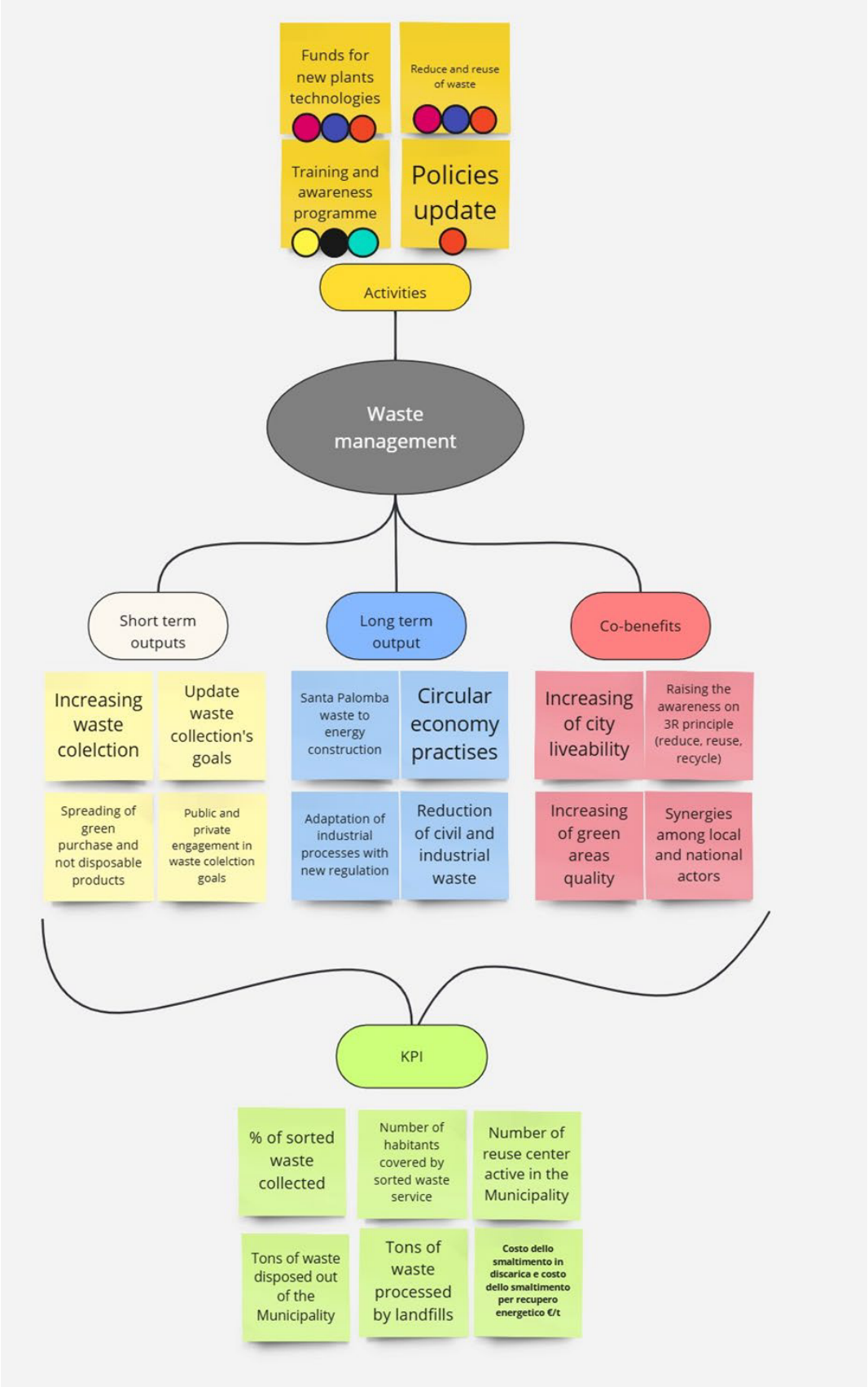


**Figure 15: ToC - Waste management**

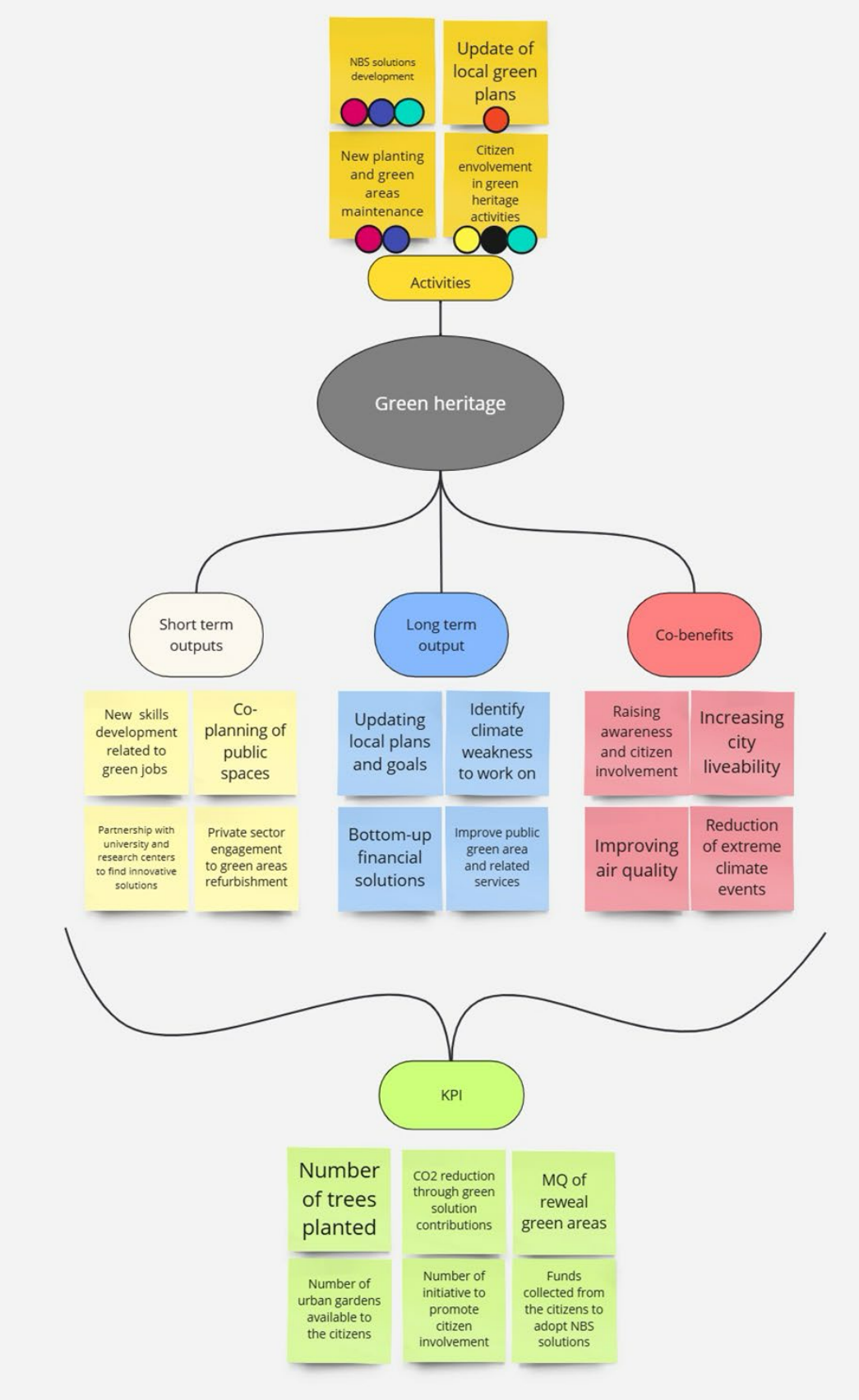


**Figure 16: ToC - Green heritage**

**B-1: Description of Impact Pathways**

The infographics presented highlight the potential macro-actions on which to act, the respective impacts and the ways in which to monitor both qualitatively and quantitatively the initiatives undertaken.
Within the Theory of Change it is important to also highlight the direct impacts that the identified problem/need aims to address and to which Roma Capitale is committed.
In the macro-action relating to the **electrification and decarbonisation** of the territory, the main impacts that the activities implemented by the Administration and the entire urban eco-system want to achieve are:

1) less dependence on non-renewable fossil sources
2) increase local energy production, to achieve energy independence.
3) increase the awareness of citizens and of trade associations on the electrification potential that involves them.

To achieve these objectives, the presence of incentives and information desks is fundamental for transversal involvement and for the diffusion of efficient solutions. The incentives for the installation of new RES plants are fundamental but the indirect advantage on the bill that the individual citizen can obtain through a reconversion of their consumption should not be forgotten. The electrification objectives also concern the conversion of both, public and private fleet, and the implementation of the needed infrastructure.
The increase in electricity consumption raises the issue of the resilience of the national electricity grid at national level: the commitment of Roma Capitale, in synergy with other local administrations, must be in the direction of bringing the issue at a national level.
The action related to the **efficiency of civil and industrial buildings**, defines the following direct impacts:

1) overcoming regulatory constraints for the efficiency of heritage buildings
2) reduction of energy consumption
3) increase in energy production from renewable sources.

Technological innovations, the improvement of materials, the definition of precise standards for efficiency promise great improvements in the coming years in this area which still represents the most relevant sector, in terms of emissions, for the city of Rome (60% of the baseline). The administration, also through raising the awareness of other entities in the private sector and associations, is also heavily investing.
The mobility sector represents the second sector with the highest number of emissions (34% of the total baseline value) in Rome. Therefore, the topic of **sustainable mobility** has a high relevance for the Administration. The direct impacts that Roma Capitale aims for are:

1) reduction of emissions from fossil fuels because of reduced traffic
2) improvement of the LPT offer
3) reduction in private consumption from transport
4) development of sharing economy services.

The Administration is working through awareness campaigns to increase the use of sustainable mobility also by public and private companies. The smart working solutions adopted by various companies have guaranteed an improvement in city livability thanks to a massive reduction in urban traffic. Numerous interventions of great impact are planned considering the events that the city of Rome is preparing to host (Jubilee 2025).

**Water and waste management** is bound to the updating of legislation, not always in line with the modernization of the sector. Among the main impacts in which the Administration is investing are:

1) technological innovations for reducing the impact of emissions
2) reduction of waste sent to landfill

The direct impacts that the Administration expects go in concert with the awareness, training and participation campaigns that it is carrying out (see Module C). These same objectives must involve the private sector equally.

The **green heritage** in the city of Rome necessarily involves the updating of municipal plans: the complexity and heterogeneity of the urban green context requires a broad level of involvement of the public sector to guarantee coherent and long-term development. Among the direct impacts foreseen by the Administration for this macro-action are:

1) reduction of climate change gases and of climate impacts on central urban areas
2) increase in the municipal tree budget and green spaces
3) reduction of the phenomenon of heat waves

The solutions implemented must also include innovative Natural Based Solutions that involve other entities operating in the sector: some of them have presented actions included in the portfolio of this Action Plan.

## 3.2 Module B-2 Design of the Climate Neutrality Portfolio

The Capitoline Administration has been engaged for several years within its municipal territory in the planning and implementation of concrete actions aimed at mitigating climate change emissions through specific plans and strategies, as already exposed in Part A of this document.

The Climate City Contract fits into a context that is already highly aware of the issue at both public and private level. The added value that the Action Plan wants to bring refers to the specific actions that the signatories of the CCC have presented as a contribution to the reduction of emissions in the city of Rome. The objective of this chapter is therefore to highlight the individual actions and expose their main characteristics.

The portfolio of actions is the result of a **co-planning process** initiated by the Climate Office together with the stakeholders, thanks to the Expression of Interest tool, fully described in Module C-1. The involvement work, conducted in a synergic manner among all the actors, led to the identification not only of the actions and impacts on the city, but also of barriers and opportunities that represent key elements for the city's future development vision. The role of the internal departments of Roma Capitale which coordinated the work together with the Climate Office should not be forgotten. Among those who presented significant contributions in the formation of the portfolio, a total of 30 actions and initiatives, there are:

- Department of Environmental Protection
- Department of Heritage and Housing Policies
- Department of Infrastructure Development and Urban Maintenance
- Department of Major Events, Sport, Tourism and Fashion
- Department of Social Policies and Health
- Department of Sustainable Mobility and Transport
- Department of Urban Planning and Implementation

The stakeholder engagement process involved **80 stakeholders** at territorial level who submitted 705 action sheets through the Expression of Interest procedure: **493 actions** emerged from these. The portfolio actions presented by internal stakeholders (Departments of Roma Capitale) are 30, therefore the total number of actions is **523.**

Given the large number of initiatives, a **clustering** of the portfolio's actions was defined to provide greater coherence and to carry out an analysis as coherent as possible with the administration's stated objectives. Here are the **14 action categories** selected from the 5 impact pathways.

1. **RES installations:** initiatives and projects involving the installation of systems based on renewable energy technology, in particular solar photovoltaics, which are planned to be installed both on the roofs of buildings and on the ground; this category also includes interventions that, as part of the establishment of Renewable Energy Communities, envisage the installation of RES.
2. **Electricity infrastructure upgrading and/or efficiency-building:** actions to make electricity infrastructure more efficient and upgrade it, in order to ensure the resilience of the grid and support the electrification process of energy consumption; this category also includes the upgrading of local public lighting.
3. **Green electricity purchase:** actions involving the purchase of electricity with a Guarantee of Origin from renewable sources, to cover part or all of the electricity consumption.
4. **Civil building upgrading/efficiency:** actions to upgrade and improve the energy efficiency of public and private buildings, ERP, university facilities and schools, theatres; among the most relevant interventions are the replacement of methane boilers and refrigeration units, electrification of thermal systems (e.g. heat pumps), relamping of indoor lighting and

interventions to reduce the transmittance of dispersing surfaces (such as thermal insulation and replacement of window frames), to reduce emissions and increase, at the same time, the indoor thermal comfort.

5. **Redevelopment/efficiency of industrial buildings**: actions that include the same energy efficiency measures as those in the civil buildings category but concerning industrial plants.
6. **Energy efficiency of industrial plants and processes:** actions that concern in particular the replacement of electric motors, steam generators, purification plants, the installation of software to manage and control the consumption of production processes and actions to reduce the release of greenhouse gas emissions other than $CO_2$.
7. **Electrification and/or vehicle fleet efficiency:** actions that include the efficiency, with reduced-emission vehicles, or electrification of private company fleets and public transport, the installation of recharging stations, and forms of incentive for the purchase of electric cars and/or the replacement of polluting vehicles.
8. **Sustainable mobility:** this category includes plans for smart working, car sharing and carpooling initiatives, the adoption of an internal mobility manager, projects to raise awareness of the use of local public transport, initiatives to reduce traffic through LTZs/green areas, and the implementation of the cycling route network.
9. **Wastewater/waste treatment:** actions concern initiatives for the valorisation of waste and wastewater, through technologically advanced solutions such as bio-digesters for the production of bio-methane and plants for the recovery of biogas from wastewater, projects for the development of hydrogen from urban waste, the reuse of wastewater and interventions to reduce leaks from the distribution network.
10. **Waste reduction:** Actions cover the adoption of sustainable practices to reduce waste production and the valorisation of waste for new uses, the enhancement of separate waste collection and activities to raise awareness on recovery and reuse.
11. **Green infrastructure:** this category includes actions such as the reforestation of areas of the city, the recovery of abandoned green areas and the planting of trees and shrubs in parks and gardens, also for educational and information/awareness-raising purposes.
12. **Energy Management/Management Systems:** including initiatives for the implementation of company management systems, such as ISO 50001 and 14001, the appointment of the Energy Manager and the drafting of Energy Diagnoses for the purpose of a continuous process of energy efficiency of the building-plant system; also included are actions related to monitoring and reduction of consumption, through IoT platforms, BMS, etc.
13. **Training/awareness-raising:** actions included in this category concern awareness-raising campaigns on environmental and energy issues, training courses, courses and information training projects on environmental sustainability issues, aimed at all segments of the population.
14. **Adaptation:** purely climatic adaptation actions, such as river and coastal embankments, de-paving, reducing the heat island effect, necessary to prepare the territory to face the increase in extreme climatic phenomena.

The table below shows the total number of actions per category of action divided between internal and external stakeholders: a consistent prevalence emerges for the initiatives to upgrade both civil and industrial buildings, including energy efficiency measures. This is followed, in terms of quantity, by training actions and awareness-raising courses aimed at citizens and employees in cross-cutting areas such as sustainable mobility, reuse and recycling, and sustainable energy and resource management.

| Category of action | Number of actions of Municipality Departments | Number of actions of External stakeholder | Total Number of actions |
|---|---|---|---|
| Purchase of green energy | 0 | 20 | **20** |
| Adaptation | 2 | 8 | **10** |
| Energy efficiency of industrial plants and processes | 0 | 13 | **13** |
| Fleet electrification and/or fleet efficiency | 1 | 42 | **43** |
| Energy Management/Management Systems | 0 | 47 | **47** |
| Training/awareness | 0 | 98 | **98** |
| RES plants | 1 | 54 | **55** |
| Green infrastructure | 2 | 16 | **18** |
| Sustainable and soft mobility | 5 | 38 | **43** |
| Electrical infrastructure strengthening and/or optimization | 0 | 12 | **12** |
| Waste reduction | 0 | 29 | **29** |
| Energy renovation/energy efficiency of civil buildings | 18 | 95 | **113** |
| Energy renovation/energy efficiency of industrial buildings | 0 | 7 | **7** |
| Waste/water treatment | 1 | 14 | **15** |
| **Total** | **30** | **493** | **523** |

Table 8: Number of portfolio actions by category

The chart below shows the breakdown of the overall portfolio of actions according to the above categories.

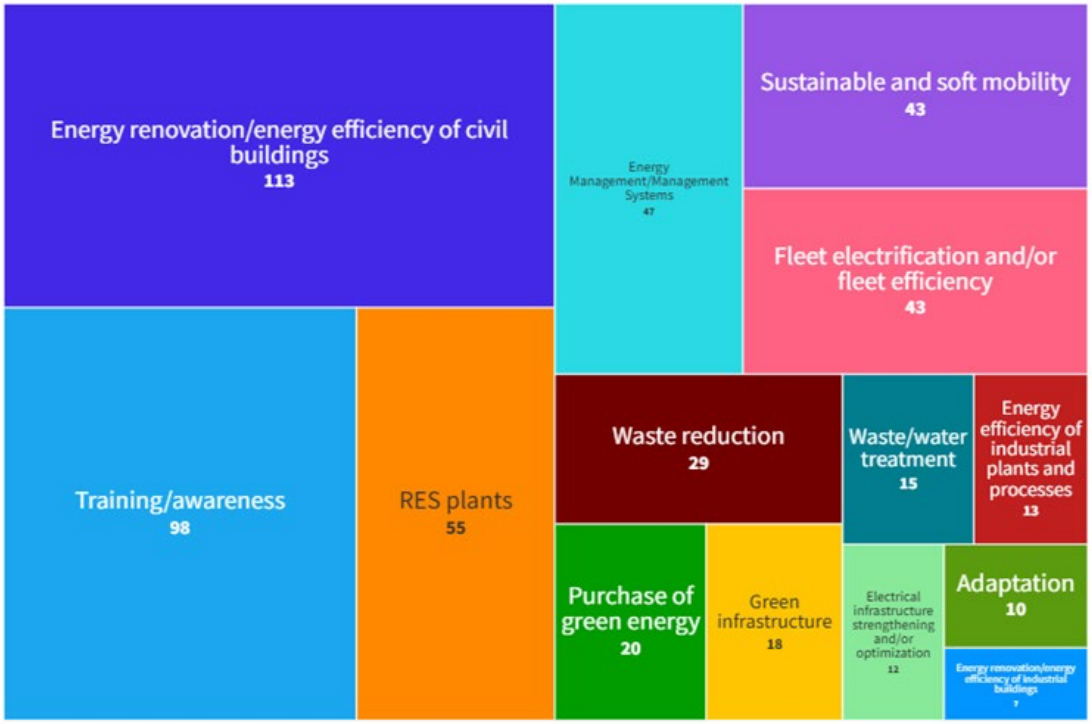


Figure 17: Number of actions per sector

Each individual action was further marked with one of the following attributes:

- Measurable action;
- Behavioural action;
- Guidelines/governance action;
- adaptation action.

Measurable actions are those that are directly quantifiable in terms of climate-changing emissions and/or on an economic level. Behavioural actions, on the other hand, relate to training, information and knowledge enhancement events that can imply changes in life habits and increase sensitivity and awareness towards issues close to the Mission's objectives. Governance actions are those that directly impact the policies, regulations and innovation of governance of the municipal territory. Finally, given the relevance of the topic for the policies and strategies of Roma Capitale, a new category, adaptation, was introduced, in view of the diverse nature of the intervention and type of impact.

Moreover, to complete the contribution of all the stakeholders, the overall 523 actions also include all the actions, named under study, which are currently being defined in terms of modalities and timeframe. In fact, the document's broad time horizon allows it to be considered in all respects as actions that contribute to the reduction of the city's climate-changing emissions, the development of which will be effective in the coming years. The Administration has also included some stakeholders within the Plan whose initiatives impact take place outside the municipal boundary of the CCC. In total, 13 actions have been presented by these stakeholders: the decision to include them is motivated by their relevance, particularly in terms of investment, and by the impact they generate on the municipal territory of Rome. The contribution in terms of $CO_2$eq emissions reduction of these stakeholders has therefore not been accounted for in order to respect the boundaries established for the CCC (geographical boundary of Roma Capitale). The detail of these actions, the proposing stakeholders and their level of impact is reported in the annex in Table B-2.2e.

The following table shows an overview of all **523 actions** contained within the portfolio, classified according to sector and action category. The details of all the actions collected are shown in the annexes following the classification defined below.

| Sector | Category of action | Number of actions | Direct impact (emissions reduction) ton$CO_2$eq/y |
|---|---|---|---|
| **Buildings** | Energy efficiency of industrial plants and processes | 10 | 7,450 |
| | Energy Management/Management Systems | 32 | 2,046 |
| | Training/awareness | 23 | - |
| | RES plants | 55 | 24,318 |
| | Purchase of green energy | 20 | 98,637 |
| | Electrical infrastructure strengthening and/or optimization | 10 | 102 |
| | Energy renovation/energy efficiency of civil buildings | 113 | 48,197 |
| | Energy renovation/energy efficiency of industrial buildings | 7 | 1,979 |
| **Buildings Sector - Total** | | **270** | **182,729** |
| **Transport** | Fleet electrification and/or fleet efficiency | 43 | 34,115 |
| | Energy Management/Management Systems | 1 | - |
| | Training/awareness | 7 | - |
| | Sustainable and soft mobility | 43 | 112,253 |

| Sector | Category of action | Number of actions | Direct impact (emissions reduction) tonCO₂eq/y |
|---|---|---|---|
| | Waste reduction | - | - |
| **Transport Sector - Total** | | **94** | **146,368** |
| **IPPU** | Energy efficiency of industrial plants and processes | 3 | 211 |
| **IPPU Sector - Total** | | **3** | **211** |
| **AFOLU** | Training/awareness | 10 | - |
| | Adaptation | 9 | - |
| | Green infrastructure | 18 | 200 |
| **AFOLU Sector - Total** | | **37** | **200** |
| **Waste** | Energy Management/Management Systems | 3 | - |
| | Training/awareness | 9 | - |
| | Waste reduction | 29 | 82 |
| | Waste/water treatment | 15 | 17,782 |
| **Waste Sector - Total** | | **56** | **17,864** |
| **Cross Cutting** | Energy Management/Management Systems | 11 | - |
| | Electrical infrastructure strengthening and/or optimization | 2 | - |
| | Adaptation | 1 | - |
| | Training/awareness | 49 | - |
| **Cross Cutting Sector - Total** | | **63** | **-** |
| **TOTAL** | | **523** | **347,372** |

**Table 9: Overview of the actions contained in the portfolio**

As expressed in the table, the total contribution collected by the actions proposed by both external stakeholders and internal Departments of the Administration, in terms of emission reductions on yearly basis, amounts to **347,372 $tCO_2eq$**.

The graphs presented below aim to visually summarise the results indicated in the table. The following figures show the breakdown, by sectors and categories, of the actions and emission reductions (expressed in $CO_2eq$) overall collected within the portfolio.

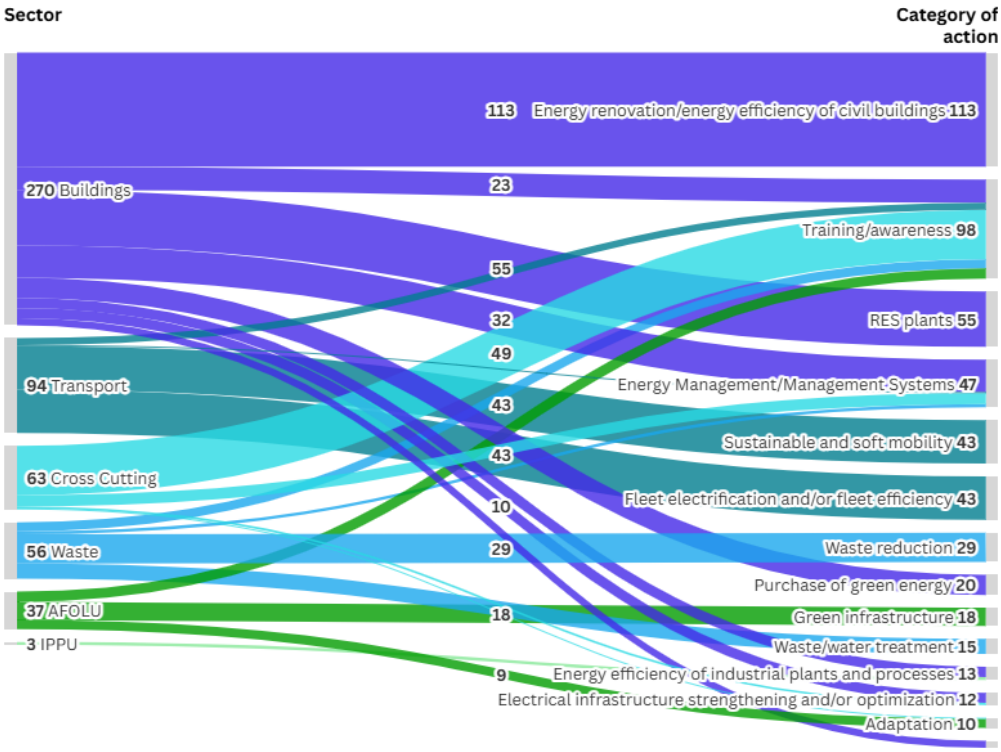


Figure 18: Correlation between sector and category through the number of actions

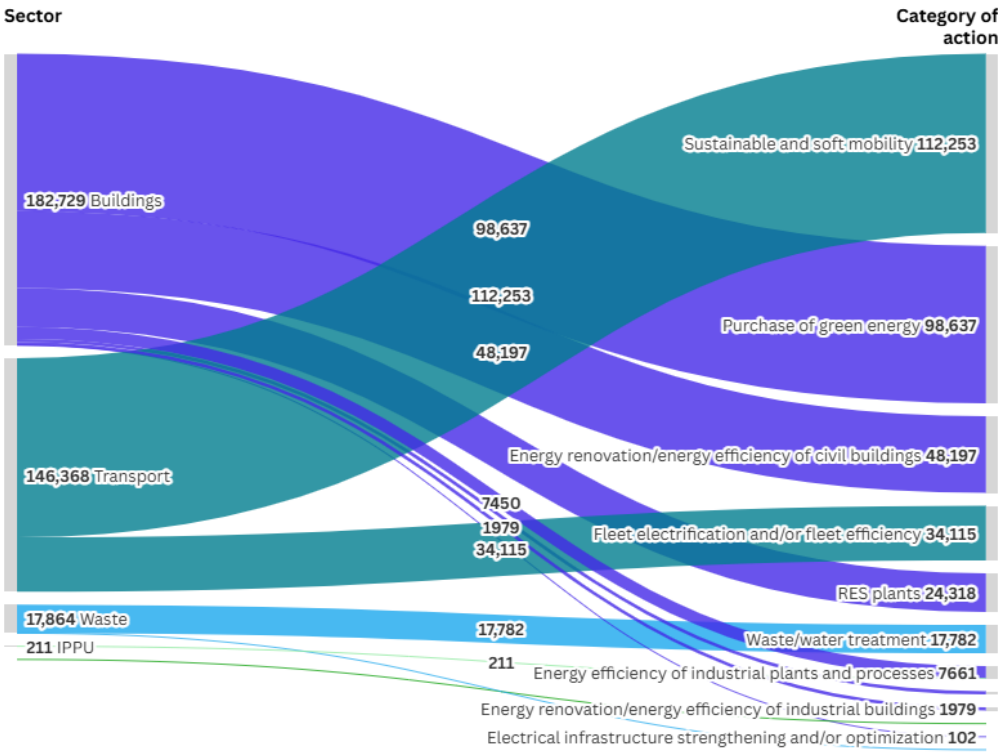


Figure 19: Correlation between sector and category through emission reductions

For a complete view of the individual portfolio actions, please refer to the annexes, where all details are provided as specified:

- **Annex 1 - Table B-2.1:** description of all the **523 actions** collected within the portfolio, grouped by sector.
- **Annex 2 - Table B-2.2a**: detail of implemented, in progress or approved measurable actions collected within the portfolio, grouped by sector.
- **Annex 3 - Table B-2.2b**: detail of under study measurable actions.
- **Annex 4 - Table B-2.2c**: detail of behavioural and guideline actions.
- **Annex 5 - Table B-2.2d**: detail of adaptation actions.
- **Annex 6 - Table B-2.2e**: detail of actions outside the perimeter of Rome.

In the attached tables, for each action there is evidence of the proposing stakeholder, the reference sector, the category, the $CO_2$eq reduction value, the timing and the systemic levers on which the intervention acts. The value reported in the "$CO_2$eq emission reduction" column therefore follows the methodology which, starting from the activity data made available by the stakeholders, expresses the contribution of the individual action to the reduction of baseline emissions based on the conversion factors already explained in Module A. In some cases, the $CO_2$eq reduction value reported by the stakeholder was directly entered, once the calculation methodology used had been verified. Whenever it was not possible to calculate the $CO_2$eq value, the indication “N.A.” (or “-”) is reported: in this case, the specific value was not made available by the relevant stakeholder, but the action was still considered being relevant on other aspect (e.g. citizen involvement, sector of interest, etc.). Monitoring these projects in 2030 will, if possible, highlight this more precisely soon. The value of the investment per single action of the stakeholders is not reported in this document but it will be specified in the Investment Plan.

The tables below summarise the reduction of $CO_2$eq emissions, grouped by type of action, as subsets of the 523 actions:

- **296 measurable actions** (see table below) implemented or being implemented by external stakeholders and municipal departments, with the largest overall contribution in terms of yearly emission reductions, amounting to **323,895 $tCO_2eq$**. Correspondingly, details of each individual action can be found in **Annex 2 - Table B-2.2a.**

| Sector | Category of action | Number of actions | Direct impact (emissions reduction) $tonCO_2eq/y$ |
|---|---|---|---|
| Buildings | Energy efficiency of industrial plants and processes | 9 | 7,288 |
| | Energy Management/Management Systems | 9 | 2,046 |
| | Training/awareness | 1 | - |
| | RES plants | 41 | 10,669 |
| | Purchase of green energy | 20 | 98,637 |
| | Electrical infrastructure strengthening and/or optimization | 5 | 102 |
| | Energy renovation/energy efficiency of civil buildings | 102 | 38,591 |
| | Energy renovation/energy efficiency of industrial buildings | 6 | 1,979 |
| **Buildings Sector - Total** | | **193** | **159,312** |
| Transport | Fleet electrification and/or fleet efficiency | 38 | 34,054 |
| | Sustainable and soft mobility | 26 | 112,253 |
| **Transport Sector - Total** | | **64** | **146,307** |
| IPPU | Energy efficiency of industrial plants and processes | 2 | 211 |

| Sector | Category of action | Number of actions | Direct impact (emissions reduction) tonCO₂eq/y |
|---|---|---|---|
| **IPPU Sector - Total** | | **2** | **211** |
| **AFOLU** | Training/awareness | 1 | - |
| | Green infrastructure | 15 | 200 |
| **AFOLU Sector - Total** | | **16** | **200** |
| **Waste** | Energy Management/Management Systems | 1 | - |
| | Waste reduction | 7 | 82 |
| | Waste/water treatment | 12 | 17,782 |
| **Waste Sector - Total** | | **20** | **17,864** |
| **Cross Cutting** | Electrical infrastructure strengthening and/or optimization | 1 | - |
| **Cross Cutting Sector - Total** | | **1** | **-** |
| **TOTAL** | | **296** | **323,895** |

Table 10: Overview of the measurable actions realised or in progress

- **40 measurable under study actions** (see table below) that will be implemented by external stakeholders and municipal departments in the coming years, with an overall contribution in terms of yearly emission reductions, amounting to **23,478 tCO₂eq**. Correspondingly, details of each individual action can be found in **Annex 3 - Table B-2.2b.**

| Sector | Category of action | Number of actions | Direct impact (emissions reduction) tonCO₂eq/y |
|---|---|---|---|
| **Buildings** | Energy efficiency of industrial plants and processes | 1 | 161 |
| | RES plants | 14 | 13,649 |
| | Electrical infrastructure strengthening and/or optimization | 5 | - |
| | Energy renovation/energy efficiency of civil buildings | 10 | 9,606 |
| | Energy renovation/energy efficiency of industrial buildings | 1 | - |
| **Buildings Sector - Total** | | **31** | **23,417** |
| **Transport** | Fleet electrification and/or fleet efficiency | 4 | 61 |
| **Transport Sector - Total** | | **4** | **61** |
| **AFOLU** | Green infrastructure | 2 | - |
| **AFOLU Sector - Total** | | **2** | **-** |
| **Waste** | Waste reduction | 1 | - |
| | Waste/water treatment | 1 | - |
| **Waste Sector - Total** | | **2** | **-** |
| **Cross Cutting** | Electrical infrastructure strengthening and/or optimization | 1 | - |
| **Cross Cutting Sector - Total** | | **1** | **-** |
| **TOTAL** | | **40** | **23,478** |

Table 11: Overview of measurable action under study

- **177 behavioural and guideline actions** (see table below), ongoing actions whose referents are either external stakeholders or municipal departments. For these actions it was not

possible to estimate a point in time $CO_2$eq reduction per individual action. Details of each individual action can be found in **Annex 4 - Table B-2.2c.**

| Sector | Category of action | Number of actions |
|---|---|---|
| **Buildings** | Energy Management/Management Systems | 23 |
| | Training/awareness | 22 |
| | Energy renovation/energy efficiency of civil buildings | 1 |
| **Buildings Sector - Total** | | **46** |
| **Transport** | Fleet electrification and/or fleet efficiency | 1 |
| | Energy Management/Management Systems | 1 |
| | Training/awareness | 7 |
| | Sustainable and soft mobility | 17 |
| **Transport Sector - Total** | | **26** |
| **IPPU** | Energy efficiency of industrial plants and processes | 1 |
| **IPPU Sector - Total** | | **1** |
| **AFOLU** | Training/awareness | 9 |
| | Green infrastructure | 1 |
| **AFOLU Sector - Total** | | **10** |
| **Waste** | Energy Management/Management Systems | 2 |
| | Training/awareness | 9 |
| | Waste reduction | 21 |
| | Waste/water treatment | 2 |
| **Waste Sector - Total** | | **34** |
| **Cross Cutting** | Energy Management/Management Systems | 11 |
| | Adaptation | 49 |
| **Cross Cutting Sector - Total** | | **60** |
| **TOTAL** | | **177** |

Table 12: Overview of behavioural and policy actions

- The **10 adaptation actions**, described within section B-2.3 - Strategies for reducing residual emissions. Details of each individual action can be found in **Annex 5 - Table B-2.2d.**

The results presented so far refer exclusively to the contribution of **the actions collected by the stakeholders** who signed the document and by the internal departments of the Administration of Roma Capitale. Their involvement represents an important piece in the path that the city of Rome has undertaken to achieve climate neutrality, but it is not the only contribution that goes to determine the actual achievement of the objective.

The **strategic lines** that Roma Capitale proposes to implement with a 2030-time horizon represent a fundamental step in the path towards the neutrality of the entire municipal territory. These strategies have been divided into two blocks, **CCC Strategies** and **Enhanced CCC Strategies**, on the basis of the different effort required for the objectives of these scenarios to be fully achieved.

At the end of the analysis, the final graph will show the overall emission reduction result, which integrates all the elements analysed so far, namely:

- The **existing plans** and their contribution in terms of reduction (SECAP, Climate Plan, Waste Plan, SUMP) already set out in Part A of the document.

- The contribution of **the local ecosystem** following the involvement of local stakeholders in the pathway, analysed in Part B, with details of individual actions in the annexes.
- The **CCC strategies** identified by the Capitoline Administration and analysed and estimated by AESS which, following a calculation methodology consistent with the literature and the sector, estimated their impact in reducing emissions. The Table 13 summarises the 11 strategic actions, highlighting a brief description for each, the reference sector and the methodology adopted to calculate the $CO_2$eq reduction estimate. More details on the calculation estimate are provided in the following paragraphs.
- The **enhanced CCC strategies**, corresponding to 5 strategies, already presented in the previous section, to which a more ambitious target has been associated, estimated by taking into consideration interventions on a wider basin of buildings and land, made possible if action is taken by building a strong institutional collaboration between Roma Capitale, the Lazio Region and the State. Table 14 summarises the 5 strategic actions, highlighting a brief description for each, the reference sector and the methodology adopted to calculate the $CO_2$eq reduction estimate. More details on the calculation estimate are provided in the following paragraphs.

| Strategy | Brief description | Sector | Net emissions reduction [$tCO_2eq/y$] |
|---|---|---|---|
| Photovoltaic installations on buildings | Installation of additional photovoltaic power on the roofs of buildings in the municipal area of Rome; to estimate this strategy, it was assumed the installation of 60% of the total additional potential (approximately 1,600 MWp) | Buildings | 582,140 |
| Photovoltaic installations on canopies in parking lot | Installation of additional photovoltaic power on shelters in car parks in the municipal area of Rome; to estimate this strategy, it was assumed the installation of 60% of the additional potential on total shelters (approximately 60 MWp) | Buildings | 22,167 |
| Agri-voltaic | Hypothesis of installation of 1 GWp of agri-voltaic power in the municipal area of Rome; to estimate this strategy it was assumed to install 50% of the above potential (about 500 MWp). This installed power would occupy a total agricultural area of 7.9 km², which means the 0.6% of the total municipal territory of Rome | Buildings | 200,000 |
| Energy renovation of residential buildings | Energy renovation of private residential buildings through interventions on building envelope and heating systems. In this strategy, interventions to improve the efficiency and electrification of the heating systems were mainly considered (on approximately 80% of the buildings), while interventions on the thermal insulation were considered only on a low percentage of the buildings (approximately 20%). | Buildings | 486,670 |
| Energy renovation of social housing | Energy renovation of public residential buildings through interventions on building envelope and heating systems. In this strategy, interventions to improve the efficiency and electrification of the heating systems were mainly considered (on approximately 80% of condominiums), while interventions on the thermal insulation were considered only on a low percentage of buildings (approximately 20%). | Buildings | 38,171 |
| Energy efficiency improvements of tertiary sector buildings and headquarters | Reduction of consumption of methane, fuel oil and diesel in the sector through interventions on the building thermal insulation, on the systems and on the electrification of overall consumption (forecasts: Lazio Regional Energy Plan) | Buildings | 150,420 |
| Energy efficiency improvements of industrial sector | Reduction of consumption of methane, fuel oil and diesel in the sector through interventions on the building thermal insulation, on the systems and on the electrification of overall consumption (forecasts: Lazio Regional Energy Plan) | Buildings | 102,124 |
| Electrification of the vehicle fleet | Forecasts of the active electric vehicle fleet in the area by 2030 and the consequent change in terms of annual emissions (PNIEC forecasts), following an ever-increasing spreading of electric vehicles | Transport | 231,030 |
| Smart working | Reduction in fuel consumption resulting from reduction in working travel. The following hypotheses were considered: 2 days/week of smart working for all public and private employees; vehicle fleet by 2030 (already electrified based on the previous action) | Transport | 304,478 |
| Purchase of electricity with certified guarantee of origin for the tertiary sector | Purchase of electricity from renewable sources (GOs) to cover a portion of the sector's total electricity consumption (40% of total consumption); the data is calculated net of CCC stakeholder actions relating to purchases of green certified electricity among the tertiary sector actors. | Buildings | 418,720 |
| Purchase of electricity with certified guarantee of origin for the industrial sector | Purchase of electricity from renewable sources (GOs) to cover a portion of the sector's total electricity consumption (40% of total consumption); the data is calculated net of CCC stakeholder actions related to purchases of green certified electricity among the industrial actors | Buildings | 31,441 |

Table 13: CCC strategies for achieving climate neutrality

| Enhanced Strategy | Brief description | Sector | Net emissions reduction [$tCO_2eq/y$] |
|---|---|---|---|
| Photovoltaic installations on buildings | Installation of additional photovoltaic power on the roofs of buildings in the municipal area of Rome; to estimate this strategy, it was assumed the installation of 40% of the total additional potential (approximately 1,100 MWp) | Buildings | 388,093 |
| Photovoltaic installations on canopies in parking lot | Installation of additional photovoltaic power on shelters in car parks in the municipal area of Rome; to estimate this strategy, it was assumed the installation of 40% of the additional potential on total shelters (approximately 40 MWp) | Buildings | 14,778 |
| Agri-voltaic | Hypothesis of installation of 1 GWp of agri-voltaic power in the municipal area of Rome; to estimate this strategy it was assumed to install 50% of the above potential (about 500 MWp). This installed power would occupy a total agricultural area of 7.9 km², which means the 0.6% of the total municipal territory of Rome | Buildings | 200,000 |
| Energy renovation of residential buildings | Energy renovation of private residential buildings interventions on the thermal insulation, to reduce the transmittance of the dispersing walls. In this strategy, interventions on the casing (insulation of vertical and horizontal surfaces, fixtures, etc.) were considered in 30% of the buildings | Buildings | 264,450 |
| Energy renovation of social housing | Energy renovation of public residential buildings interventions on the thermal insulation, to reduce the transmittance of the external walls. In this strategy, interventions on the casing (insulation of vertical and horizontal surfaces, fixtures, etc.) were considered in 30% of the condominiums | Buildings | 20,661 |

Table 14: Enhanced CCC strategies for achieving climate neutrality

- **Growth in renewable energy production**

As far as renewable energy sources are concerned, the growth of solar photovoltaic systems continues, with a strong acceleration of installations in recent years: from 13,007 systems installed at the end of 2019, the base inventory year, with a total capacity of 160 MW, to 21,846 as of December 2023 (GSE data), for a total of 230 MW, of which about 60% installed on the roofs of the city's buildings. In addition, the city can count on the contribution of hydroelectric plants, such as the barrier on the Tiber River at Castel Giubileo, with an installed power of 17 MW, as well as smaller plants installed on the aqueduct network. As far as buildings owned by the municipal administration are concerned, a total of 1.92 MW of photovoltaic systems are currently installed on schools, offices and other facilities, for a total of 163 buildings. Projects underway thanks to the contribution of the NRP and European, regional and national resources will allow 10 MW to be installed by 2026, to which will be added Project Financing projects proposed by private actors on Roma Capitale facilities.

In spite of the exponential growth of photovoltaics in recent years, as the above stated data show, driven in particular by the residential and industrial sectors, the production of renewable energy in the Rome area is still insufficient to cover a significant share of electricity consumption.

The 2030 strategy aims at a strong growth in the installation of solar photovoltaic systems, favoured by the potential of the Roma Capitale territory, not only for the considerable availability of covered areas, but also for the presence of numerous large parking areas (photovoltaic on shelters) and for the large extension of agricultural land, where it is possible to integrate agri-voltaic plants. The goal is to valorise the different configurations of installations that are competitive today: in self-consumption to serve activities and households, for sale to the grid or (for large plants) through Power Purchase Agreement models; in shared energy configurations, such as Energy Communities (with respect to which a specific

regulation has been approved for promotion) and Collective Self-consumption. In 2024, Roma Capitale approved a Regulation for the creation of Solidarity Energy Communities on plants and roofs owned by the Municipality for Third Sector entities and a simplification for the installation of solar energy on roofs in the Technical Implementation Regulations of the Town Planning Regulations.

A specific study, prepared for the Climate City Contract by AESS, **identified the potential of solar photovoltaic systems that could be installed in the territory of the Municipality of Rome**. The activity is part of the strategies of Rome for the medium-long term relating to the production and use of renewable electricity. The knowledge of the photovoltaic potential, in terms of kWp, and the most suitable solutions of installations, is a great opportunity for a further broad development of this renewable source in the municipal area.

The results show a **theoretical potential for photovoltaic installation on building roofs** of about 3.4 GWp which corresponds, considering an average annual producibility of 1,250 kWh/kWp, to an energy production of approximately 4.2 TWh/y. The estimate of the potential for installing photovoltaic systems on roofs within Rome starts from the analysis conducted on the total surface area of the roofs of the buildings in the municipal territory, which can be classified mainly into residential, tertiary and industrial. These results were obtained by identifying the surfaces potentially available for the installation of photovoltaic systems and applying appropriate coefficients obtained empirically or analytically. For the purpose of estimating only the **additional potential of photovoltaics on buildings**, the following contributions were subtracted from the result of the aforementioned study: the installed power as of 2019 (CCC baseline year), the installed power between 2020 and 2023, falling almost exclusively under the Superbonus, and what has already been defined by the SECAP and stakeholder actions in terms of installation of rooftop photovoltaic systems. The additional potential obtained is **2.7 GWp**, with an expected annual production of over 3.4 TWh. Within the CCC strategy, 60% of the total additional potential was assumed to be installed, corresponding to about 1.6 GWp of power and an estimated annual production of about 2.1 TWh/y of electrical energy.

Within the above-mentioned study, the **photovoltaic potential on canopy** in the largest parking areas was also evaluated. Parking areas serving shopping centres, hospitals and universities as well as interchange car parks were analysed. The results were obtained by assessing the suitability of the car parks to accommodate photovoltaic shelters (conformation, presence of trees, etc.), and simulating the coverage of parking spaces with shelters for each of them. The analysis resulted in the identification of 93 large car parks considered suitable for photovoltaic covers. The potential obtained is approximately **101 MWp**, with an expected annual production of 130 GWh (producibility of 1,287 kWh/kWp). Within the CCC strategy, 60% of the total additional potential was assumed to be installed, corresponding to about 60 MWp of installed capacity and an estimated annual production of about 78 GWh of electricity.

Finally, given the large size of the municipal territory, 1,287 km², of which more than 75% is unconsumed land, assessments were made of the **potential of agri-voltaic** that can be integrated into the agricultural surface. With regard to the CCC strategy, the installation of about 500 MWp of agri-voltaic capacity was assumed, with an estimated annual production of about 700 GWh, which corresponds to 200,000 $tCO_2eq$ in terms of reducing climate-changing emissions. This power would occupy an agricultural area of 7.9 square kilometre, equal to 1.2% of the total agricultural territory, and 0.6% of the entire municipal territory of Rome.

The contributions in terms of GHG emission reduction of the CCC strategies described above are summarised here:

- **Photovoltaic installations on buildings: 582,140 $tCO_2eq/y$**
- **Photovoltaic installations on canopies in parking lot: 22,167 $tCO_2eq/y$**
- **Agri-voltaic: 200,000 $tCO_2eq/y$**

In view of achieving more ambitious results, in line with the target of an 80% reduction of climate-changing emissions, further growth of photovoltaics in Rome was evaluated through the development of three enhanced CCC strategies. The following assumptions were used for these analyses: installation of the remaining 40% of the total additional photovoltaic potential on roofs (approx. 1,100 MWp for a production of 1.4 TWh/y); installation of the remaining 40% of the photovoltaic potential on carport roofs (approx. 40 MWp); doubling of the installed capacity of agri-voltaic plants (this enhanced strategy includes only the additional quota, an additional 500 MWp), which means the total occupation of 2.4% of the total agricultural area of the municipal territory of Rome.

The contributions in terms of GHG emission reduction of the enhanced CCC scenarios, to be added to the CCC scenarios described above, are summarised here:

- **Photovoltaic installations on buildings: 388,093 $tCO_2eq/y$**
- **Photovoltaic installations on canopies in parking lot: 14,778 $tCO_2eq/y$**
- **Agri-voltaic: 200,000 $tCO_2eq/y$**

The analyses described above have been developed using a precautionary approach: no photovoltaic systems have been installed within the UNESCO Perimeter and, to a limited extent, on the roofs of buildings in the areas included in the Quality Charter; only the most extensive car parks have been taken into consideration; the occupation of agricultural areas with agri-voltaic systems has been assumed not to exceed 1.5% of the territorial extension of the Municipality of Rome.

- **Residential building efficiency and electrification of thermal systems**

In Rome in recent years, several **energy requalification interventions of private residential buildings** have been carried out that have had access to state tax deductions. In particular, the **Superbonus** has been the starting point for a massive energy renovation of the residential building stock of Rome, a fundamental turning point in order to reduce energy consumption in one of the most impactful sectors, in terms of carbon footprint.

A specific study, elaborated for the Climate City Contract by Enea[7], estimates that with the Superbonus incentive, energy requalification interventions have been carried out in the period 2021-2024 on 6,896 buildings, of which 2,522 condominiums, for a total investment of approximately 3.55 billion euros and a reduction of at least two energy classes. In addition, 8,158 photovoltaic systems were installed as part of the Superbonus incentive, with a total capacity of 51.2 MWp. As far as the Ecobonus incentive is concerned, ENEA's estimate refers to about 156,700 energy efficiency interventions carried out in the 2020-2023 period, equal to over 1.1 billion euros. Moreover, about 150 schools, and over 1,000 public social housing units, libraries, theatres, and museums are undergoing energy requalification interventions with resources from the Recovery Plan, state, regional, and municipal funds.

These results show the extent to which the measures are being implemented and serve as a starting point for future projections and scenarios. In fact, Roma Capitale's 2030 strategy aims to consolidate the process of energy efficiency in municipal buildings through: the insulation of building envelopes, the electrification of heating systems, the implementation of energy consumption management systems, the installation of renewable energy systems integrated with storage batteries. These processes, now underway for some time and increasingly widespread, will play a strategic role in the decarbonisation of Roma Capitale, given that the largest share of the capital's emissions comes from this sector.

The objective is to ensure NZEB (Near Zero Energy building) or ZEB (Zero energy building) performance in urban regeneration processes, pursuant to the new European Directive on Energy Efficiency in Buildings (EPBD), while at the same time accelerating the energy redevelopment of public and private building stock, with well-defined performance targets to be achieved in reducing consumption and

[7] National Agency for new technologies, energy and sustainable economic development

emissions. The Municipality's Building Regulations are being revised to accelerate and incentivise climate mitigation and adaptation measures. The aim is to progressively eliminate the use of fossil fuels for domestic heating (starting with the most energy-intensive buildings and where it is technically feasible), replacing them with integrated systems consisting of heat pumps or other efficient heating systems, low-enthalpy geothermal systems and photovoltaic systems for self-consumption or within energy communities.

As far as the buildings owned by Roma Capitale are concerned, the objective is to achieve the progressive decarbonisation of the entire heritage, using intervention models involving public-private partnerships for the implementation of energy upgrading and management through EPCs (Energy Performance Contracts), the electrification of heating systems, self-production through photovoltaic systems integrated, wherever possible, with geothermal systems, and the purchase of electricity from renewable sources with a guarantee of origin.

With regard to the **energy renovation of Rome's residential building stock**, both public and private, through interventions on the envelope (reduction of transmittances), and the efficiency/electrification of thermal systems, a study was carried out in order to estimate the potential for intervention by 2030 in terms of reducing energy consumption and, consequently, $tCO_2eq$ emissions. In particular, in order to elaborate the CCC strategies, in line with the objectives of the 2023 Climate Plan, interventions on the efficiency and/or electrification of thermal systems were mainly considered (on about 80% of the buildings), while only on a small percentage of the buildings were hypothesised interventions on the envelope (about 20%). Through the implementation of these interventions, an estimated reduction in primary energy consumption of more than 2,700 TWh/y would be achieved between private and public residential buildings - ERP. The contributions in terms of GHG emission reduction of the CCC strategies described above are summarised below:

- **Energy renovation of residential buildings: 486,670 $tCO_2eq/y$**
- **Energy renovation of social housing: 38,171 $tCO_2eq/y$**

With a view to achieving more ambitious results in line with climate neutrality goals, further potential for energy efficiency in public and private residential buildings was evaluated through the development of two enhanced CCC strategies. To develop these strategies, only interventions on the envelope (thermal insulation, insulation of vertical and horizontal surfaces, fixtures, etc.) were considered on a further 30% of buildings, resulting in an additional reduction in primary energy consumption estimated at around 1,600 TWh/y (between private and ERP). In terms of reducing greenhouse gas emissions, the following results are obtained:

- **Energy renovation of residential buildings: 264,450 $tCO_2eq/y$**
- **Energy renovation of social housing: 20,661 $tCO_2eq/y$**

- **Decarbonisation tertiary and industry sector**

As regards, on the other hand, the energy efficiency of buildings in the tertiary and industrial sectors, an analysis was made starting from the forecasts of changes in energy consumption to 2030 reported in the Lazio Regional Energy Plan[8]. With regard to the aforementioned sectors, a gradual reduction in the consumption of fossil fuels for heating, up to about 50% of the current ones, and an increase of a few percentage points in the consumption of electrical energy (more marked in the industrial sector) is expected by 2030. In particular, the reduction in the consumption of methane, fuel oil and diesel oil will mainly be the consequence of interventions on the envelope, for the insulation of dispersing surfaces, and the electrification of thermal systems, while the consumption of electrical energy will increase slightly due to the effect of electrification processes, despite the associated interventions of relamping lighting

[8] Link: https://www.regione.lazio.it/cittadini/tutela-ambientale-difesa-suolo/piano-energetico-regionale-per-lazio

and making refrigeration units more efficient. The results in terms of climate-altering emission reduction are summarised below:

- **Energy efficiency improvements of tertiary sector buildings and headquarters: 150,420 $tCO_2eq/y$**
- **Energy efficiency improvements of industrial sector: 102,124 $tCO_2eq/y$**

- **Integrated and zero emission mobility**

In Rome, as part of the Sustainable Urban Mobility Plan (SUMP), interventions on public transport are planned and currently underway, which aim to increase rail public transport and electrify road transport, through some actions: such as completion of Metro C, new tram lines, purchase of electric buses, increase in tram convoys and metro trains. Furthermore, actions are planned to increase soft mobility, such as the creation of new cycle paths, and a limited traffic zone within the so called "Green Area". The strategy for 2030 aims at an increasingly integrated, electric, sustainable mobility offer, continuing in the direction set by the SUMP of strengthening the rail public transport system with connections in every urban area, the progressive electrification of all roads public transport and the use of zero-emission systems, the extension of the network of cycle paths, pedestrian areas and 30 km/h zones. The city-wide sharing mobility offer of bicycles, scooters, electric cars, the presence of charging stations for electric vehicles, the integrated mobility offer through the digitisation of data as envisaged by the MaaS project will be extended to the entire built-up area.

A reduction in the climate impact of the transport sector cannot, however, ignore the progressive replacement of the oldest fleet of cars and private commercial vehicles, and, in particular, a significant increase in registrations of zero-emission vehicles (Battery Electric Vehicles) or almost zero-emission vehicles (Plug-in Hybrid Electric Vehicles). Therefore, the topic of the electrification of private mobility must represent one of the key objectives of the Administration for 2030.

Starting from the 2030 forecasts on the numbers of the private fleet of cars and commercial vehicles in Rome, developed by Roma Servizio Mobilità (RSM), a study was developed that allowed us to estimate the reduction in $CO_2eq$ emissions due to the increase in **electric vehicles** (BEVs and PHEVs). As far as passenger cars are concerned, the share of circulating electric vehicles in 2030 was estimated on the basis of the forecasts of the PNIEC 2024[9], resulting in a 17% share of the total number of cars circulating in the capital by 2030. For light and heavy commercial vehicles, the estimated share circulating in Rome in 2030 is 10% of the total. The strategy was developed by initially calculating the consumption of Rome's vehicle fleet to 2030 without the expected share of electric vehicles, thus considering only an increase in more efficient traditional fuel vehicles to replace the current ones with lower emission classes (Euro 0, 1, 2, etc.). This scenario was then transformed by introducing the percentage of electric vehicles previously established, resulting in a reduction in the consumption of traditional fuels (petrol, diesel, etc.) and an increase in electricity consumption. This methodology was used for both passenger cars and commercial vehicles. The study yielded a total savings figure attributable to the CCC **electrification of the vehicle fleet** strategy of approximately **231,000 tonnes of $CO_2eq/y$.**

Roma Capitale is already implementing structural changes in working modes for its employees, through the agile working initiative defined in the SECAP, which will involve all Capitoline employees in the coming years. This working mode is currently, as it will be in the years to come, being introduced more and more in the organisation of work in all areas of the public sector, in controlled and participated companies, and in private enterprises.

[9] 6.6 million electric cars (EVs) of the total vehicle fleet circulating in Italy by 2030

For this paper, to achieve Rome's climate neutrality, a specific CCC strategy on smart working has been developed, assessing the impact of agile working to 2030 if extended to all employees in Rome, both in the public and private sectors (altogether over 1 million workers). The assumptions used to develop this strategy are as follows: an average of two days a week working from home; composition of the private car fleet in 2030 according to the results of the analysis on the electrification of vehicles, therefore also including a 17% of electric cars in circulation; an average home-work commute in the municipality of Rome based on previous research. By calculating the reduction of fuel consumption and electricity absorbed (EVs), the result in terms of climate-changing emissions reduction was obtained, which attributes a saving of over **300,000 $tCO_2eq/y$** to the CCC "**smart working"** strategy.

- **Purchase of green energy**

A further strategy implemented in the Climate City Contract concerns green energy and green public procurement. The dialogue process with stakeholders made it possible to highlight the many actions planned to purchase green energy with a Guarantee of Origin (hereinafter GoO) to cover part of the electricity consumption of tertiary and industrial sectors.

The intention is to support this path on the part of companies and the public administration, with Roma Capitale's commitment to expand the minimum environmental criteria provided by Italian law and Green Public Procurement in all tenders and also in the purchase of electricity from the grid.

To elaborate the CCC green procurement strategy, the purchase of electricity with GoO from renewable sources was assumed to cover, by 2030, 40% of the total electricity consumption of buildings in the tertiary and industry sectors. This scenario is essentially in line with the companies' energy plans to meet the 2030 targets for the reduction of total emissions generated by corporate activities. Assuming total electricity consumption in 2030 for both sectors, the estimates obtained in the energy efficiency strategies described above were considered. To avoid double counting, green purchases already included in stakeholder actions were subtracted from the results obtained. The estimate of **additional green energy** purchased by 2030 is approximately 1.6 TWh/y, of which more than 90% is attributable to the tertiary sector. The contributions in terms of climate-altering gas emission reduction of the CCC strategies described above are summarised below:

- **Purchase of electricity with certified guarantee of origin for the tertiary sector: 418,720 $tCO_2eq/y$**
- **Purchase of electricity with certified guarantee of origin for the industrial sector: 31,441 $tCO_2eq/y$**

To conclude this paragraph, the overall path to achieving climate neutrality is summarised below, starting from the baseline of **8,598,003** $tCO_2eq/y$.

As already widely presented, the Climate City Contact of Rome is one component of the path that has long been directed towards the definition of solutions that lead the city to the goal of climate neutrality. Therefore, the reduction of the reference baseline also includes the contribution of other fundamental strategic plans recently approved such as the Climate Plan, the Waste Plan, the Sustainable Urban Mobility Plan (SUMP), the Climate Adaptation Strategy, the SECAP. The importance of the aforementioned plans is not only in terms of reducing emissions but also in terms of expanding the number of stakeholders, a fundamental element in the collective path of reducing emissions undertaken by the Municipal Administration.

The objective of this section is to detail each item accounted for as a reduction of the baseline. The graph below gives a visual summary followed by the specific reconstruction.

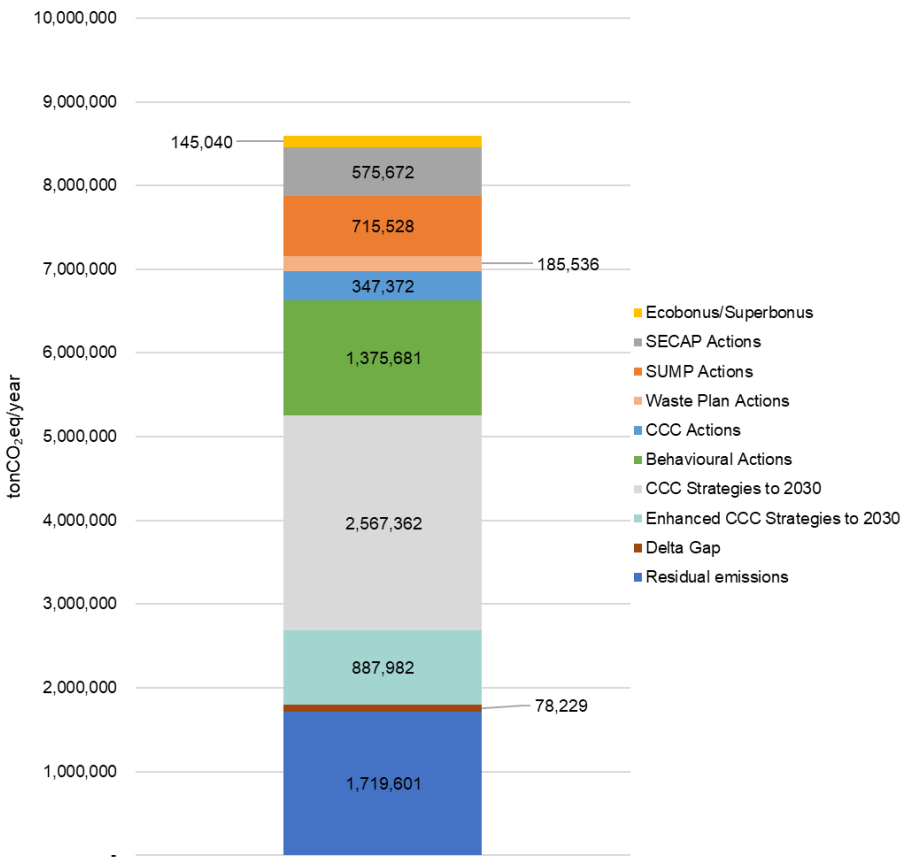


**Figure 20: Visual overview of baseline reduction components**

Below is the detail of the items in the key legend:

- **SECAP actions**: in agreement with the Municipal Administration, the Climate City Contract includes some items already calculated by the SECAP and recalculated on the basis of the CCC's own conversion factors, for an overall total of **575,672 $tCO_2eq/y$.** The cross-cutting nature of the topics covered by the SECAP led to the inclusion of initiatives in the following sectors:

    1. The **Buildings** sector includes interventions in the installation of RES, energy upgrading of schools, public and private buildings, alternative energy solutions such as geothermal energy, and institutions of Renewable Energy Communities in the territory, as well as the efficiency of public lighting: the total contribution is **424,747 $tCO_2eq/y$.**
    2. The **Transport** sector includes the emission reduction estimate for the agile work initiative that will involve all Capitoline employees in the coming years (**3,990 $tCO_2eq/y$)**, The substantial contribution estimated in the Sustainable Urban Mobility Plan (SUMP) will be detailed in the 'SUMP Actions' item below;
    3. The **Waste** sector includes the contribution of the projects against food waste, the incentive program for the reduction of separated waste, the Green Card campaign for the correct differentiation of waste, the program for the reduction of packaging and the "Acque di Roma" project for the reduction of water distribution through plastic bottles and other projects related to the circularity of the products and the reuse of them. Overall, these initiatives bring an estimated benefit in terms of emissions reduction equal to **141,730**

**$tCO_2eq/y$**. An additional contribution for the sector is provided by the Piano Rifiuti set out in the specific item;

4. The **AFOLU** sector includes a reforestation program, which Rome Capital has committed to reach by 2030, with an estimated reduction value of around **5.205 $tCO_2eq/y$**.

- **SUMP Actions:** the Plan's main action lines contribute to the reduction of **715,528 $tCO_2eq/y$.** Among the most important are:

  - Regulation policies and ITS
  - Road infrastructure and interchange parking system
  - Intermodal Hub Plan
  - Realisation of new LPT infrastructures and services
  - Cycling Mobility Plan and supporting infrastructure
  - Pedestrian Mobility Plan
  - Mobility management and smart working policies
  - Renewal of hybrid/electric fleets
  - Support for electric vehicles (incentives and implementation)
  - Urban Logistics Plan
  - Mobility Security Plan

  Of these, the item referring to new LPT infrastructure and services is the most impactful. It includes the realisation of the metro lines (Line B, C) and the railway line adjustments for the realisation of the E and F metro lines. In addition, interventions to upgrade the surface tram network are included here.

- **Waste Plan Actions:** the contribution of the Waste Plan in the Climate City Contract is **185,536 $tCO_2eq/y$.** Among the actions included are the waste-to-energy plant, which will be operational from 2027, two new plants for the collection and recovery of paper and plastic, and the upgrading of collection centres.

- **Ecobonus /Superbonus** incentives: The total contribution of this item is - on an annual basis **-145,040 $tCO_2eq$.** The estimate was based on requests for Ecobonus (from 01-01-2020 to 31-12-2023) and Superbonus (from 01-01-2021 to 31-03-2024) tax deductions for energy upgrading and energy efficiency measures such as insulation, replacement of windows or fixtures, installation of thermal and photovoltaic solar panels and storage systems, upgrading of air conditioning systems and installation of infrastructure for recharging electric vehicles.

- **CCC actions**: the value of the actions collected by external stakeholders involved with the Expression of Interest (hereafter EoI) and internal stakeholders - i.e. part of the Transition Team of Roma Capitale - totalled **347,372 $tCO_2eq/y$**. Of these, about 93% (i.e. 323,895 $tCO_2eq$) is represented by 'planned' actions, i.e. in progress or already implemented and concluded after the baseline year. The remaining part refers to actions 'under study', i.e. still in the definition phase, for which a technical-economic feasibility plan is still lacking. In general, the 523 actions collected mainly include stakeholders external to Roma Capitale (80 responded to the EoI, for a total of 493 actions). The actions proposed by the 7 Municipal Departments total 30, a limited number, but to be evaluated in relation to the already large contribution made within the existing plans mentioned above.

- **Behavioural actions**: behavioural actions are characterised by few variables useful for estimating their contribution to emission reduction. Based on the relevant literature (e.g. European Environment Agency), it is nevertheless possible to attribute potential energy savings due to behavioural measures on the basis of a range that varies from a minimum of 5% to a maximum of 20%, to be applied to the baseline reduction target, i.e. 80% of the overall baseline. The Administration of Roma Capitale, as extensively reported in Module C of this document,

has implemented significant actions and initiatives, such as to assign a weight equal to 20% as the overall contribution of all the actions underway within the city ecosystem. The total value of emissions reduced through behavioural actions is therefore estimated at approximately **1,375,681 $tCO_2eq/y$.** The behavioural actions were categorised for the different sectors according to the following percentages in terms of emission reductions: 32.1% buildings, 64.9% transport, 0.4% waste, 2.6% IPPU.

- **CCC Strategies to 2030:** 11 strategic actions have been defined on which to focus action between now and 2030. These strategies concern: the installation of photovoltaic systems on buildings, in car parks and in agricultural land (agri-voltaic), energy efficiency in public and private residential, tertiary and industrial buildings, green energy procurement and some actions in the transport sector, such as electrification of the vehicle fleet and smart working. Below are the annual reduction values of climate-changing emissions broken down by individual CCC strategy, totalling **2,567,362 $tCO_2eq/y$**.

    - Photovoltaic installations on buildings: 582,140 $tCO_2eq$
    - Photovoltaic installations on canopies in parking lot: 22,167 $tCO_2eq$
    - Agri-voltaic: 200,000 $tCO_2eq$
    - Energy renovation of residential buildings: 486,670 $tCO_2eq$
    - Energy renovation of social housing: 38,171 $tCO_2eq$
    - Energy efficiency improvements of tertiary sector buildings and headquarters: 150,420 $tCO_2eq$
    - Energy efficiency improvements of industrial sector: 102,124 $tCO_2eq$
    - Electrification of the vehicle fleet: 231,030 $tCO_2eq$
    - Smart working 304,478 $tCO_2eq$
    - Purchase of electricity with certified guarantee of origin for the tertiary sector: 418,720 $tCO_2eq$
    - Purchase of electricity with certified guarantee of origin for the industrial sector: 31,441 $tCO_2eq$

- **Enhanced CCC Strategies to 2030:** For the attainment of climate neutrality, the Administration has decided to estimate the enhancement of 5 of the CCC strategies considered most significant for the pathway to transition, whose total contribution is to be considered additional to the previous item, and equal to approximately **887,982 $tCO_2eq/y$.** Their development represents an ambitious path that will see the municipal administration involved as facilitator of some initiatives not only at a local level, but also at a regional and national level. The annual contributions to reducing climate-changing emissions of the individual enhanced strategies are detailed below:

    - Photovoltaic installations on buildings: 388,093 $tCO_2eq$
    - Photovoltaic installations on canopies in parking lot: 14,778 $tCO_2eq$
    - Agri-voltaic: 200,000 $tCO_2eq$
    - Energy renovation of residential buildings: 264,450 $tCO_2eq$
    - Energy renovation of social housing: 20,661 $tCO_2eq$.

  The implementation of the enhanced CCC strategies along the 2030 time horizon is closely linked to several factors of a political, economic-financial, legislative and local ecosystem awareness nature. The path opened by the Administration with this document and the existing Plans, which have characterised its work in recent years, is intended to be a start, in order to embark on an ambitious journey to reduce emissions in line with the objectives of a fair and equitable transition.

- **Delta Gap**: The gap value shown in the graph refers to the $CO_2eq$ emissions left to reach 80%, net of all contributions shown below. This value is consistent with the pathway that the City has

embarked upon and which, in the course of future monitoring, will see continuous enhancements and improvements. This will also happen thanks to the awareness and involvement of citizens on ecological transition issues, actions that will provide the necessary impetus for the allocation of new funding, for changes in habits and lifestyles, for the development of new, more efficient technologies, and for the constant commitment of local and national politics. The final gap value of approximately **78,229 $tCO_2eq/y$** is to be considered the starting point of the cross-sectoral co-planning pathway that the Administration is committed to pursuing until 2030.

- **Residual emissions:** these emissions are the part of climate-altering emissions that can hardly be abated, defined in literature as 'hard to abate' since they are associated with processes, technologies and users that are unlikely, at least in the short term, to undergo energy efficiency or to benefit from the production of energy from renewable energy plants. They represent 20% of the overall baseline (**1,719,610 $tCO_2eq/y$**), as envisaged by the NetZeroCities Guidelines. Therefore, the actions to be implemented by the city to reduce the baseline exclude that 20% and will erode the remaining 80%, the CCC target of approximately 6,878,403 $tCO_2eq$.

The economic reference of each of these items is reported in Section B of the Investment Plan.

**B-2.3: Strategies for achieving the baseline emission reduction target**

A residual part of the climate-altering emissions (20% of the baseline, equal to 1,719,600 $tCO_2eq/y$) are considered hard to abate, as they are associated with areas that are unlikely to undergo energy efficiency or benefit from the production of energy from renewable electrical (photovoltaic) or thermal (geothermal, solar thermal, etc.) sources. As a consequence this amount of emissions can currently only be considered absorbable through the public and private plant heritage (trees and shrubs) present within the municipal territory, which is being strengthened, as well as by adaptation measures, such as Nature Based Solutions (NBS), i.e. solutions inspired and supported by nature, which are cost-effective and provide simultaneous environmental, social and economic benefits, and contribute to strengthening the resilience of the territory.

As far as the buildings sector is concerned, the 'Hard to abate' category mainly includes civil and industrial users that due to geographical location (e.g. historical centre) or for building-typological characteristics are not among the buildings that will be able to benefit from energy requalification interventions by 2030 (or only partially); among the barriers considered in the requalification of buildings there are, for example, cases of structures that, due to historical, artistic and landscape constraints, cannot be insulated through external or internal insulation, are limited in the possibility of replacing windows and doors or, again, cannot provide for adequate photovoltaic systems on the roof or the installation of heat pumps. Furthermore, there are a number of industrial processes (e.g. heavy manufacturing industry) for which the replacement of currently used fossil fuels is rather complex, due to the lack of reliable alternative energy sources, immature technologies and high costs.

In the transport sector a proportion of passenger cars will continue to run on endothermic diesel or petrol engines, both because there are currently insufficient solutions on the market for the total electrification of the vehicle fleet, especially for certain usage needs, and for economic reasons, mainly with regard to lower-income population groups. Even higher is the share of heavy or light commercial vehicles that will continue to run on diesel fuel; in fact, there are several factors influencing this: the very high cost of zero-emission vehicles, technological immaturity, the scarcity of models available on the market, the need to ensure high mileage, etc. In the long run, with increasingly stringent European and national deadlines and constraints and the progressive development of

technologies, it is estimated that residual emissions from the transport sector will be more easily abated.

Even in waste management, a share of climate-changing emissions, which cannot be easily reduced, can be expected to persist. In fact, although all the actions mentioned in this document are being introduced, ranging from raising citizens' awareness of more efficient waste collection to the construction of plants for the treatment and energy valorisation of waste, regulatory and administrative obstacles can be as much of a hindrance as a lack of public awareness.

During the drafting of this document, climate adaptation initiatives emerged from the stakeholders involved. The complexity and transversality of the measures made it difficult to obtain estimates in terms of $CO_2$eq reduction, while co-benefits are known due to the reduction of heat waves, better management of heavy rainfall, and reduction of perceived noise, which altogether lead to an improvement in city liveability in the face of an increase in extreme climate phenomena. The table below provides a descriptive account of the ten actions collected, with an associated brief description. Details of the individual actions can be found in Table B-2.2d in the annex.

**Table 15: Climate Adaptation Initiatives by Involved Stakeholders**

| Stakeholder | Action | Description |
|---|---|---|
| Rete Ferroviaria Italiana S.p.A. | Measures for the protection and implementation of the ecological network | Creation of green roofs, waterproofing removal and neutrality islands in RFI company areas not functional to railway operations |
| Rete Ferroviaria Italiana S.p.A. | Technical tables for climate change adaptation strategies | Reduction of the impact of urban flash floods and mitigation of heat wave effects through synergetic actions. The feasibility is to be assessed with the municipal administration on the basis of the progress achieved at the technical tables |
| Department of Urban Planning and Implementation | Requalification of banks and green areas along the Tiber river | Intervention for the redevelopment of the Tiber river area |
| Urban Planning and Implementation Department | Sea Park - Ostia Antica (Willy Ferrero Park) | Intervention for the redevelopment of the park bordering the seashore with NBS solutions |
| Angelini Real Estate S.p.A. | Climate adaptation actions at the headquarters | Planting of trees and efficient management of water resources with systems to implement rainwater recovery for reuse in irrigation |
| Centro Agroalimentare Roma S. Coop. p.A. | Creation of lamination basins and reduction of impermeable surfaces | Prerequisites for customers wishing to develop new buildings in areas under their concession: creation of green spaces, use of permeable materials, purification and/or pre-treatment systems. Operations are estimated on 200,000 sq. metres of area for logistics use |
| Aeroporti di Roma S.p.A. | Resilient water resource management | This approach also includes the construction of 'diffuse' lamination volumes to avoid the concentration of water volumes, the use and reconversion of existing works, and the creation of controlled flooding areas |
| Ama S.p.A. | Reduction of waterproof surfaces | Paving with recycled material to reduce soil consumption, waterproofing and heat absorption in areas surrounding the operational sites |
| Agenzia del Demanio (State Property Agency) | Climate adaptation measures | Elimination of waterproof surfaces and improvement of albedo to reduce the urban heat island effect; |
| ISPRA – Institute for Environmental Protection and Research | Land and heat island monitoring | Activities as part of the IRIDE project for monitoring land transformations in terms of new soil consumption, sealing, reforestation to assess the relationship between transformation dynamics and the urban heat island phenomenon. |

## 3.3 Module B-3 Monitoring, assessment and learning indicators

This module contains a selection of indicators to evaluate the progress identified in the analysis of the Impact Pathways, highlighting a set of metrics and indicators useful for monitoring over the years the target actions identified by the Municipal Administration as strategic for the development of the city.

The added value of this section is the chance of evaluating the progress of the actions for future years: the reference target values reported for the years 2025 (or alternatively the baseline year available for each indicator), 2027 and 2030 represent an estimate of what it is expected in terms of technological and infrastructural improvements and awareness of the entire city ecosystem towards the issues of climate neutrality.

The baseline column in the table below refers to the reference year in which the indicator is available: for most of them, reference is made to the latest edition of the Urban Ecosystem Questionnaire report of 2024. Any data referring to a different year is indicated with an asterisk (*).

The Municipality of Roma Capitale has been collaborating for several years in the drafting of the 'Ecosistema Urbano' (Urban Ecosystem) study, an annual report produced by Legambiente with the scientific collaboration of Ambiente Italia: the report was the first study in the world to organise the environmental data of cities in order to provide a criterion for assessing sustainability and benchmarking environmental performance. By means of questionnaires and direct interviews with participating municipalities and on the basis of other national statistical sources (e.g. ISTAT), the report defines 125 significant environmental parameters to measure the level of quality of life in capital cities and the effectiveness of initiatives implemented by public administrations. This collection is summarised in 16 indicators covering the six main environmental components present in a city: air, water, waste, mobility, urban environment, energy.

The obstacle that many administrations, including that of the Capitoline city, note is the availability of data. If, on the one hand, these are partially available, given the recent trend that has led public administrations to take an interest in them, yet, on the other, there is a lack of resources and expertise to process them. This is a common problem encountered by many local public bodies in Italy, for which the administration is doing its best to enhance the skills of internal resources through vertical training courses organised in partnership with the city's universities (see Module C of the Action Plan). Moreover, the Administration does not exclude support from external bodies for the collection, mapping and reworking of strategic data for the definition of project performance.

The definition of these indicators is part of a coordinated process that the municipal administration has carried out internally: the involvement of external stakeholders and the open discussions that were organised and supported by AESS during the drafting of the document have made it possible to gather useful feedback that will enrich this version of the document and subsequent ones. The aim is to create specific follow-ups on the monitoring indicators and to keep the workflow tracked and constantly updated over time.

| B-3.1: Indicators - Impacting Pathways | | | | | | |
|---|---|---|---|---|---|---|
| **Objective** | **Action** | **No. Indicator** | **Name of Indicator** | **Target Values** | | |
| | | | | **Baseline** | **2027** | **2030** |
| Electrification and decarbonisation of the territory | RES Installation | #1 | Installed solar power in MW | 230 | 350 | 500 |
| | Private fleet electrification | #2 | No. of vehicles in the fleet below Euro 4 | 851,767 | 800,000 | 700,000 |
| | Local Public Transport Electrification | #3 | % of low-emission buses (hybrid and electric) out of total LPT fleet | 22% | 35% | 50% |
| Water and waste management | New waste treatment facilities | #4 | % of unsorted waste sent outside the municipality | 27% | 20% | 10% |
| | Recovery of waste materials | #5 | % separate waste collection on total waste produced | 45% | 50% | 65% |
| Civil and industrial building efficiency | Energy efficient buildings | #6 | Buildings with energy certification A and B | 7.90% | 8.50% | 15% |
| | Renewable Energy Communities | #7 | RECs active in the territory | 0 | 5 | 15 |
| Sustainable Mobility | Congestion Charge Development | #8 | Limited Traffic Zones - ZTL (square kilometres) | 35 | 45 | 60 |
| | Installation of charging stations | #9 | No. of electric vehicle charging stations | 856 | 1,000 | 1,500 |
| | Municipal sharing mobility solutions | #10 | Total car fleet of public car sharing service | 201 | 350 | 550 |
| | Cycle network development | #11 | Extension of cycle paths (km) | 320 | 360 | 440 |
| Development of green assets | Presence of green areas and city liveability | #12 | Urban greenery per inhabitant (square metres) | 17 | 20 | 25 |
| | Citizen involvement | #13 | % of urban gardens on the territory compared to total urban green areas | 8% | 10% | 15% |
| | NBS adaptation solutions | #14 | Waterproofed soil surface (sq. km) | 22% | 20% | 15% |
| Air quality | Air pollution | #15 | Annual average PM10 concentration (µg/m3) | 30 | 25 | 15 |
| | | #16 | Annual average NO2 concentration (µg/m3) | 47 | 40 | 30 |

The metadata tables below capture all 16 selected KPIs, explaining the detailed information for each one.

| B-3.2: Indicator Metadata #1 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **RES instalment** |
| Indicator Unit | MegaWatt |
| Definition | Solar power installed in the municipality area |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Built environment and Energy system |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction in fossil fuels consumption; improvements in air quality |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Electrification and decarbonization |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Istat dataset - Dati ambientali nelle città |
| Is the data source local or regional/national? | At national level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the installation progress in the city |

| B-3.2: Indicator Metadata #2 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Electrification private fleet** |
| Indicator Unit | Number in absolute value |
| Definition | Cars registered in the national records active in the municipality of Rome area |
| Calculation | Sum of the number of cars registered in the municipality |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction in fossil fuels consumption; reduction of traffic noises; improving air quality |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on ACI dataset |
| Is the data source local or regional/national? | At national level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the electrification of private cars in the city |

| B-3.2: Indicator Metadata #3 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Electrification LPT** |
| Indicator Unit | Percentage in absolute value |
| Definition | Number of electric and hybrid buses in the public fleet |
| Calculation | Electric or hybrid bus on the total number of buses of the fleet |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction in fossil fuels consumption; improving the offer of TPL; increase of the TPL appealing |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Roma Servizi per la Mobilità datasets |
| Is the data source local or regional/national? | At municipality level |
| Expected availability | Yearly |
| Suggested collection interval | The LPT company is owned by the Municipality; hence it updates regularly the Ufficio Statistica and the public bodies involved in the mobility politicies. Roma Servizi per la Mobilità is controlled by the Municipality and works as a Service Contract thought planning, design and management of public and private mobility. |

| B-3.2: Indicator Metadata #4 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Urban unsorted waste** |
| Indicator Unit | Percentage |
| Definition | The unsorted wasted are the sum of the waste classified according to the regional guidelines which includes unsorted urban waste, waste from streets cleaning and other unsorted waste. |
| Calculation | Unsorted waste divided by the total waste produced per year |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Waste and circular economy |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Air quality, increasing of circularity principles in citizens' daily life |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Waste management |

| | |
|---|---|
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Piano Rifiuti |
| Is the data source local or regional/national? | At municipality level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the development leads by Ama the municipal company responsible of the waste management regularly in contact with the involved Department. |
| **B-3.2: Indicator Metadata #5** | |
| (For each indicator selected) | |
| Indicator Name | **Sorted waste** |
| Indicator Unit | Percentage |
| Definition | The unsorted wasted are the sum of the waste classified according to the regional guidelines which includes: organic waste (green waste), glass waste, textile waste, waste from home composting, waste generated from appliances, instruments and devices powered by electricity or batteries (cfr. RAEE), selective waste collection (pharmaceutical, batteries, vegetal and mineral oil, chemical solutions for cleaning...) |
| Calculation | Sorted waste divided by total waste produced per year |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Waste and circular economy |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Air quality, increasing of circularity principles in citizens' daily life |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Waste management |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Piano Rifiuti |
| Is the data source local or regional/national? | At municipality level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the development leads by Ama the municipal company responsible of the waste management regularly in contact with the Department. |

| **B-3.2: Indicator Metadata #6** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Certified building** |
| Indicator Unit | Percentage |
| Definition | Count the number of civil buildings which obtain the energy certification |
| Calculation | Certified building divided by the total building per category |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Built environment and energy system |

| | |
|---|---|
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Improvement of the liveability of internal environments; improve the energy efficiency of buildings |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Energy efficiency on industrial, public and private buildings |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | The national dataset related to building efficiency measures is managed by Enea and GSE |
| Is the data source local or regional/national? | Local and national |
| Expected availability | Yearly |
| Suggested collection interval | The collection is related to the efficiency measures available at national level |

| **B-3.2: Indicator Metadata #7** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Active REC** |
| Indicator Unit | Number in absolute value |
| Definition | Count the number of communities born in the municipal area of Rome |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Built Environment and Energy System |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction in fossil fuels consumption, citizen involvement in energy transition |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Energy efficiency on industrial, public and private buildings |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale |
| Is the data source local or regional/national? | At national and local level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the REC expansion in the city |

| **B-3.2: Indicator Metadata #8** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Low Emission Zone** |
| Indicator Unit | Kilometre squared |
| Definition | Area with limited access for private traffic |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |

| | |
|---|---|
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction of traffic, increasing of awareness towards sustainable practises, improving of health though physical activities |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Roma Servizi per la Mobilità dataset |
| Is the data source local or regional/national? | At local level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the LEZ area development. RSM can update the Municipality and the Mobility Department according to the requests. |

| **B-3.2: Indicator Metadata #9** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Charging stations** |
| Indicator Unit | Number in absolute value |
| Definition | Number of charging stations available in the public areas of the municipality |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction of noises; improvement of air quality, reduction of traffic |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Roma Servizi per la Mobilità dataset |
| Is the data source local or regional/national? | At local level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the charging stations development. RSM can update the Municipality and the Mobility Department regularly |

| **B-3.2: Indicator Metadata #10** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Public car sharing fleet** |
| Indicator Unit | Number in absolute value |

| | |
|---|---|
| Definition | Number of cars available through the RSM car-sharing service |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction in fossil fuels consumption; improvement of air quality, reduction of traffic; involvement and awareness towards new 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? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Roma Servizi per la Mobilità dataset |
| Is the data source local or regional/national? | At local level |
| Expected availability | Yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the sharing cars available. RSM can update the Municipality and the Mobility Department regularly. |

| **B-3.2: Indicator Metadata #11** | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Cycle pathways** |
| Indicator Unit | Kilometres |
| Definition | Extension of cycling infrastructure in the city as a cumulative indicator. |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transportation |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Improvement of health conditions and city liveability, reduction of traffic and noises; improve of air quality |
| Is the indicator useful for monitoring the output/impact of action(s)? | Yes |
| If yes, which action and impact pathway is it relevant for? | Sustainable mobility |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Roma Servizi per la Mobilità dataset |
| Is the data source local or regional/national? | At municipality level |
| Expected availability | Yearly |
| Suggested collection interval | RSM can update the Municipality and the Mobility Department according to the need of the Administrations. |

| B-3.2: Indicator Metadata 12 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Green areas** |
| Indicator Unit | Kilometres squared |
| Definition | Urban green areas per habitant |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | AFOLU |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction of perceived noise, mitigation of heat waves, improved city liveability |
| 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 heritage |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Istat dataset - Dati ambientali nelle città |
| Is the data source local or regional/national? | At national level |
| Expected availability | More than yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the green areas' development |

| B-3.2: Indicator Metadata #13 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Urban garden** |
| Indicator Unit | Kilometres squared |
| Definition | Urban garden available per municipal district |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | AFOLU |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction of perceived noise, mitigation of heat waves, improved city liveability |
| 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 heritage |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale |
| Is the data source local or regional/national? | At local level |
| Expected availability | More than yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the urban garden area development |

| B-3.2: Indicator Metadata #14 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **Waterproof soil area** |
| Indicator Unit | Kilometres squared |
| Definition | Urban impermeable area |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | AFOLU |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Reduction of perceived noise, mitigation of heat waves, improved city liveability |
| 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 heritage |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale |
| Is the data source local or regional/national? | At local level |
| Expected availability | More than yearly |
| Suggested collection interval | The yearly collection would be sufficient to give an idea of the NBS solution adopted to reduce the waterproof areas |

| B-3.2: Indicator Metadata #15 and #16 | |
|---|---|
| (For each indicator selected) | |
| Indicator Name | **PM10 and NO2 concentration** |
| Indicator Unit | µg/m3 (micrograms per cubic meter) |
| Definition | Yearly mean of PM10 and NO2 elements in the air |
| Calculation | None |
| Indicator Context | |
| Does the indicator measure direct impacts (reduction in greenhouse gas emissions?) | Yes |
| If yes, which emission source sectors does it measure? | Transversal |
| Does the indicator measure indirect impacts (i.e., co- benefits)? | Yes |
| If yes, which co-benefit does it measure? | Improvement of city liveability, increasing of technological competitiveness and synergies |
| 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 heritage |
| Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms? | Yes |
| Data requirements | |
| Expected data source | Ufficio Statistica Roma Capitale based on Arpa Lazio dataset |
| Is the data source local or regional/national? | At regional level |
| Expected availability | Daily |
| Suggested collection interval | The monthly analysis would be sufficient to give an idea of the air quality |

# 4 Part C - Pathway to achieving climate neutrality by 2030

The goal of this section is highlighting the main organizational, social and collaborative governance initiatives that the city is adopting in its neutrality pathway. In the current context, a solid governance for climate policies and an innovative collective engagement at the local level is the prerequisite for effectively tackling climate change. Therefore, these actions are to be considered as directly supporting the climate actions already introduced in Module B.
Before detailing the models and actions for governance and social innovation activated in Rome, we deemed it necessary to show the whole ecosystem in a single scheme:

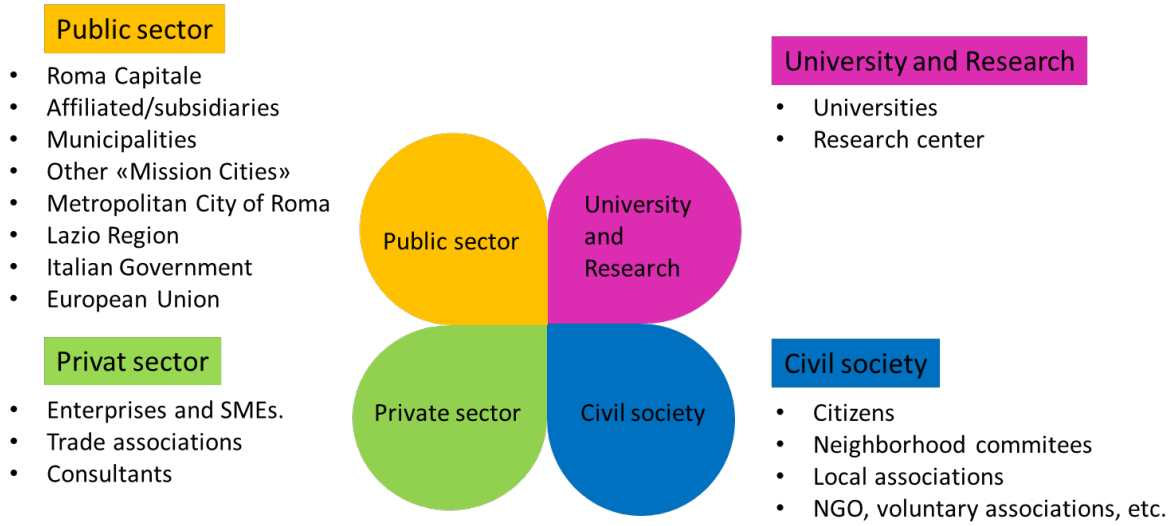


**Figure 21: Social and governance innovation ecosystem**

Roma Capitale committed to creating synergies among local players, by communicating and holding joint discussions on existing and future strategies and specific actions, by keeping the entire urban ecosystem alive. The Transition Team, as described below, plays a fundamental role in this direction as a link among the parties and continuously stimulates the whole territory towards neutrality.
In light of the great success obtained by the joint pathways adopted during the Climate Adaptation Strategy, Roma Capitale selected this as the benchmark methodology to continue promoting citizens' future engagement on climate neutrality.
Despite Roma Capitale's key role, the presence of external stakeholders involved in social and governance innovation pathways proved to be crucial thanks to, on the one hand, the actions undertaken by single stakeholders at the local level - as also reported in the list of behavioural actions contained in the portfolio, and, on the other hand, the various innovation activities implemented by local associations and territorial realities such as Neighbourhood Committees, which are fundamental for a large city such as Rome.

## 4.1 Module C-1 Actions for Governance Innovation

This module describes the innovations Roma Capitale is adopting in terms of governance to achieve the climate neutrality objectives by 2030. Section C-1.1 reports institutional design initiatives, collaboration and awareness-raising processes undertaken by the Municipal Administration as well as by the external stakeholders involved in the Mission and active within the city ecosystem.

By defining the **Climate Office** at an internal level, since 2021, the city of Rome has adopted a tool which differs from all other local public administrations, thus confirming the city's commitment to cross-sectoral engagement among the city institutions and the main municipal departments. The Climate Office has played a key role in the city's application to the Mission and in the definition of the municipal Working Group, which is part of the Transition Team.

All the activities below (e.g. Agreements, partnerships and memoranda of understanding) always refer, either directly or indirectly, to the Transition Team and, more specifically, to the Climate Office, which, in turn, also serves as an aggregator within the urban ecosystem of social and governance innovation.

The official involvement of external stakeholders was launched in the spring of 2024 through a public Expression of Interest notice with the aim of attracting the largest number of subjects within a context, the Roman one, characterized by complexity and heterogeneity. To take part in the Expression of Interest, the interested parties submitted the required documentation, including the commitment to sign the CCC and the completed forms containing the initiatives and projects they plan to carry out by 2030, reporting the technical and economic data of each single intervention. The procedure collects 80 stakeholders.

Additionally, there are numerous partnerships that the Municipality of Roma Capitale has initiated with research bodies, associations, study centres, financial institutions and sector agencies at a national level to support initiatives aimed at reducing emissions. The effort that the city is making in involving such a large number of partners is to be viewed positively with a view to consolidating and launching new initiatives in the fields of ecological transition, training, and new green technologies.

**C-1.1: Description of the participatory model for climate neutrality**

The following governance interventions are rightfully among the actions that directly benefit the achievement of the Mission's objectives: without an extensive and well-designed involvement of the city's ecosystem, the effectiveness of initiatives and investments risks having a more protracted horizon with fewer and less widespread social benefits.

**The Climate Office and the Interdepartmental Working Group**

For a more effective implementation of policies to fight climate change, a Climate Office was established in 2021, directly appointed by the Mayor's Cabinet, made up of resources with transversal technical and political-administrative skills. The main functions of the Office are:

- coordinating internal municipal activities with regard to the objectives of the 2030 UN Agenda and the European Energy and Climate Plan
- defining an organic strategy to fight climate change through the adoption of the Mitigation and Adaptation Plan
- supporting the development of energy communities and energy efficiency interventions in buildings.

The involvement of the Mayor's Cabinet demonstrates the high political awareness of the entire municipal administration, which also ensures a cross-sectoral involvement of internal departments

demonstrating interdependence with respect to climate objectives. To achieve this, the Office identified a working group consisting of representatives (or their delegates) from the following departments:

- Department of Environmental Protection
- Department of Heritage and Housing Policies
- Department of Infrastructure Development and Urban Maintenance
- Department of Major Events, Sport, Tourism and Fashion
- Department of Social Policies and Health
- Department of Sustainable Mobility and Transport
- Department of Urban Planning and Implementation

In the case of topics involving the Administration at an international level, the International Relations Department of the Mayor's Cabinet will also be invited to participate in the Working Group. This is intended to co-ordinate activities in the field of fighting climate change, foster internal debate and allocate resources appropriately with respect to the objectives. In particular, the working group's main areas of action are:

- The process of updating the (SECAP), consistent with participation in the Covenant of Mayors, the C40 network and the drafting of the Climate City Contract
- the emission monitoring activities foreseen by the municipal commitments undertaken every two years
- the participation of the Roma Capitale structures in the working groups envisaged within the C40 and ICLEI membership, as well as in other networks the city has joined
- the drafting of the Climate Adaptation strategy
- the participation in European calls for tenders and programmes to support interventions and initiatives on the reduction of climate-changing emissions, including the drafting of the CCC
- the institutional collaboration with Bodies and Institutions in charge of climate mitigation and adaptation activities
- the collaboration with universities and research institutes working on these issues.

The Group's activity will not entail any financial burden as the task undertaken is carried out by its members free of charge.

**The Transition Team**

In the CCC's transition context, change management must take place according to a circular and iterative model of sharing and implementation between the actors involved, i.e. public organisations, citizens, the corporate world and research and advisory bodies. The centrality of the Transition Team (TT) in achieving these objectives emerges through three key functions:

- the TT as change agent in selecting, involving, facilitating, supporting and training the ecosystem in which the city operates;
- the TT as intermediary;
- the TT as learning partner promoting knowledge for the local ecosystem.

Among the possible models used to define the TT formulated by NZC, the city of Rome opted for the diffuse participation model in which the TT is the result of a network partnership created by the local actors available without defining an independent external organisation. The actors that constitute the TT play an important role within the territory and aspire to increase their influence: each of them provides resources to organise the neutrality working group, within which a reference figure emerges

as a coordinator of the work. For Roma Capitale, this role is represented by the Climate Office. Since its establishment, this office has dealt with intermediation between public administrative departments and citizen participation in change processes, such as participatory pathways and municipal councils, whose details are provided in the section on social innovation (Module C.2). Research bodies, universities and study centres have been involved on an ongoing basis for some years now, in coordination with the Office and the relevant Departments: evidence of this can be seen in the agreements that Roma Capitale has entered into with the various local and national players in the sector, referred to below in this section. Finally, a further act promoting cross-sectoral involvement of all actors in the area (public bodies, businesses, SMEs, universities, third sector entities, research centres, etc.) was evidenced by the Office's publication of the Expression of Interest in mid-April 2024, the purpose of which was precisely to gather direct and indirect interventions that would contribute to defining the city's decarbonisation project. The response from the urban ecosystem has been encouraging: 80 stakeholders with an overall number of 705 action sheets.
To ensure robust and sustained participation, leveraging incentives such as sharing of resources and best practices, access to strategic data, and increased cross-sectoral competitiveness is important in stakeholder engagement.
Once a broad degree of participation has been achieved, the TT has to keep the networking and transversality of the confrontation continuous, acting within the 'networked' generated context, rather than linearly, helping to broaden the actors involved. It is precisely for this purpose that a day-long urban ecosystem engagement event will be organised for the beginning of 2025, to present the first results of the CCC's journey, keep the ecosystem active and, last but not least, broaden it by starting with new social innovation actions and the strengthening of multi-level governance. The autumn event lays the foundation for the CCC's future steps, and, more importantly, for the continuous co-creation of strategies and the evolution of the portfolio of quantitative, behavioural, social innovation and governance actions.

The role of intermediary within a heterogeneous and articulated ecosystem such as that of the city of Rome is of fundamental importance not only within the CCC definition process but also to establish a long-term governance transition model: this function is carried out by the Climate Office, supported by Net Zero City and by the technical-scientific competences of AESS - Agency for Energy and Sustainable Development, in house fractioned by Roma Capitale, with which the Municipality has worked closely in the path to the realisation of the CCC.

As a learning partner, the TT relied on the NZC platform, which provided online training courses and opportunities to enhance learning directed not only to TT members but also to all stakeholders who signed the plan. Additionally, the numerous collaborative agreements with study centres, agencies and research bodies often guarantee training courses, workshops and round tables for discussion and debate. For further details, please refer to the dedicated section 'Agreements, Partnerships and Protocols'.

*The role of AESS - Agency for Energy and Sustainable Development*
The Agency for Energy and Sustainable Development (AESS), a fractional in-house company whose members are public administrations and to which Roma Capitale is a partner, was hired to provide all-round support to the Capitoline CCC. The AESS experts, who support 5 of the 9 Italian mission cities[10], carried out intensive work within the TT in strict cooperation with the Climate Office, liaising with the signatory stakeholders to analyse the action sheets, barriers and strategies of the territory and aligning with the NZC advisors (see below) during the course of the CCC.

[10] The cities supported by AESS are: Parma (label obtained in March 2024), Bergamo, Bologna (both with CCC delivered in March 2024 and passed the initial check-list phase), Padua (being delivered in September 2024).

*NZC's support*

The advisors of the NZC platform supported Roma Capitale throughout the whole process that led to the drafting of the first CCC. Aided by face-to-face meetings and, especially in the last months of the work, by regular bi-weekly online meetings, the advisors followed the work closely, clearing doubts that arose in the process, and supporting Roma Capitale and AESS on specific topics.

**Roma Capitale's agreements, partnerships and memoranda of understanding with leading local and national actors in the ecological transition**

These typologies of agreements represent an opportunity for the city to engage with technically and administratively competent realities in a transversal manner; the positive synergies arising from them can also propagate between the actors involved and other realities in the sector, thus going beyond the mere agreement between two individual actors. Furthermore, a contribution in the training and skills enhancement of the municipality's administrative staff is a co-benefit of the agreements.

***Agreement with the Metropolitan City for the redevelopment and design of new cultural and civic centres***

The agreement provides for the design of the 30 cultural and civic centres envisaged under the Integrated Urban Plan (PUI) and financed with NRRP funds for a total amount of around 50 million euro, broken down as follows: the energy efficiency and upgrading of 21 libraries belonging to the Biblioteche di Roma Capitale circuit distributed across several city districts, for an amount of 17.5 million euro, and the construction of 9 new cultural centres for the remainder of the investment. These 30 interventions will be realised by 2026 as they are tied to NRRP funding. This action was the subject of a two-month citizen public consultation, the results of which are analysed in Module C - Social Innovation.

***Collaboration agreement with ENEA for the development of innovative energy technologies***

Signed in April 2024, the three-year agreement aims to promote the development of innovative energy technologies, supporting in particular the spread of renewable energy sources and energy communities, the use of hydrogen and innovative solutions for sustainable mobility. The agreement addresses the consolidation and launch of new energy and environmental initiatives to foster the decarbonisation of the energy system, adaptation to climate change, energy end-use efficiency, and the protection of territories and ecosystems. The challenge the city is called to face requires technical and scientific competences that a cutting-edge reality such as ENEA can offer, bridging the gap that often characterises Public Administrations facing the ongoing ecological transition. By means of implementation agreements, the parties will agree on conducting applied research projects or carrying out other initiatives related to scientific and/or training activities to meet the set objectives.

***Memorandum of understanding for the energy requalification of the public building stock with GSE***

The objective of the three-year protocol signed in February 2023 is to promote the ecological transition targeting primarily the city's school buildings and then the rest of the public building stock. This main objective is combined with other cross-cutting objectives such as: promoting the production of new energy from renewable sources; encouraging consumption electrification in the city, both through e-mobility solutions and collective energy self-consumption groups, by setting up Renewable Energy Communities; introducing innovative models in the urban waste cycle, such as anaerobic bio-digestion plants for the production of bio-methane and the production of electricity and heat through waste-to-energy plants (both are objectives already envisaged by the Roma Capitale Waste Plan). This agreement is important because it guarantees access to the incentives provided for the energy

requalification of municipal buildings (thanks to the Conto Termico - Thermal Account) and the incentives provided for energy communities and anaerobic bio-digestion plants. The outlook, by 2030, is the energy requalification of all Rome's schools, completing the work begun in 2022 on the 212 school facilities financed with the CIS (Institutional Development Contracts) managed by the SIMU Department.

***Agreement with Cassa Depositi e Prestiti (CDP) for the technical-economic evaluation of strategic projects***

In 2023, the two entities signed an advisory agreement to evaluate public-private partnership initiatives in areas fundamental to the city's transformation: in this context, CDP will provide technical and economic-financial advice for projects of great strategic importance that the Municipal Administration intends to implement in partnership with private entities. These include investments in waste recycling, energy efficiency, sustainable mobility, telecommunications systems and urban regeneration. The agreement is valid for 24 months and can be renewed: the parties are currently working to define a detailed programme of activities and their timing.

***Memorandum of understanding for climate risk mapping with CMCC***

At the end of 2022, the Administration signed a memorandum of understanding with the Euro-Mediterranean Centre on Climate Change (CMCC) to produce a report on climate risk mapping with a 2030-2050 horizon and identify priorities for action, together with activities to support warning systems and communication to the population. In parallel, the plan envisages dissemination and awareness-raising activities on the effects of climate change involving the structures of Roma Capitale and the stakeholders operating on the territory, through in-depth scientific workshops. Using its computing infrastructure, the Centre will work with the city to provide it with an urban resilience model for the benefit of the entire community in the area.

***Memorandum of Understanding with the CNR (National Research Centre), Sapienza University and Link Campus University***

The agreement, signed in late 2020, aims to strengthen the path towards innovation in the field of social policies in relation to the changing needs of citizens within a complex and heterogeneous urban context such as Rome. The Administration, supported by other institutions, intends to collect and systematise more data to support services, in order to obtain the most accurate picture possible of the new social situation in the Capital, with the ultimate aim of supporting the design of new and specific modes of intervention.

***Participation in AESS and Collaboration and Support Agreement***

Roma Capitale has joined the Agency for Energy and Sustainable Development by Resolution no. 99/2022 of the City Assembly. The agency will assist the city in the areas of energy saving and the promotion of renewable energy sources, climate mitigation, and the construction of the Climate City Contract within the framework of the Mission 100 Neutral Cities. It will also provide specific training within the local administration, courses and workshops on topics relevant to new technologies in the energy field. In addition, an agreement was recently signed to support the establishment of new RECs (Renewable Energy Communities) within the territory. Another core work for the development of strategies related to the greater deployment of renewable energy is the study of the maximum photovoltaic potential that can be installed in the territory, whose results are presented in module B.

***ISPRA Agreement***

As part of a groundwater monitoring project in Rome, an agreement was signed with ISPRA in 2020 to systematise data collection and processing on a six-monthly basis. By means of state-of-the-art technical instrumentation, the collected data are processed and entered into a central database thanks to a digital WebGIS application developed by ISPRA. The data can be accessed online.

***Collaboration agreement with CREA***

After the cooperation agreement for the identification of 13 suitable areas for urban, peri-urban and extra-urban forestation signed in 2022 with the Metropolitan City of Rome, another agreement followed, involving not only the Metropolitan City but also the Municipality of Rome for a planting project of the identified areas with approximately 250,000 forest plants planted per year. The project invests about 35 million euro by 2022 to promote the recovery of degraded city green areas, fight the heat island phenomenon, and improve the environmental quality of the city. The initiative is entirely subsidised by NRRP funds. CREA's role will be to provide scientific and operational support for the reforestation measures.

***Collaboration agreement with GMATICS***

As part of the project to revise the city's master plan in order to adopt structural mitigation and adaptation initiatives and projects in the urbanised areas of the city, the city of Rome took part in the URBANA project as a reference stakeholder, making itself available to share the dataset of information held by the Administration. The focus of the project is to collect geospatial data to support urban planning and green area development, identifying vulnerable urban and peri-urban areas. The company operates within the ESA - European Space Agency network.

***ESA and the Italian Space Agency for Roma Capitale***

IRIDE is one of Europe's most important Earth observation satellite space programmes carried out in Italy thanks to NRRP funding. Under the management of ESA and with the support of the Italian Space Agency (ASI), analytical data will be collected to reduce hydrogeological instability and fires, protect the coastline, monitor critical infrastructure, air quality and weather conditions. These data will be made available for the development of commercial applications by start-ups, small and medium-sized enterprises and industries, and for the local administrations themselves. Roma Capitale is involved in the project as a partner.

***Agreements with Universities***

The collaboration agreement, signed in 2022, seeks to intercept and make the most of the available NRRP resources, involving the best technical and scientific expertise of the capital's university world, including the Universities of La Sapienza, Tor Vergata, Roma Tre, the University of Tuscia and Luiss. The investments in urban regeneration, redevelopment of public real estate, ecological transition and sustainable mobility, digital transition, and social inclusion projects that will take place in the capital are numerous: creating collaborative synergies is an important element to activate and involve the academic world in the Mission's objectives as well. Some detailed agreements with specific universities:[11]

[11] This list is not exhaustive

1. **University of Tuscia**: the agreement provides for the possibility of offering new opportunities for promoting scientific knowledge in the territory and among the employees of the Municipality of Rome through the attendance of university courses by employees in service with the Municipality of Rome at special terms; the co-organisation of advanced training courses and educational and seminar initiatives directed at the staff of the Municipality of Rome, also through the involvement of researchers and professors of the University; the performance of research and collaboration activities on topics of common interest, also through the activation of the so-called 'municipal doctorates'; the development of research and collaboration activities on topics of common interest, also through the activation of 'municipal PhDs'; the possibility for Roma Capitale staff with specific professional skills to carry out teaching activities at the University; the participation of staff employed at the University in the training initiatives of the Capitoline Training School. The agreement, which started in 2021-2022, has a duration of three years.

2. **La Sapienza University:** In addition to an agreement to provide Capitoline staff with access to the various bachelor's and master's degree courses for training purposes at favourable conditions, La Sapienza University has also taken action with its Department of Political Science, Sociology and Communication to implement projects aimed at the direct involvement of citizens in the monitoring and implementation of local public services and assets. The purpose is to monitor the health of the supply of services through studies, analyses, surveys and traineeships relating to their operation

3. **Roma Tre University:** European Hedge IoT project to develop IoT technology solutions able to detect instantaneous production and consumption behaviour and use them in the management of Energy Communities.

**The multi-level governance of Let'sGOv**

The participation of Roma Capitale in the Let'sGOv Pilot (**GOverning the Transition through pilot actions** - Horizon 2020 Grant Agreement programme nr. 101036519) together with the other eight mission cities and the three technical-scientific partners AESS, the University of Bologna and the Energy Centre of Turin, is to be considered as a further action at the level of Innovative Governance thanks to which the twelve partners will work to facilitate climate neutrality in their territories according to three clusters: engagement, data and finance. New governance tools will be defined and tested by the cities within the project. Two twinning cities (Genoa and Issy Les Moulineaux) and several dozen Italian follower cities will have the opportunity not only to apply the guiding tool kits for the energy transition of their territories but also to participate in thematic workshops and training sessions within the project.

The following table shows the details of the main digitisation projects under way in the territory and their respective impacts on the governance of change. The development of digitisation projects is crucial as a means of simplification that fosters change in a more sustainable and inclusive perspective.

| C.1.2: Relationships between governance innovations, systems involved and impact pathways | | | | | |
|---|---|---|---|---|---|
| **Intervention** | **Description** | **Barriers (-) and opportunities (+)** | **Stakeholders/sector involved** | **Impact Generated** | **Co-benefits** |
| Roma Data Platform | Digital platform to collect, analyse, manage and interpret data available to the Roma Capitale Administration | (-) lack of appropriate skills for the digital transition;<br>(+) increase of territorial synergies in the ICT sector | Roma Capitale and TIM | Enhancing information assets | Improving decision-making processes |
| Platoon | Digital platform to measure consumption and verify the efficiency of heating and electricity systems and simulate self-consumption scenarios through RES installation | (-) building constraints in the historic centre;<br>(+) development of RES and reduction of dependence on fossil fuels | Roma Capitale, Politecnico di Milano, Ingegneria Informatica SPA, Poste Italiane | Mapping photovoltaic potential | Dissemination of data-driven intervention methods based on empirical evidence |
| Roma si Trasforma Platform | Digital platform that collects the main interventions managed by Roma Capitale in the areas of innovation, inclusion, sustainability and culture | (-) lack of interest;<br>(+) involvement of younger sections of the population | Roma Capitale | Involvement of the population and awareness raising | Improvement of city liveability |
| Caput Mundi Project | 335 projects for the revitalisation of the city's cultural heritage with the digitisation of cultural services and the development of user-friendly sites and apps | (-) red tape;<br>(+) creating alternative offers to traditional routes outside the city centre | Roma Capitale, Ministry of Tourism, Ministry of Culture, Lazio Region, Superintendence | Increased tourist attractiveness | Increased employment of qualified personnel |
| My Rhome | Digital platform for citizens to independently consult digital services and the processing status of open personal reports | (-) difficult diffusion among the elderly segments of the population<br>(+) process simplification | Roma Capitale | Red tape streamlining | Increased synergies in citizen services |

Table 16: Main digitisation projects and their respective impacts on the governance of change

## 4.2 Module C-2 Actions for Social Innovation

An efficient climate neutrality path cannot disregard the cross-cutting involvement of the society in which it takes place. The social reality of the city of Rome shows an unequalled complexity for the Italian context: the municipal administration has taken up the challenge, facilitating numerous co-design initiatives that have provided the opportunity to involve stakeholders seen as collateral in the process of designing a new city idea. The instrument of public debate and municipal councils was introduced in local administrations a few years ago, indirectly touching on major infrastructural and architectural works with a significant impact on the environment, cities and spatial planning. Only more recently, a growing interest on the part of citizens and non-economic stakeholders living in the territory, such as associations, non-profit and Third Sector organisations, foundations, and voluntary bodies, have wanted to make their voices heard in view of the growing fears generated by the impact of climate change on people's health and lifestyle.

In an effort to make the document streamlined, in section C-2.1 we chose to focus initially only on the main participatory pathways in the municipality that refer to individual urban regeneration, civic activism or inclusion interventions that occurred between 2022 and 2023. Though small in scale, these interventions are of fundamental importance in terms of training and knowledge enhancement, fostering local civic activism and increasing the awareness of citizens and actors in the area with respect to the territory they inhabit. Moreover, many successful initiatives have been replicated for larger-scale projects, confirming that involvement is a key element of the major transformations the city is undergoing to achieve climate neutrality goals. The following section C-2.2 focuses on larger-scale interventions across the territory of Rome.

While the first year of implementation of the CCC focused on finding a reference methodology for social innovation interventions, the next few years will be devoted to creating more and more synergies between social innovation actors. The diverse realities in the area and already engaged in the path towards neutrality, described below, are to be considered as key enabling actors of many ‘micro missions’ with specific topics such as food and food waste, green, social and environmental welfare. These additional ‘spaces of social innovation and participation’ are also to be considered as an important tool to strengthen the continuous involvement of stakeholders, giving them a stronger voice and greater space in the co-creation process.

Table 17: Social innovation and impact pathways

| C.2.1 Relationship among social innovation, involved systems and impact pathways | | | | | |
|---|---|---|---|---|---|
| **Intervention** | **Description** | **Barriers (-) and opportunities (+)** | **Stakeholders/sector involved** | **Impact Generated** | **Co-benefits** |
| AS Roma Stadium Public Debate | Discussions on the project with citizens, given its broad social relevance and impact on the area | (-) committees opposed to the project (+) increase of citizen awareness in the area | Roma Capitale, citizenship | Activate a collaborative debate on effects and impacts | Giving citizens a clear picture of the impact of interventions |
| Active citizenship in the Tor Bella Monaca and Quarticciolo neighbourhoods | Expressions of interest in the planning and organisation of initiatives functional to the revitalisation and cultural regeneration of the districts under intervention | (-) low citizen participation (-) cultural upgrading of peripheral city districts | The event is open to economic operators, organisations and non-profit bodies involved in the areas concerned | Civic Activism | Scalability of the expression of interest instrument |
| Public consultation for the creation of new cultural and innovation poles | Anonymous consultation accessible from the Roma Capitale institutional website to understand how to articulate the offer of the new centres by improving existing services and planning new initiatives | (-) difficulties in involving citizens (+) data collection on citizens' needs and expectations of public services | Roma Capitale and citizenship | Collection of proposals and initiatives from citizens | Increasing citizens' influence on the territory they inhabit |
| Urban regeneration incubators Municipality III | Participatory process implemented by citizens to propose reuse of assets and redevelopment of disused buildings | (-) low citizen participation (+) strengthening of citizen-public authority alliance | Roma Capitale, citizenship | Territorial upgrading | Increasing citizens' influence on the territory they inhabit |
| Co-planning tables for the 2024-2026 Municipal Social Plan | When drawing up the new Plan, several Municipalities organise in-depth thematic meetings during which citizens, businesses and organisations can participate and bring their proposals for action | (-) low participation; (+) gathering proposals from below | Roma Capitale, citizenship, neighbourhood Stakeholders | Civic Activism | Disseminating a bottom-up approach |
| Register of active citizenship and civic networks | Enrolment in the register connecting active citizenship organisations with institutions and citizens | (-) organisations' lack of knowledge of existing instruments (+) creation of civic networks | Roma Capitale, citizens, associations, foundations, voluntary organisations, third sector bodies | Creation of synergies between non-profit organisations | Greater awareness among citizens |
| Rome Smart City Lab' Council | Active participation tool available to stakeholders who wish to provide support to the Administration on strategic issues of innovation and digital transformation | (-) low participation (+) proposals from stakeholders | Roma Capitale, citizenship, businesses, associations, research bodies, universities, sector stakeholders | Definition of efficient operational strategies | Scalability of the council at national level with a view to widespread digitisation |

Table 17: Social innovation and impact pathways

| C.2.1 Relationship among social innovation, involved systems and impact pathways | | | | | |
|---|---|---|---|---|---|
| **Intervention** | **Description** | **Barriers (-) and opportunities (+)** | **Stakeholders/sector involved** | **Impact Generated** | **Co-benefits** |
| Participatory process on Plan for reuse of former Acea Management Centre | Meetings to introduce the Plan for the conversion of the area into a Data Centre to citizens and collect proposals from them | (-) presence of committees against the construction of the data centre (+) urban development | Roma Capitale, citizenship | Upgrading disused areas | Economic and employment development of the area |
| Debates and public meetings on RECs | Debates on the REC issue open to all citizens in various city municipalities. An online survey is also under way to assess citizens' willingness to establish RECs | (-) scepticism towards expensive new technologies (+) spreading knowledge of innovative solutions | Roma Capitale, citizenship | Local energy production | Dissemination of virtuous practices |
| Collaboration Pact for territorial co-planning | Stipulated between the Municipality VII and other non-profit associations operating in the area, it is a tool for responding to local co-design requests | (-) lack of interest on the part of citizens (+) sharing proposals | Roma Capitale, citizens, non-profit organisations, local associations | Improving degraded areas | Increased tourist attractiveness |

For these initiatives to have a real impact on the territory, widespread and clear communication is needed: the “Roma si Trasforma” website presented in 2024 fits in as a digital communication infrastructure created to bring together the main interventions managed by Roma Capitale in the themes of innovation, inclusion, sustainability and culture transformation of the city. Constant updates of the initiatives and the possibility of geolocating on the map of Rome the main works in the planning stage, those under construction and those already completed or delivered to the city, make it a usable and all-inclusive tool. Moreover, the platform is an excellent instrument where citizens can monitor public funds, including those deriving from the NRP and the Jubilee, as well as the resources provided by the Capitoline budget and private entities. Therefore, its objective is not only to increase citizens' awareness and responsibility towards the works underway in the city, but also to improve the very liveability of the city: the platform allows for the opening of further planning paths at the level of individual projects and/or specific neighbourhoods.

**C-2.2: Description of Social Innovation actions**

**Area-based Social Innovation Interventions**

***15 Municipalities for 15 Projects***

The project is part of the ‘City of 15 minutes’ plan: Risorse per Roma (RpR) (Resources for Rome), in synergy with the Department of Urban Planning and the Department of Decentralisation has identified for each Municipality different areas of urban planning and intervention based not only on what emerged from the various city councils but also from past urban projects and the municipal participatory budget. RpR has drawn up the preliminary design document submitted to the technicians in charge of drafting the master plans, which will be available from March 2023. The city council has already approved 10 of the 15 master plans. Over the coming months, the second phase will begin with the elaboration of the technical-economic feasibility projects (PFTE) of the identified public works and the organisation of participation meetings in the town halls to illustrate the master plans to citizens.

***REC Desk***

Following the signing of the memorandum of understanding between the Municipality XIII and Federconsumatori Lazio, the first REC information desk was set up and has been active since June 2023 to provide information, training and advice on the management and design of Renewable Energy Communities to all citizens resident in the Municipality of Rome. The service is delivered by the staff of Federconsumatori Lazio, which has extensive and certified experience in managing RECs technical, legal, regulatory and financial aspects. The service aims to spread awareness of these innovative forms of co-production and encourage the use of renewable natural sources, reducing the phenomenon of energy poverty and fostering social ties in the area. The service is also active via e-mail.
The Municipality I has also opened two desks open to all citizens: one to encourage the creation of RECs, the other called Progeu to support citizens and businesses in accessing EU funds. In their first two months of operation, the desks have captured the attention of a considerable number of organisations operating in the area. The objective of the municipal administration is to diffuse these realities at the municipal level, consistent with the 15-minute city vision, to consolidate proximity services.

***Roma Cura Roma (Rome Heals Rome) Project***

The Roma Cura Roma initiative is an appointment instituted and launched by Roma Capitale in 2022 with the involvement of many local partners, including Retake Roma[12], AMA, FAI, Acli, CSV, Plastic Free, and WWF Lazio: the objective is to involve individual citizens, trade associations, schools, municipalities, the public administration, the business world and all the realities of the territory to take care of the common good together by cleaning the city's streets, squares, gardens and parks. Overall, more than 400 actions were carried out in the last edition with about 323 participating associations and over 15,000 citizens involved, showing a great synergy between institutions and participating citizens. Participation in the initiative is free and open to all: the Administration encourages the submission of proposals and initiatives by citizens by filling in a form with the required information on the location, time, and any necessary equipment that will be made available by the Environmental Protection Department and AMA. The project fits coherently within the Regulation for the shared administration of the tangible and intangible commons of Roma Capitale already mentioned in Part A.

***The participatory process for Rome's Climate Adaptation Strategy***

At the beginning of 2024, the first phase of public consultation on the proposed Climate Adaptation Strategy of Roma Capitale following its approval by the City Council on 19 January 2024, begun. The strategy was developed around seven training meetings with citizens involving approximately 80-90 citizens each, workshops and interactive focus groups addressed to specific categories selected by the Administration such as workers, ethnic minorities and young people, organised within the framework of the Agora project, and also an e-mail address available to citizens, associations and interest groups where they could send their observations, indications and questions on the strategy. At this stage, the objective was to stimulate public debate and increase awareness and sensitivity on climate change: all citizens could send, until 30 April 2024, observations, proposals, requests for clarifications directly to Roma Capitale, which once discussed will become part of the Strategy itself. The agenda of appointments to discuss the strategy's analyses, priorities and measures in depth is considerable: between February and April, conferences, thematic workshops and discussion tables were organised with the participation of researchers, who worked on the cognitive part of the Strategy, Roma Capitale technicians, associations, interest groups and citizens.
Below is the list of conferences and workshops organised:

- Strengthening resilience against heavy rains and floods
- Reducing losses, strengthening the recovery and reuse of purified and metered water, ensuring security of supply
- Adapting the city to heat waves and rising temperatures
- Reducing impacts on the coastline
- Rome's economy in a climate change scenario: Impacts on economic and productive systems, inequalities
- Biodiversity and protected areas for climate crisis mitigation and adaptation
- Rome's historic centre at 40 degrees: challenges for liveability and tourist attractiveness

To ensure participation across all parties, the public consultation process was preceded by mapping the stakeholders potentially interested in the articulated adaptation topics with the aim of informing

[12] Retake Roma is a non-profit foundation active in protecting the environment and caring for the commons, promoting beauty, liveability and urban regeneration. It encourages the dissemination of civic sense and the responsibility of each citizen to contribute to the civil and economic growth of Italy through projects targeting citizens, schools and businesses. At the same time, the association actively participates in the public debate on the sustainable development of cities, the valorisation of public goods, the active involvement of citizens and the efficiency of services.

them of the process and involving them in the meetings. Stakeholders were identified, mapped and prioritised, analysing their influence and interest in the project. In this regard, the research activity addressed associations, committees, companies, representatives of the world of professions, research bodies and universities that have in their statutes or sphere of activity the environment, the territory, the monitoring of water resources and all those aspects related to the causes and effects of climate change on the population. From this analysis, a framework emerged through which resource allocation priorities, communication strategy and project direction could be established through the eyes of the stakeholders.

At the same time, discussion tables were organised with stakeholders to open a debate on analyses and measures, deepen projects and interventions, and involve the various actors in the implementation. The thematic tables will continue beyond the approval of the Adaptation Strategy, touching also on climate mitigation actions in the framework of the implementation of the SECAP and the drafting of this Climate City Contract. The tables have been organised with business organisations, the city agricultural conference, environmental and third sector associations, trade unions, research bodies and universities, and infrastructure, energy and technology network companies. Therefore, the implementation plan of the Strategy is intended to fit in with the CCC's pathway in the definition of working tables and the identification of strategies and priorities by all stakeholders with regard to climate adaptation and mitigation issues.

The participatory pathway is part of the European project **AGORA** (A Gathering place to cO-design and co-cReate Adaptation), financed under the European Commission's Horizon programme whose main ambition is to promote societal transformation processes in different social, economic and political contexts through cross-disciplinary tools and approaches. AGORA aims to promote best practices, innovative approaches, policy tools and governance mechanisms to meaningfully and effectively engage communities and regions in climate action, accelerating and scaling up the adaptation process to build a climate resilient Europe.

Face-to-face meetings were held to present the strategy and explore the most relevant issues and priorities, and to gather feedback from organised stakeholders and citizens attending the meetings. For this exchange to be effective, the face-to-face meetings were structured in such a way as to give all those present the opportunity to present their ideas and to collect requests and comments in an orderly and comprehensive manner by a facilitator. In addition, the four conferences were video recorded specifically to capture the contributions that emerged in presence at a later stage of elaboration, and the scientific presentations discussed were made available with the aim of increasing the exchange of information.

***The Municipal Councils***

Most of Rome's city halls have councils, a consultative body of the municipality established for different purposes according to the needs of the area in which it operates, such as social promotion, integration, territorial protection, and environmental and social volunteering. Hence, they are participation bodies open to all citizens to enhance and promote the participation of free associations and citizens' bodies in the administration through consultation activities. Of particular interest in terms of synergy with the CCC are the councils for young people, schools, the protection of green spaces, social integration and the defence of minorities. Below are the main councils that exist to date and the specific municipalities to which they refer:

- City Hall I: council for trade and crafts policies; council for policies in favour of people with disabilities; council for social voluntary work.

- City Hall II: council of associations working in the field of the protection of green spaces and urban decorum; council for people with disabilities.
- City Hall VII: council for the social integration of foreign citizens; school council
- City Hall IX: cultural council; women's council; youth council
- City Hall XII: Valle Galeria environmental council

The consultations are established by the municipal council and have a duration established by the same municipal council, which may revise their objectives and aims according to local needs.

***Observatories***

These are auxiliary bodies set up by the City Assembly whose aim is to acquire information or make specific assessments on individual problems of collective interest or particular aspects of city life. Given their specificity, they are linked to the city municipalities on the basis of local needs and peculiarities: the results of the observatories' consultations are available for possible projects on a broader city scale. There are two observatories dedicated to the topic of waste: **the 'Towards Zero Waste Observatory'** of City Hall I and **the 'Permanent Waste Observatory'** of City Hall VII. The main objectives are to monitor, within the municipal context, the situation of waste and urban decency, make data on the objectives achieved available, collect reports and indications from citizens, and promote the dissemination of environmental culture, reuse and recycling of materials. At the end of 2022, the membership phase of the above-mentioned observatories was completed for the 2021-2025 term of office.

Another observatory is the one linked to the Valle Galeria area, called the **'Participatory Environmental Observatory of the Valle Galeria':** it deals with the protection and enhancement of natural resources, environmental quality and the quality of air, water and soil, the dissemination of environmental monitoring data, the promotion of sustainable lifestyles and mobility, water and energy saving in line with the critical issues of the area, which sees the presence of quarries, industries with a high environmental impact (cement factories), gasifiers, landfills and former refineries. The observatory is part of the local policy on the above-mentioned issues, providing the administrative bodies of the Municipality of Rome XII with non-binding proposals and opinions, promoting information, awareness-raising, and training initiatives for citizens, and gathering the requests, opinions, and problems of citizens and representing them to the competent institutions. It consists of a representative for each company whose plants are located and have an environmental and health impact in the Valle Galeria area, i.e. CO.LA.RI. SpA, Raffineria di Roma SpA, ENI SpA, Praoli Oleodotti Italiani SPA, SUDGAS SpA DE.CO. S.C.A.R.L. Municipal Deposit, Lampogas SRL, Terna SpA, Consorzio Malagrotta. Institutional representatives include the Municipality of Rome and the City Hall XI, the Lazio Region, ARPA Lazio and the Azienda USL Roma. On many occasions the Observatory has availed itself of the collaboration, free of charge, of external experts who, with their expertise, can support the Observatory and the City Hall on a technical and scientific level for environmental issues within their competence.

***The Food Council***

The objective of the Food Council is to define a Food Plan outlining the agri-food policy of the city of Rome for the coming years, inspired by the principles of circularity and just ecological transition. The constitution of the council represents an opportunity for inclusive participation in which civil society, institutional actors and sector associations meet and dialogue to define the Plan. The participating associations have already been identified through a public call, and the first public meetings began at the end of 2023. The Council will be structured as a city council and will be able to formulate

proposals and opinions in the drafting of the Plan as well as in local food policies, supporting the administration in achieving its objectives.

The work on food policy began in the early months of 2022 and was structured on 7 thematic tables that worked on the different aspects of policies related to the right to access healthy food, school catering and food education, distribution and logistics, the valorisation of territorial supply chains, and the cultural gastronomic promotion of quality.

A great effort has been made on the issue of reducing food waste, one of the fundamental axes of Rome's Food Policy actions, with solidarity initiatives in favour of the underprivileged and by establishing collaboration networks with school canteens, neighbourhood markets and associations engaged in recovering food surpluses. Another important line of work led to Rome's memberships in national associations such as the Oil Cities and Wine Tourism Municipalities and participation in major events such as SlowFood's Salone del Gusto in Turin, the Vinitaly international fair in Verona and the Coldiretti Village at the Circus Maximus.
The first phase of Rome's Food policy path had important milestones with the approval of the regulation of the Food Council by the City Assembly in April 2023 and the official establishment of the Council through a call for tenders in June 2023 to which 147 stakeholders in the agri-food sector adhered: trade associations, business networks.

***Projects to reduce food waste***

The ‘Stasera offro io’ (Tonight It's on Me) initiative promotes the fight against food waste through a dedicated app: the project was defined following a two-year agreement between Roma Capitale and the Associazione Banco Alimentare Roma and involves all the city halls. The project involves private operators of the food system (bakeries, delicatessens, supermarkets, markets, bars, restaurants, canteens, food industries) for free redistribution projects of surpluses.

The 'Tenga il resto' (Keep the Rest) project also promotes good practices for the recovery of uneaten food to reduce food waste through the distribution to restaurants of a special aluminium tray with which customers can take home uneaten food, preventing it from being wasted. The project is promoted by the Waste Cycle Department with the support of Consorzio Nazionale Imballaggi Alluminio - CIAL, which has made 300,000 trays available to participating restaurants. Other participating associations include the Federazione Pubblici Esercizi di Roma e Provincia, the Federazione Italiana Esercenti Pubblici e Turistici di Roma e Lazio and Slow Food Italia.

***The Participatory Balance Sheet***

The Participatory Balance Sheet represents a concrete example of how citizens can have an active and central role in the decisions that affect their city, contributing directly to the definition of priorities and allocation of resources. The questionnaire, available online, collects impressions, ideas and suggestions from citizens to take stock of what has been done in the past and plan the future together. The survey is part of the research project coordinated by the Department of Business Administration of the University of Roma Tre ‘How to transform participatory budgeting into an effective and lasting practice of good governance?’. This experience, financed by NRRP funds, builds on the previous experience that took place from June to October 2019 in which, after an information phase to citizens through various communication channels, citizens' proposals were presented and subsequently assessed by the Administration's technical table in their technical and financial feasibility. The approved proposals were subjected to a final online vote by citizens, who were able to express a maximum of three preferences. As a result of the vote, municipal rankings were approved, from which

the projects admitted to funding were identified until the budget was fully allocated. A total of 65 proposals were accepted for funding and included in Roma Capitale's economic planning documents.

***Neighbourhood Committees***

Neighbourhood Committees are recognised by the City Halls of Roma Capitale as democratic bodies of active participation for the general interests of the community. Below is a list of the Committees that have been set up and a brief description of their commitment in the area.

**Table 18: Neighbourhoods committees**

| Name of the Committee | Description of commitment |
|---|---|
| Movimento Cittadini Tufello (Tufello Citizens' Movement) | Promoting the redevelopment of the neighbourhood, from the road system to the environment |
| Quartiere Serpentara (Serpentara Neighbourhood) | Safeguarding the territory and public greenery. Promoting sociocultural integration between citizens. Improving quality of life, mobility. Stimulating and monitoring the work of public institutions. |
| Comitato dei Cittadini Nuovo Salario (Nuovo Salario Citizens' Committee) | It deals with safeguarding the greenery and all the problems of viability and street cleaning in the neighbourhood. |
| Comitato di Quartiere 'Val Melaina' (Val Melaina' Neighbourhood Committee) | It takes care of safeguarding the environment and everything related to social issues in the neighbourhood |
| Comitato di Quartiere 'Salviamo Talenti' ('Saving Talenti' Neighbourhood Committee) | It works to protect and promote the neighbourhood from an environmental, social and cultural point of view |
| Comitato di Quartiere "Viale Lina Cavalieri ('Viale line Cavalieri' Neighbourhood Committee) | It deals with electro smog issues |
| Comitato di quartiere "Vigne Nuove" ('Vigne Nuove' Neighbourhood Committee) | It solves problems in the neighbourhood and organises socio-cultural events |
| Comitato di quartiere 'Sacco Pastore - Espero' ('Sacco Pastore - Espero' neighbourhood committee) | It deals with safeguarding and solving the problems of the neighbourhood |
| Comitato di Quartiere 'Talenti' ('Talenti' Neighbourhood Committee) | Enhancing the neighbourhood in the areas of transport, urban maintenance and sports |
| Comitato di quartiere "Porro Lambertenghi" ('Porro Lambertenghi' Neighbourhood Committee) | Enhancing the neighbourhood with regard to improving the environment and solving the neighbourhood's problems. |
| Comitato "Parco Sannazzaro" ('Sannazzaro Park Committee') | Protecting and safeguarding Sannazzaro Park |
| Comitato "Parco Aniene Città Giardino" ('Aniene Park Città Giardino Committee') | Safeguarding the Aniene valley nature reserve |
| Comitato Indipendente Valmelaina (Valmelaina Independent Committee) | It handles neighbourhood issues with the aim of social solidarity and voluntary work with the promotion of cultural activities |

| | |
|---|---|
| Comitato JonioCervialto (JonioCervialto Committee) | Promoting knowledge of the neighbourhood through conferences and debates |
| Comitato di quartiere via Colli della Serpentara via Virgilio Talli ('Via colli della serpentara via virgilio talli' neighbourhood committee) | Promoting public environment in the neighbourhood areas |
| Comitato per il Parco delle Sabine (Sabine Park Committee) | The Committee works to safeguard the Sabine area from an environmental, cultural and social point of view |
| Comitato Città Giardino (Città Giardino Committee) | Environmental, social and cultural protection and promotion of the 'Città Giardino' area |
| Comitato Settebagni (Settebagni Committee) | Defence and protection of the quality of life of the inhabitants of the Settebagni district |
| Comitato di Quatiere Fidene (Fidene Neighbourhood Committee) | Upgrading of the Fidene neighbourhood Green Areas Mechanical Biological Treatment |
| Comitato di Quartiere Le Valli - Conca D'Oro (Le Valli - Conca D'Oro Neighbourhood Committee) | Daily civic activity in the Valli - Conca D'Oro area and, in particular circumstances, also in the entire City Hall III |
| Comitato di Quartiere 'Talentinsieme' ('Talentinsieme' Neighbourhood Committee) | Promotion of the neighbourhood in terms of improving the quality of life of its inhabitants and business operators |
| Comitato di Quartiere 'Antamoro' ('Antamoro' Neighbourhood Committee) | Bringing together residents for neighbourhood development, collaborating with institutions, promoting cultural, social, technical, economic, artistic and moral initiatives that affect neighbourhood life; collaborating with neighbouring organisations, caring for and improving the neighbourhood in terms of decorum and quality of life, promoting the development of public services, safeguarding and maintaining green areas, representing citizens' demands, monitoring and reporting situations of degradation, supervising the development of private and public services. |
| Comitato di Quartiere 'Bufalotta' ('Bufalotta' Neighbourhood Committee) | Promoting initiatives in favour of the community, enhancing green areas, upgrading the neighbourhood in cooperation with the institutional bodies of the Municipality and the City Hall |
| Comitato Salviamo Piazza Sempione – APS ('Saving Piazza Sempione' Committee) | Civic defence, protection of rights, enhancement of the cultural heritage and landscape with a focus on the areas of the Monte Sacro - Città Giardino neighbourhood and City Hall III), cultural, educational and social activities. |
| Comitato di Quartiere Montesacro Ansa dell'Aniene ('Montesacro Ansa dell'Aniene Neighbourhood Committee') | Enhancing the neighbourhood in terms of environmental improvement - solving neighbourhood problems. |
| Comitato famiglie Utenti Centro Tangram (CFU) (Family Committee Tangram Centre Users (CFU) | Liaising with stakeholders in the area to represent the needs of people with disabilities attending the rehabilitation services: semi residential modules, developmental age, outpatient clinics of the Tangram Centre-Idea Prisma 82 Social Cooperative of City Hall III. It represents a source of information and a supportive reference for the families of the rehabilitation centre users, including at territorial level through relations with the local Health Authority (ASL), the City Hall, the Region and the Permanent Council for the problems of citizens with disabilities - Rome City Hall III. Promoting self-help initiatives within families. |

| | |
|---|---|
| Parents Committee for Inclusion - City Hall III | Promoting school and social inclusion with disabilities in all its forms |
| Comitato di Quartiere Castel Giubileo ('Castel Giubileo' Neighbourhood Committee) | Providing information on administrative and social choices that affect the community, acting as interpreters and promoters of citizens' interests before institutions and public administration; promoting actions aimed at improving the quality of life in the neighbourhood |
| I.D.E.A. Onlus | IDEA's aim is to create, in an integrated and coordinated manner, an entity for the widest sharing of information between the disabled and the PA, trade associations and representatives of the world of professions aimed at streamlining and transparency of administrative procedures and the construction of a correct system of relations between the public and private sectors with particular attention and protection is given to the deaf with the general and specific orientation but directing them integrating and encouraging them towards solutions that envisage the development of an individual conscience that recognises itself in the aggregative group of associations and coordination realities, including international ones, thus succeeding in removing them from situations of serious socio-cultural marginalisation and isolation that promote the cultural growth and improvement of the disabled person. |

***Capitoline Training School***

Starting in December 2017, following the approval of the City Council, the Capitoline Training and Refresher School is active and available to Roma Capitale employees and management, with the main objective of offering opportunities for professional growth and qualification in a constantly evolving regulatory context and for improving services for citizens.
The School's areas of competence are:

- continuous training and professional refresher courses in the various areas of the Capitoline administration and for newly recruited staff;
- managerial training, health and safety in the workplace, innovation and digitalisation, legality, transparency and anti-corruption;
- agreements, seminars, meetings and collaborations with research centres, professional associations and training schools to broaden the School's training offerings in a more specific and sectorial manner.

The School's training programme, drawn up every three years, is shared directly with all the directors and facility managers to detect training needs on the ground. The **Marcoaurelio** e-learning platform makes the training offer available digitally.

***Logistics Living Lab***

The Logistics Living Lab (LLL) is a participatory co-creation laboratory that systematically involves the logistics actors in the experimentation and implementation of the innovative solutions envisaged in the new PUMS (Sustainable Urban Mobility Plan). The Living Lab represents an ecosystem where all realities can actively contribute to the definition of organic policies and the most effective projects for the city. The project is coordinated by **TRElab** (Transport Research Lab) of the University of Roma Tre: its aim is to aggregate, create synergies and support innovative ideas for safer, cleaner and more efficient urban logistics. The Logistics Living Lab was launched in February 2020: representatives of Rome's logistics players, including Confcommercio, Confederazione nazionale dell'artigianato e della

piccola e media impresa, UPS Italia, Spedire Roma, as well as the Local Police of Roma Capitale, took part in the event.

***Roma Technopole***

As a result of Roma Capitale's concession, free of charge, of an area of approximately 7,500 square metres, the first phase of the realisation of the technological pole overseen by the Rome Technopole Foundation has begun. The project brings together 7 universities in the region, 4 public research organisations, as well as Unindustria, the Lazio Region, the Municipality of Rome, the Chambers of Commerce of Rome, Latina-Frosinone, and Rieti-Viterbo, and some 20 industrial groups and enterprises. It aims to create an innovation ecosystem thanks to the funding provided by the MUR under the NRRP to feed the research, training, and innovation chain in the three main areas of interest: energy transition, digital transition, and health and biopharma. All the buildings will be constructed using the most advanced technological solutions, self-sufficient in terms of energy, based on the circularity of resources and capable of generating clean energy through the installation of photovoltaic systems, innovative hydrogen systems and the use of geothermal sources.

***Rome Energy Desk for citizens***

Ufficio Scopo Clima has recently launched a tender for the launch of the online energy desk 'Roma Sportello Energia per i cittadini' which will be active from January 2025 through a dedicated website that will act as an information hub and interactive tool for citizenship containing all the information material to be made available to citizens. The site will also include a FAQ area, direct access to the online help desk (which will guarantee telematic support and continuous assistance to users through online forms and dedicated e-mails) and popular multimedia content (infographics, brochures, video pills) to simplify the understanding of certain topics and to be used and disseminated by both citizens and the staff of the Capitoline Municipalities.

The online Help Desk Service will guarantee telematic support and continuous assistance to users through online forms and dedicated e-mails for 24 months. The site will also contain informative material (infographics, brochures, video clips) to simplify the understanding of certain issues and to be used and disseminated by both citizens and the staff of the Capitoline Municipalities.

During 2025, thematic webinars will also be organised on the main topics (energy communities, bill reading, energy efficiency and renewable energy sources, etc.), which will be detailed according to the main themes that emerge during the help desk activity.

For the purpose of enabling an autonomous management by the Capitoline administration of the online help desk and the continuation of the project, an ad hoc training course will be developed for the Capitoline staff.

The Energy Desk has the following objectives

1. Awareness-raising and information on domestic energy consumption and savings, support in reading energy bills and identification of opportunities for savings and optimisation in terms of efficiency and costs;
2. Information and support on available renewable energy consumption and/or production options;
3. Information on facilitations and contributions for reducing energy expenditure such as 'home bonus', 'Ecobonus', 'Superbonus' incentives, home appliance bonus, contributions on renewable energy sources.

The Energy Desk will also have the objective of promoting Renewable Energy Communities (e.g. information on the concept of renewable energy community and other configurations of widespread self-consumption and associated benefits), also by networking existing territorial realities.

By 2025, the activation of a travelling one-stop shop is planned, which will tour the main squares of each municipality during the year, with the aim of promoting awareness and reaching out to all citizens, but also strengthening the link between the local community and the administration, promoting constructive collaboration to address the energy challenges of the territory.

***ECT – Enabling City Transformation***

The Net Zero District NZD project is related to a NZC call, presented by 4 out of 9 Italian cities involved in the Mission (Parma, Prato, Bergamo and Rome) with the technical and scientific support of AESS. The goal of the project is to bring forward the potential innovation in energy and water management into districts to strengthen competitiveness. To reach this goal, part of the financial sources will be required by the stakeholders' engagement into the Tiburtina area, the area under study by the Municipality of Rome. Some of them have been already involved through the CCC (Acea ATO2, Terna, RFI, Leonardo, BASF, Gentilini, Centro Agro-alimentare Romano, ARETI) and others will be. According to the timeframe, the project should start in April 2025 and will last 18 months. The contract is about to be signed. One of the cores aims of NZD is to strengthen collaborative relationships between public and private sector. A direct and expected outcome of the project is building **co-designing solutions** within the industrial sector for sustainable energy and water management at the district level.

# 5 Scenarios and Next Steps

**Strategy for the next CCC and future scenarios**

Decarbonisation will accompany the city's work over the next few years, through periodic verification of results, monitoring of emissions, updating and integration of actions on the basis of new opportunities that may open up to accompany the emission reduction trajectory.

In particular, the phase of study and in-depth analysis of possible intervention scenarios and their results does not end with the approval of the Climate City Contract. In the coming years, it will indeed be necessary to deepen possible intervention scenarios and partnership models for financing to overcome the financing barriers of the planned interventions. Moreover, simulations of the impact that the dissemination of certain technologies could have in strategic sectors, such as construction and production from renewable sources, mobility, management of the electricity distribution network and storage systems, and the possible contribution of $CO_2$eq absorption from forestation measures, will be indispensable.

A priority will also be to continue the work started with the city's stakeholders. To accompany and support the choices made and the planned mitigation and adaptation actions, to broaden participation to other economic, industrial and social actors. The discussion on the strategies and actions envisaged by the Climate City Contract will be organised in working groups and will allow the feasibility to be verified and proposals to be accepted, and opportunities to improve the effectiveness of the envisaged policies to be explored in the various areas and sectors. The processes of stakeholder engagement started by Roma Capitale for the Climate Adaptation Strategy and the Climate City Contract will be increasingly cross-referenced and intertwined, due to the added value that an integrated approach can bring in addressing the problems and needs of neighbourhoods where the impact of heat waves and flooding is getting more and more relevant, involving and sharing with the city's actors the path undertaken and improving its effectiveness.

**1 Climate Governance Innovation**
Climate neutrality is a goal that involves every sector of the administration and every programming and planning tool and influences institutional governance with the relationship with municipal territorial structures, European, national and regional institutions, the Metropolitan City, and the relationship with stakeholders. Collaboration between structures and bodies, commitment to shared objectives, willingness to discuss choices with all economic and social actors, and continuous and transparent monitoring of results are all decisive factors for effective governance and the achievement of climate neutrality targets. Work will be carried out on this point, reaffirming the central role of the Climate Office and the whole Transition Team in a co-designing and listening logic established at the beginning of the pathway to neutrality.

**2 Integrated Approach to Climate Mitigation and Adaptation Policies**
The climate crisis acceleration is manifesting its effects in Rome, as in every part of the world, with increasingly evident economic, social and health consequences. The Adaptation Strategy approved by Roma Capitale highlights the growing risks and impacts in a 2050 scenario, with priorities for action. Climate neutrality policies must overlap with adaptation policies as the two issues are now inextricably intertwined where action is taken in neighbourhoods, on energy and infrastructure networks, and water. Thus, an integrated approach achieves more effective results.

**3 An Inclusive Transformation of the City**

The transition to a zero-emission energy model must concern all citizens and every part of the city. Transformation projects of neighbourhoods and buildings, public spaces and infrastructures for the climate transition must place people and communities at the centre, starting with the most fragile segments. After all, implementing interventions that reduce energy expenditure and creating opportunities to move sustainably, bringing quality projects, investments and activities is necessary and most urgent among fragile communities, and it also creates the greatest benefits. An inclusive approach in which no one is left behind is the most effective in forging acceptance of the energy transition, making people understand its economic and social as well as environmental benefits. The methodology used for citizen pathways during the drafting and sharing of the Adaptation Strategy has become the Roma Capitale chosen methodology to implement present and future social innovation and governance pathways also within the CCC. Its application will ensure the city's ongoing inclusion in the pathway to 2030 neutrality.

# 6 Annexes

ROMA

2030 Climate Neutrality Action Plan

NET ZERO CITIES
EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

# Annex 1

*B-2.1 - Detailed description of all the actions collected within the portfolio, grouped by sector*

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Social housing boiler replacement | 1 | Department of Heritage and Housing Policies | Social housing boiler replacement | Replacement of old autonomous boilers in social housing accommodation. Approximately no. 40 boilers/year |
| PPP for the redevelopment of social housing assets serving REC | 2 | Department of Heritage and Housing Policies | PPP for the redevelopment of social housing assets serving REC | Energy efficiency and consumption decarbonisation interventions in social housing properties, including the construction of systems for the production of energy from renewable sources to be allocated to REC (integration of thermal power plants with heat pumps; photovoltaic installation) |
| PPP for integrated Energy-Management-Maintenance and redevelopment service | 5 | Department of Infrastructure Development and Urban Maintenance | PPP for integrated Energy-Management-Maintenance and redevelopment service | Relamping and installation of photovoltaic systems on the roofs of the buildings of Municipality VI and of the 3 schools belonging to the "Melissa Bassi" Comprehensive Institute |
| First phase CIS - Institutional development contract | 10 | Department of Infrastructure Development and Urban Maintenance | First phase CIS - Institutional development contract | 111 energy efficiency and redevelopment interventions on municipal buildings (schools, offices, libraries, etc.) located throughout all the Municipalities of Rome |
| Second phase CIS - Institutional development contract | 11 | Department of Infrastructure Development and Urban Maintenance | Second phase CIS - Institutional development contract | 101 energy efficiency and redevelopment interventions on municipal buildings (schools, offices, libraries, etc.) located throughout all the Municipalities of Rome |
| Tor Bella MonacasSocial housing redevelopment | 12 | Department of Infrastructure Development and Urban Maintenance | Tor Bella MonacasSocial housing redevelopment | Urban recovery program as part of the Pinqua project, which includes the redevelopment of approximately 1,200 apartments in an existing housing complex and the construction of 20 new homes |
| Corviale social housing redevelopment | 13 | Department of Infrastructure Development and Urban Maintenance | Corviale social housing redevelopment | The Program of Urban Integration (PUI) of the Corviale district which aims at urban redevelopment, structural improvement, energy efficiency, a new distribution of internal spaces and the elimination of architectural barriers. These interventions will promote liveability and better use of the places, with the aim of improving the quality of life of the citizens who live there. |
| Pineto social housing redevelopment | 14 | Department of Infrastructure Development and Urban Maintenance | Pineto social housing redevelopment | Energy efficiency interventions (coating, fixtures) on 5 buildings, with 72 apartments each |
| Photovoltaic installation in REC | 15 | Department of Infrastructure Development and Urban Maintenance | Photovoltaic installation in REC | Construction of 15 photovoltaic systems in 15 schools, one for each Municipality of Rome Capital, in order to establish Renewable Energy Communities |
| Porto Fluviale social housing redevelopment | 16 | Department of Infrastructure Development and Urban Maintenance | Porto Fluviale social housing redevelopment | Redevelopment of 2 buildings (54 apartments) as part of the Porto Fluviale RecHouse project launched by Roma Capitale, aimed at the conservative renovation and energy efficiency of the former barracks bound by the MiBAC |
| Cardinal Capranica social housing redevelopment | 17 | Department of Infrastructure Development and Urban Maintenance | Cardinal Capranica social housing redevelopment | Demolition of the former school buildings currently present in Via Cardinal Capranica and subsequent construction of a new public residential, social housing and cohousing complex, for a total of 70 homes. |
| Consip SIE4 Convention | 19 | Department of Infrastructure Development and Urban Maintenance | Consip SIE4 Convention | Reduction of methane consumption through maintenance of heating systems and installation of more efficient heating and cooling systems |
| Redevelopment of theatres, cinemas and museums | 20 | Department of Infrastructure Development and Urban Maintenance | Redevelopment of theatres, cinemas and museums | Improve energy efficiency in cinemas and theatres, including: Argentina theatre, Costanzi theatre, Torlonia theatre, Quarticciolo theatre, Tor Bella Monaca theatre, Del Lido theatre, Casa del Cinema, Nuovo Cinema Aquila, India theater |
| Promote sports facilities and social inclusion | 21 | Department of Major Events, Sport, Tourism and Fashion | Promote sports facilities and social inclusion | Regeneration and plant adaptation of the Colli d'Oro Park, the Caruso sport hub and the Pala Fijlkam plant |
| PUI 26 - Santa Maria della Pietà Wellness Centre | 22 | Department of Infrastructure Development and Urban Maintenance | PUI 26 - Santa Maria della Pietà Wellness Centre | Urban Integrated Program for Santa Maria della Pietà area, energy renovation and interventions on municipally owned pavilions |
| Technopole | 23 | Department of Environmental Protection | Technopole | Construction of a new NZEB building which will host the Technopole, a technological hub which collects knowledge and expertise from enterprises and research centers |
| Redevelopment of the housing offer for temporary housing | 24 | Department of Social Policies and Health | Redevelopment of the housing offer for temporary housing | Widespread energy efficiency interventions (coating, fixtures, heating systems, etc.) within the project "An healing roof" |
| Redevelopment interventions of post stations to transform them into social reception centres | 25 | Department of Social Policies and Health | Redevelopment interventions of post stations to transform them into social reception centres | Interventions to reduce the transmittance from the external walls (replacement of fixtures) and installation of heat pumps, photovoltaic panels and solar panels on the roof |
| Interventions to create facilities for non-self-sufficient elderly people | 26 | Department of Social Policies and Health | Interventions to create facilities for non-self-sufficient elderly people | Structural maintenance work at Casa Vittoria housing community |
| Installation of photovoltaic energy systems | 27 | Rete Ferroviaria Italiana S.p.A. | Installation of photovoltaic energy systems | In line with the company Energy Plan, to promote the use of renewable energy, it is planned to build photovoltaic systems at the RFI Termini, Tiburtina and Portonaccio stations, for a total of approximately 1.5 MWp |
| Installation of photovoltaic panels Casal Selce | 28 | Ama S.p.A. | Installation of photovoltaic panels Casal Selce | Installation of photovoltaic panels on a total surface area of 9,000 m2, inside the new biodigester plant with an estimated production of 1.97 GWh/year. |
| Installation of photovoltaic panels in Cesano | 29 | Ama S.p.A. | Installation of photovoltaic panels in Cesano | Installation of photovoltaic panels on a total surface area of 9,000 m2, inside the new biodigester plant with an estimated production of 1.97 GWh/year. |
| Updating and redevelopment of institute and collateral buildings | 36 | Ama S.p.A. | Updating and redevelopment of institute and collateral buildings | The buildings are intended for both industrial and service activities; the objective is redevelopment to reduce climate-changing emissions |
| Efficiency of energy consuption though management systems | 37 | Ama S.p.A. | Efficiency of energy consuption though management systems | Detection systems for turning lights on/off and heat/cooling emission; change in the equipment through energy carriers with lower consumption elements (e.g. replacement of illuminated devices with LED devices, commissioning of heat pump boilers, power factor correction, etc.); passive safeguards (e.g. insulation, shading aids, etc.); training for users about the ecological footprint of the buildings and equipment in use. |
| Digital platform for analyzing and reporting energy and water consumption | 38 | Ama S.p.A. | Digital platform for analyzing and reporting energy and water consumption | Management of electricity, gas and water users on more than 500 delivery points managed by AMA |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Measurement of electricity consumption | 39 | Ama S.p.A. | Measurement of electricity consumption | Monitoring of consumption activities of civil and industrial electricity service meters; 20 electricity interception and measurement points are currently installed |
| ISO 50001 energy management certification | 40 | Ama S.p.A. | ISO 50001 energy management certification | Monitoring and verification of the use of electricity through specific procedures according to the certification |
| Energy diagnosis update | 41 | Ama S.p.A. | Energy diagnosis update | Drafting of the Energy Diagnosis every 4 years, according to ENEA methodology |
| Revamping solar thermal fields for domestic hot water production | 43 | Ama S.p.A. | Revamping solar thermal fields for domestic hot water production | Revamping of 13 solar thermal systems currently installed for the production of domestic hot water for changing rooms and toilets, in order to reduce natural gas consumption |
| Repowering solar fields for DHW production | 44 | Ama S.p.A. | Repowering solar fields for DHW production | Installation of new solar thermal systems for the production of DHW for changing rooms and toilets, in order to reduce natural gas consumption |
| Activation of photovoltaic solar fields | 45 | Ama S.p.A. | Activation of photovoltaic solar fields | Installation of five photovoltaic systems already installed for the production of electricity (4 of 20 kWp and one of 10 kWp), with attached storage system and charging stations for vehicle service |
| Project financing for installation of photovoltaic solar fields | 46 | Ama S.p.A. | Project financing for installation of photovoltaic solar fields | Construction of three new photovoltaic systems (two count 202 kWp and one 100 kWp), integrated with a storage system (1000 kWh) and charging stations for AMA vehicles |
| New photovoltaic fields on buildings | 47 | Ama S.p.A. | New photovoltaic fields on buildings | Planned installation of new photovoltaic systems and respective storage systems |
| Caritas Rome photovoltaic installation | 48 | Ama S.p.A. | Caritas Rome photovoltaic installation | Installation of photovoltaic system for the production of renewable electricity for self-consumption on a property for use by Caritas Rome. |
| Photovoltaic installation on plant building | 49 | Ama S.p.A. | Photovoltaic installation on plant building | Construction of a photovoltaic system with electricity production on a building for plant use for the mechanical and biological treatment of waste (1.4 MWp) |
| Redevelopment of the Law Library building | 51 | Università degli Studi "La Sapienza" | Redevelopment of the Law Library building | Redevelopment interventions on the electrical and mechanical systems of the unified law hall |
| Redevelopment of the new Letters library building | 52 | Università degli Studi "La Sapienza" | Redevelopment of the new Letters library building | Demolition and construction of a new building. Almost all of the libraries in the humanities faculty will be brought together inside the new building, located in the campus area overlooking Piazzale Aldo Moro. |
| Energy redevelopment of the General Services Building | 53 | Università degli Studi "La Sapienza" | Energy redevelopment of the General Services Building | Energy redevelopment of the complex called Palazzo Servizi Generali, with installation of 80 kWp of photovoltaic system |
| Construction of university apartments via Osoppo | 54 | Università degli Studi "La Sapienza" | Construction of university apartments via Osoppo | Construction of residences and related services for university students through the redevelopment interventions of the real estate complex located between Via Osoppo, Piazza Confienza, Viale dell'Università and Viale del Policlinico |
| Energy renovation of mechanical and electronic systems of 108 classrooms | 55 | Università degli Studi "La Sapienza" | Energy renovation of mechanical and electronic systems of 108 classrooms | The redevelopment involves renovation of the floors, fixtures, mechanical and electrical systems with particular attention to the replacement of the lighting systems. The air conditioning of the spaces and the insertion of audiovisual systems will be carried out. The new plants will be designed to be controlled by a BMS system. |
| Replacement of centralized boilers with heat pumps | 56 | Università degli Studi "La Sapienza" | Replacement of centralized boilers with heat pumps | Replacement with heat pumps and consumption monitoring system of: two steam boilers in the business office; four oil boilers in the building in via Salaria 113 and in the Human Anatomy faculty |
| Installation of RES systems completed | 57 | Università degli Studi "La Sapienza" | Installation of RES systems completed | Approximately 1000 kWp of photovoltaic power installed on several buildings |
| Installation of RES systems under construction | 58 | Università degli Studi "La Sapienza" | Installation of RES systems under construction | Approximately 800 kWp of photovoltaic power currently being installed on several buildings |
| Installation of cogeneration plant | 59 | Università degli Studi "La Sapienza" | Installation of cogeneration plant | Installation of two cogenerators, the first in the Ex Regina Elena complex and the second in the Faculty of Orthopaedics, with a total electrical power generated of 830 kWe |
| Relamping external lighting | 60 | Università degli Studi "La Sapienza" | Relamping external lighting | Relamping external lighting on Piazzale Aldo Moro campus |
| Installation of consumption monitoring and control systems, building automation | 61 | Università degli Studi "La Sapienza" | Installation of consumption monitoring and control systems, building automation | Implementation of active control systems, or Building Automation, implementing strategies for the pursuit of Active Energy Efficiency, i.e. energy management that is efficient not only in nominal terms, but above all when the basic conditions of the building vary (therefore depending on crowding, external temperature, natural brightness, etc.). |
| Redevelopment of electricity grid transformation cabins | 62 | Università degli Studi "La Sapienza" | Redevelopment of electricity grid transformation cabins | Redevelopment of the transformation cabins and the electricity distribution network with installation of a monitoring and control system |
| New solar thermal system | 63 | Università degli Studi "La Sapienza" | New solar thermal system | Construction of the new solar thermal system serving buildings A and B of the Sapienza Sport Service Centre |
| Other behavioral measures to support the Energy Implementation Plan | 65 | Università degli Studi "La Sapienza" | Other behavioral measures to support the Energy Implementation Plan | Sending circulars in application of the consumption reduction as required by the European directive; drafting of the new PAE for the four-year period 2022-2025 and of the new Building Regulations for energy renovation |
| Energy diagnoses | 66 | Università degli Studi "La Sapienza" | Energy diagnoses | Studies on 4 university buildings for planned redevelopment interventions |
| Energy efficiency of display greenhouses | 67 | Orto Botanico di Roma/Polo Museale | Energy efficiency of display greenhouses | Structural and energy redevelopment of six greenhouses in the garden, with insulation, relamping and installation of photovoltaic panels |
| Photovoltaic installation on an industrial building undergoing redevelopment | 71 | Intecs Solutions S.p.A. | Photovoltaic installation on an industrial building undergoing redevelopment | Installation of photovoltaic solar panels for self-consumption (heat pump heating, lighting, etc.) |
| Purchase of green electricity | 72 | Intecs Solutions S.p.A. | Purchase of green electricity | Purchase of electricity with guarantee of origin from renewable sources |
| Energy efficiency of pumping systems | 75 | Intecs Solutions S.p.A. | Energy efficiency of pumping systems | Installation of a recovery system in tanks for rainwater and condensation from air conditioners, and reuse of the same for irrigation |
| Ex Poligrafico financing | 76 | Cassa Depositi e Prestiti S.p.A. | Ex Poligrafico financing | Redevelopment of the property through interventions on the external walls (thermal insulation, replacement of fixtures, use of efficient materials for waterproofing the closures), and the installation of a photovoltaic system with a nominal power of 170 kWp |
| Financing for the redevelopment of the Torri EUR real estate area | 77 | Cassa Depositi e Prestiti S.p.A. | Financing for the redevelopment of the Torri EUR real estate area | The area, of approximately 89,000 m2, will be subject to redevelopment, to return the neighborhood to a business complex with high energy performance. The interventions include green roofs, large outdoor spaces, such as the auditorium or the orchard, and renewable energy production systems. The nominal power of the installed photovoltaic system is approximately 352.55 kWp |
| Renovation of cabins and electrical panels | 78 | Cinecittà S.p.A. | Renovation of cabins and electrical panels | Renovation of the MV electrical substation network systems, switchboards and emergency and lighting systems |
| Purchase of 100% renewable green energy | 79 | Cinecittà S.p.A. | Purchase of 100% renewable green energy | Purchase of certified energy via the Consip platform, 100% renewable from October 2023 |
| Installation of RES systems | 80 | Cinecittà S.p.A. | Installation of RES systems | Construction of photovoltaic systems on the roofs of 11 theatres, for a total surface area of approximately 9,000 m2 |
| Electrification of buildings | 81 | Cinecittà S.p.A. | Electrification of buildings | Installation of new, more efficient air conditioning systems, in order to reduce energy consumption |
| Theater renovation | 82 | Cinecittà S.p.A. | Theater renovation | Renovation/construction of six city theaters, according to DNSH principles |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Open space design | 92 | Cinecittà S.p.A. | Open space design | Guidelines for the design of Cinecittà's open spaces to reduce its commitment to climate change and at the same time make it environmentally, economically and socially resilient to the impacts of the climate crisis |
| Photovoltaic systems ready to use | 93 | CER Confartigianato Lazio | Photovoltaic systems ready to use | Construction and management of photovoltaic systems in the Roman territory, for a total of 4,800 kWp |
| Future installation of photovoltaic systems ready to use | 94 | CER Confartigianato Lazio | Future installation of photovoltaic systems ready to use | Estimated possibility of installing 10 MWp per year in the regional territory, of which 25% can be installed annually in the municipal territory of Roma Capitale |
| Energy diagnoses and energy management systems; introduction of digital platforms | 95 | CER Confartigianato Lazio | Energy diagnoses and energy management systems; introduction of digital platforms | Management of REC through strategic consumption optimization plans, with digital platforms and ad hoc energy diagnoses |
| Initiatives to encourage the decarbonisation of buildings | 100 | Kyoto Club | Initiatives to encourage the decarbonisation of buildings | Raising awareness of the sector and citizens towards the decarbonisation of residential assets |
| Replacement of methane boilers with refrigeration units | 102 | Fondazione MAXXI | Replacement of methane boilers with refrigeration units | Disposal of methane boilers and replacement of refrigeration units with more efficient ones |
| Installation of photovoltaic systems | 103 | Fondazione MAXXI | Installation of photovoltaic systems | Initiative for the installation of photovoltaic systems, divided into four portion for a total power of 420 kWp |
| Relamping the main museum building, inside and in the square in front | 104 | Fondazione MAXXI | Relamping the main museum building, inside and in the square in front | Efficiency of the lighting system of the building and the square in front |
| Earth Hour | 105 | WWF Italia - ETS | Earth Hour | Initiative that turns off the lights of institutional buildings for at least an hour as a symbol of awareness. The cost is annual. |
| WWF headquarters energy efficiency | 109 | WWF Italia - ETS | WWF headquarters energy efficiency | Energy monitoring of the headquarters to verify the effectiveness of the interventions carried out, such as low consumption lighting systems and measures to contain thermal energy consumption; furthermore, a 15 kW photovoltaic system has been installed |
| Energy efficiency improvement of the Group's headquarters to host the Green Innovation District | 110 | MAIRE S.p.A. | Energy efficiency improvement of the Group's headquarters to host the Green Innovation District | The technological hub will host a research and development center serving the energy transition at the Rome headquarters. |
| Purchase of certified green energy | 117 | Toyota Motor Italia S.p.A. | Purchase of certified green energy | Purchase of green electricity to cover 100% of the consumption of its headquarters in Rome. |
| Photovoltaic systems built | 118 | Toyota Motor Italia S.p.A. | Photovoltaic systems built | Photovoltaic installation built on roofs with an installed power of approximately 620 kWp |
| Planned photovoltaic systems | 119 | Toyota Motor Italia S.p.A. | Planned photovoltaic systems | Photovoltaic installation to be built on roofs and shelters with an installable power of approximately 480 kWp |
| Headquarters efficiency | 120 | Toyota Motor Italia S.p.A. | Headquarters efficiency | Cut of gas consumption through the replacement of boilers and with heat pumps and solar thermal; new induction hobs installation |
| Installation of new photovoltaic system on the Toyota Motor City building | 122 | Toyota Motor Italia S.p.A. | Installation of new photovoltaic system on the Toyota Motor City building | Motor City SRL plans to install a system at the headquarters in via Aurelia |
| Energy efficiency | 128 | SACE S.p.A. | Energy efficiency | Relamping of the headquarters with replacement of 150 lamps and installation of digital sensors. Other redevelopment interventions on air conditioning systems, management and control measures of the systems are underway |
| Purchase of certified green energy | 129 | SACE S.p.A. | Purchase of certified green energy | All the energy purchased comes from renewable sources, with a total amount in 2023 of approximately 1,475 MWh |
| Installation of RES systems | 130 | SACE S.p.A. | Installation of RES systems | Installation of a small photovoltaic system, and feasibility analysis for installing the system on the roof of the headquarters |
| Introduction of environmental management systems and Energy Manager | 131 | SACE S.p.A. | Introduction of environmental management systems and Energy Manager | Energy manager nominee and various interventions implemented: periodic resets on thermostats; limited temperature adjustment range; timers clocks electrical panels |
| Global Estate Sustainability Benchmark | 132 | UniCredit S.p.A. | Global Estate Sustainability Benchmark | Scoring of the corporate real estate portfolio based on sustainability criteria |
| Energy efficiency interventions and optimized energy management | 133 | UniCredit S.p.A. | Energy efficiency interventions and optimized energy management | Branch closures and space optimization of our large buildings. Different types of interventions and control of energy consumption: Solar film; Remote control systems; LED relamping; Energy monitoring; Replacement of systems/windows with high energy performance systems and favoring VRV systems with boilers; Temperature control; Lighting; Seasonal closure (Christmas) |
| Purchase of certified green energy | 134 | UrbanV S.p.A. | Purchase of certified green energy | Use of certified energy to support flight operations consumption |
| IoT solutions in office management | 138 | Sensoworks S.r.l. | IoT solutions in office management | Prototype of device integrated with IoT software technology capable of monitoring environmental, structural and energy consumption conditions, acquiring data in real time especially regarding electricity, heating and water consumption |
| Purchase of certified green energy | 140 | Hotel Eden S.r.l. | Purchase of certified green energy | Electricity for Hotel Eden is covered entirely with 100%purchases from renewable sources, via RePower |
| Consumption monitoring | 141 | Hotel Eden S.r.l. | Consumption monitoring | Implementation of a platform for monitoring electricity consumption |
| Installation of RES systems | 148 | Elettronica S.p.A. | Installation of RES systems | Installation of photovoltaic systems on roofs and shelters with a total power of 636.16 kWp |
| Building energy efficiency | 149 | Elettronica S.p.A. | Building energy efficiency | Energy efficiency measures at the headquarters, in order to reduce energy consumption. LEED certification of the building. |
| Purchase of green energy | 155 | IKEA Italia S.r.l. | Purchase of green energy | 100% of the electricity consumption of the Roman stores (Anagnina and Porta di Roma) covered by energy purchase from renewable sources |
| Widespread efficiency improvement intervention in the Roman offices | 156 | IKEA Italia S.r.l. | Widespread efficiency improvement intervention in the Roman offices | Interventions of: relamping, installation of heat pumps, efficiency improvement of food departments |
| Reorganization of the Magliana area | 166 | Terna S.p.A. | Reorganization of the Magliana area | Demolition of 15km overhead lines and 65 supports; Construction of 0.550km cable and 2 new supports; Renovation of stalls in SE Magliana RT (functional separation with RFI); Agreement in favor of RFI for the replacement of 150kV/3Kv transformers; 30 hectares of territory occupied by the dismantled plants returned |
| Casal Monastero Consortium | 167 | Terna S.p.A. | Casal Monastero Consortium | Burying of power lines: 132 kV DT Prenestina - Nomentana; ST at 132 kV Nomentana - Cistern RT |
| Undergrounding of the Aurelia-Flaminia line | 168 | Terna S.p.A. | Undergrounding of the Aurelia-Flaminia line | Burying of power lines and demolition of old lines |
| Request for modernization of the Serenissima Park line | 169 | Terna S.p.A. | Request for modernization of the Serenissima Park line | Burying of power lines and demolition of old lines |
| Cinquina landfill | 170 | Terna S.p.A. | Cinquina landfill | Burying of power lines and demolition of old lines |
| Torsani interventions 4 | 171 | Terna S.p.A. | Torsani interventions 4 | Burying of power lines and demolition of old lines |
| Energy efficiency improvement of the Viale Oceano Indio headquarters | 177 | Banca di Credito Cooperativo di Roma Soc. Coop. | Energy efficiency improvement of the Viale Oceano Indio headquarters | Interventions including: LED system replacement; programmed home automation system; replacement of heating and cooling systems; boiler replacement with heat pump |
| Energy efficiency of offices located in Rome | 178 | Banca di Credito Cooperativo di Roma Soc. Coop. | Energy efficiency of offices located in Rome | Interventions to improve the efficiency of the systems (electrical, air conditioning) and replacement of fixtures in five agencies in Rome |
| Purchase of certified green energy | 179 | Banca di Credito Cooperativo di Roma Soc. Coop. | Purchase of certified green energy | Use of green energy for all bank locations for the 100% of the consumption |
| Installation of photovoltaic systems on parking car shelters | 180 | Banca di Credito Cooperativo di Roma Soc. Coop. | Installation of photovoltaic systems on parking car shelters | Installation of 6,000 m2 of photovoltaic panels on shelters in the car park at the headquarters in via Oceano Indiano, with charging columns and green areas |
| Energy diagnosis of office buildings | 181 | Banca di Credito Cooperativo di Roma Soc. Coop. | Energy diagnosis of office buildings | Carrying out energy audits on the management buildings located in Viale Oceano Indiano 13 C every four years |
| Training and awareness | 182 | Banca di Credito Cooperativo di Roma Soc. Coop. | Training and awareness | Initiatives aimed at internal resources for a more rational and responsible use of energy (video pills Agenda 2030 and Sustainable Building Guidelines) |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| New Casa Angelini building (headquarters) | 189 | Angelini Real Estate S.p.A. | New Casa Angelini building (headquarters) | The headquarters building is already LEED Platinum rated. For the next few years, the purchase of 100% certified green energy and the obtaining of ISO 14001 and ISO 50001 certification are expected |
| Educational Hub Project | 193 | Università degli Studi di Roma Tor Vergata | Educational Hub Project | Almost net zero energy educational center, with: heat pumps, LED lighting, photovoltaic generator, rainwater collection system |
| Relamping project | 194 | Università degli Studi di Roma Tor Vergata | Relamping project | Replacement of lighting systems and simultaneous installation of efficient building automation systems in two buildings |
| Energy efficiency improvement of municipal real estate assets | 202 | ENGIE Servizi S.p.A. | Energy efficiency improvement of municipal real estate assets | Energy renovation on various sites such as schools, offices, theatres, libraries, senior centers, within the scope of the Consip Integrated Energy Service Agreement edition 4 |
| Energy efficiency in secondary schools | 203 | ENGIE Servizi S.p.A. | Energy efficiency in secondary schools | Energy efficiency improvement in part of secondary schools, within the scope of the Consip Integrated Energy Service Agreement, edition 4 |
| Energy efficiency improvement of Ministry of the Interior buildings | 204 | ENGIE Servizi S.p.A. | Energy efficiency improvement of Ministry of the Interior buildings | Energy efficiency improvement on part of the buildings of the Ministry of the Interior for office use, as part of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency improvement of Ministry of Transport buildings | 205 | ENGIE Servizi S.p.A. | Energy efficiency improvement of Ministry of Transport buildings | Energy efficiency improvement on part of the buildings of the Ministry of Transport (via Caraci and via Nomentana), as part of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency improvement of Port Authority buildings | 206 | ENGIE Servizi S.p.A. | Energy efficiency improvement of Port Authority buildings | Energy efficiency improvement on part of the buildings of the Port Authority, as part of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency improvement of properties of the Customs and Monopolies Agency | 207 | ENGIE Servizi S.p.A. | Energy efficiency improvement of properties of the Customs and Monopolies Agency | Energy efficiency improvement on part of the properties of the Customs and Monopolies Agency, within the scope of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency improvement of Astral Spa headquarters | 208 | ENGIE Servizi S.p.A. | Energy efficiency improvement of Astral Spa headquarters | Energy efficiency improvement at the Astral S.p.a. headquarters, within the scope of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency improvement of Consip Spa headquarters | 209 | ENGIE Servizi S.p.A. | Energy efficiency improvement of Consip Spa headquarters | Energy efficiency improvement at the Astral S.p.a. headquarters, within the scope of the Consip Integrated Energy Service agreement edition 4 |
| Energy efficiency of the VI Municipality headquarters | 210 | ENGIE Servizi S.p.A. | Energy efficiency of the VI Municipality headquarters | Redevelopment of the electrical systems of the building housing the Municipality VI |
| Efficiency measures for owned buildings | 211 | Fondazione Bioparco di Roma | Efficiency measures for owned buildings | Many interventions planned: 260 kW PV installation on roof; internal relamping for 3500 m2 of affected surface area; installation of charging stations for the park's electric vehicles; boiler replacement |
| IFO Hospital - Relamping | 212 | Coopservice S. Coop. p.A. | IFO Hospital - Relamping | Replacement of 3,000 fluorescent lamps with LED lamps |
| IFO Hospital - Photovoltaic system | 213 | Coopservice S. Coop. p.A. | IFO Hospital - Photovoltaic system | Installation of 144 photovoltaic modules on the roof of the Congress Center (equal to 61.20 kWp) |
| IFO Hospital - BMS system expansion | 214 | Coopservice S. Coop. p.A. | IFO Hospital - BMS system expansion | Upgrade and expansion of the BMS controlled points, to optimize the use of technological systems |
| IFO Hospital - Heat pump installation | 215 | Coopservice S. Coop. p.A. | IFO Hospital - Heat pump installation | Installation of an electric heat pump for pre-heating domestic water |
| Architectural interior lighting | 216 | Enel Sole S.r.l. | Architectural interior lighting | New lighting in the CNEL headquarters, to improve the liveability of the place and increase its energy efficiency |
| Redevelopment of public lighting | 217 | Enel Sole S.r.l. | Redevelopment of public lighting | Proposal to replace 70% of traditional lamps with LED technology, integrated with a remote control system of the intensity of the light emitted. |
| Public lighting | 223 | ENEA | Public lighting | Study on the digitalisation of public lighting and performance monitoring via the PELL platform |
| Exploitation of heat from low enthalpy geothermal sources | 225 | ENEA | Exploitation of heat from low enthalpy geothermal sources | Studies for the identification of the area in which to build a demonstrator to use renewable thermal energy from geothermal sources for the heating and cooling of public buildings |
| Feasibility study to create a solar thermal system | 226 | ENEA | Feasibility study to create a solar thermal system | Feasibility study in order to build a 1.2 MW solar thermal power plant |
| Energy efficiency strategy for buildings | 227 | ENEA | Energy efficiency strategy for buildings | Analysis strategy of the real estate assets of the municipality of Rome, in order to achieve the CCC objectives |
| One stop shop | 228 | ENEA | One stop shop | Information desk dedicated to bodies, administrators, freelancers and private citizens to support efficiency actions in public and private buildings |
| Study on the redevelopment of ERP buildings | 229 | ENEA | Study on the redevelopment of ERP buildings | Support for building renovation, dedicated to the recovery of information relating not only to the energy aspects of the building/plant system but also social ones, to be used from an integrated perspective to facilitate participatory planning of the energy requalification intervention. |
| Information and cultural change of users | 230 | ENEA | Information and cultural change of users | Support for the creation of an information campaign for citizens for the reduction of emissions linked to heating and energy saving systems |
| New headquarters of the Rectorate | 231 | Università degli Studi Roma Tre | New headquarters of the Rectorate | Construction of a new NZEB building, powered by a 101 kW photovoltaic system on the roof and surrounded by 1,420 m2 of greenery |
| Photovoltaic and CER systems | 232 | Università degli Studi Roma Tre | Photovoltaic and CER systems | Plants being installed with a total power of 3.7 MWp, which can be used to serve REC |
| Process optimization for GHG reduction | 235 | Birra Peroni S.r.l. | Process optimization for GHG reduction | Technical adjustment of the generator, which produces steam only when necessary to cover the actual energy demand of a given process. Optimization of the entire production process and of the factory steam distribution network itself. |
| Relamping | 236 | Leonardo S.p.A. | Relamping | Replacement of fluorescent lamps with LED lamps (approximately 14,500) |
| Installation of photovoltaic systems | 237 | Leonardo S.p.A. | Installation of photovoltaic systems | Installation of photovoltaic systems in the two sites in via Tiburtina (total power equal to 424 kWp) |
| Replacement of electric motors | 238 | Leonardo S.p.A. | Replacement of electric motors | Replacement of approximately 90 electric motors with new high-efficiency models |
| Installation of RES systems | 242 | Poste Italiane S.p.A. | Installation of RES systems | Installation of photovoltaic systems on properties owned by the Poste Italiane group for a total power of approximately 1 MWp |
| Installation of Smart Building systems | 243 | Poste Italiane S.p.A. | Installation of Smart Building systems | Installation of a single supervision system capable of managing the buildings involved in the project in terms of Building and Energy Management System, in an integrated and structured manner |
| Replacement of boilers with heat pumps | 244 | Poste Italiane S.p.A. | Replacement of boilers with heat pumps | The project involves the replacement of fossil fuel heat generators with heat pump systems |
| Replacement of fluorescent lamps | 245 | Poste Italiane S.p.A. | Replacement of fluorescent lamps | Installation of approximately 50,000 lamps in the group's operational offices |
| Process optimization to reduce GHG release | 246 | Wind Tre S.p.A. | Process optimization to reduce GHG release | Various projects have been launched to optimize consumption linked to the development of 5G technology and auxiliary to the operation of systems such as air conditioning. |
| Purchase of certified green energy | 249 | Wind Tre S.p.A. | Purchase of certified green energy | Plan to cut all the emissions, which involves the purchase of green energy equal to 41% of total consumption |
| Redevelopment intervention in the area close to the headquarters | 250 | Triumph Italy S.r.l. | Redevelopment intervention in the area close to the headquarters | Abandoned architectural element redeveloped in the Balduina district |
| Tutor training for home energy | 256 | Rete Assist - ETS | Tutor training for home energy | Training of Domestic Energy Tutors (TED), with the prospective of including these figures into physical or virtual energy desks |
| PEnTrEn project | 257 | Rete Assist - ETS | PEnTrEn project | Project to reduce energy poverty with a holistic and shared approach, to promote a fair and equitable energy transition in the context of the 2030 Agenda |
| Purchase of certified green energy | 265 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Purchase of certified green energy | Procurement of electricity with guarantee origin from renewable sources |
| Relamping Rome Capital locations | 266 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Relamping Rome Capital locations | Replacement of lighting systems (both internal and external) with LED technology in all offices in Rome |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Replacement of 3 refrigeration units at the Via Capponi headquarters | 267 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Replacement of 3 refrigeration units at the Via Capponi headquarters | Increase in the efficiency of the building's summer air conditioning system by replacing the refrigeration units |
| Energy efficiency of the building envelope | 268 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Energy efficiency of the building envelope | Replacement of the windows with low-emission glass (south side) and external insulation |
| Efficiency of the thermal power plant and replacement of boilers | 269 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Efficiency of the thermal power plant and replacement of boilers | Replacement of existing boilers with two modulating condensing boilers and system adaptation |
| Efficiency improvement of the refrigeration unit and replacement of refrigeration units | 270 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Efficiency improvement of the refrigeration unit and replacement of refrigeration units | Replacement of 3 existing refrigeration units with the same number of equal cooling power, with better performance |
| Drafting energy diagnoses for various buildings in the city | 271 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Drafting energy diagnoses for various buildings in the city | Four locations are subject to energy audits from 2023 every 4 years |
| Efficiency improvement of historic building with boiler replacement, via Principe Umberto 2/4, | 272 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Efficiency improvement of historic building with boiler replacement, via Principe Umberto 2/4, | Restoration and conservative renovation of a building listed as a monumental historical interest |
| Insulation of the attic and installation of an air conditioning system | 273 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Insulation of the attic and installation of an air conditioning system | Efficiency and redevelopment of internal spaces are planned at the offices in Via Salaria 6 |
| Installation of electrical measurement software on production departments | 274 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Installation of electrical measurement software on production departments | Digital sensors and related dashboard for energy control installed |
| Installation of self-consumption photovoltaic systems on premises | 276 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Installation of self-consumption photovoltaic systems on premises | Installation of photovoltaic systems on the roofs of various buildings at the Via Salaria 691 and 712 offices and on shelters in the car park |
| Energy efficiency of the heating system via Salaria | 277 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Energy efficiency of the heating system via Salaria | Dismantling of heating and cooling plants and installation of heat pumps for the production of heating and cooling energy |
| Adoption of sustainability protocols for the certification of green buildings | 284 | Green Building Council Italia | Adoption of sustainability protocols for the certification of green buildings | Protocols can be applied to buildings or entire neighborhoods to drive investments towards measurable sustainability |
| Training and information relating to the impact reduction potential of sustainable construction | 285 | Green Building Council Italia | Training and information relating to the impact reduction potential of sustainable construction | Transversal application to collect impact data on buildings in the city of Rome |
| Drafting of the city's green building map | 286 | Green Building Council Italia | Drafting of the city's green building map | Publication and updating of the green building map of the city of Rome, with the aim of involving citizens in understanding the evolution of the city. |
| Installation of photovoltaic system | 290 | Radio Rock - Q S.r.l. | Installation of photovoltaic system | Installation of a 20 kW photovoltaic system on the roof of the headquarters |
| Decarbonization project of the Rome office | 292 | Save the Children Italia - ETS | Decarbonization project of the Rome office | During 2023, the home automation lights program was completed and definitively tested at the Rome headquarters, complemented by the installation of electronic switches in the spaces hosting the workstations, which allow waste to be reduced by controlling the lighting manually when necessary. |
| Establishment of a CER | 293 | Save the Children Italia - ETS | Establishment of a CER | Production and consumption of renewable energy through the establishment of a REC within the social innovation program "Here, a Neighborhood to grow" promoted by Save the Children and implemented at the garrison located in Ostia Ponente. |
| Purchase of certified green energy | 295 | Servier Italia S.p.A. | Purchase of certified green energy | The "Super Green Energy Enterprise" project is related to the supply of electricity coming exclusively from renewable sources |
| Headquarters relamping | 296 | Servier Italia S.p.A. | Headquarters relamping | Energy requalification of lighting systems: LED conversion and automatic-timed switching on |
| Replacement of refrigeration machines | 297 | Servier Italia S.p.A. | Replacement of refrigeration machines | Replacement of old refrigeration machines for cooling technical rooms and offices with high-efficiency latest generation ones and less polluting refrigerant gases. Installation of air blades to avoid heat dispersion |
| Energy diagnosis of the headquarters | 298 | Servier Italia S.p.A. | Energy diagnosis of the headquarters | Energetical diagnosis conducted every 4 years starting from 2019 |
| Redevelopment of the internal spaces of the headquarters | 301 | Servier Italia S.p.A. | Redevelopment of the internal spaces of the headquarters | Energy efficiency and environmental protection were among the aspects most taken into consideration:<br>the new carpet was made with zero impact processes and with recycled and recyclable materials; all new furnishings are made with recycled materials and in turn recyclable in a minimum percentage of 95%; the work spaces were equipped with 250 Sanseveria plants, known for its ability to absorb pollutants in the air |
| Redevelopment of condominium building via Galati (76 apartments) | 309 | Teicos UE S.r.l. | Redevelopment of condominium building via Galati (76 apartments) | Energy efficiency achieved through the installation of a ventilated facade and thermal insulation. Iinstallation of a 19.25 kW photovoltaic system with 2 5.8 kWh storage batteries. Replacement of current boilers with condensing boilers. |
| Design methodology that involves digitalization of processes, involvement of clients and monitoring of interventions | 310 | Teicos UE S.r.l. | Design methodology that involves digitalization of processes, involvement of clients and monitoring of interventions | Since 2018, the integrated approach of the CoREn® method has led, in 80% of cases, to the development of definitive interventions closer to the ambitious scenarios illustrated. The co-planning of the redevelopment is crucial in accelerating the decision-making processes which constitute one of the main barriers to energy efficiency in the private residential sector. |
| Certified green energy | 311 | NH Collection Hotels | Certified green energy | Purchase of certified green energy at 5 locations in the municipal area |
| Monitoring energy and gas consumption via digital platforms | 312 | NH Collection Hotels | Monitoring energy and gas consumption via digital platforms | Data collection platform for electricity and gas consumption |
| ISO 14001 and Bioscore certification | 313 | NH Collection Hotels | ISO 14001 and Bioscore certification | Certification obtained in 2019 for various offices in the city (level A or B depending on the office) |
| Energy efficiency interventions at the CTO Alesini Hospital | 316 | Siram S.p.A. | Energy efficiency interventions at the CTO Alesini Hospital | Various interventions planned: Installation of new efficient refrigeration units; Installation of thermostatic valves; Introduction of digital platforms for monitoring consumption |
| Installation of photovoltaic systems at the CTO Alesini Hospital | 317 | Siram S.p.A. | Installation of photovoltaic systems at the CTO Alesini Hospital | Installation of two photovoltaic systems on the roof with a total power of 60 kWp |
| Energy efficiency interventions at S.Eugenio Hospital | 318 | Siram S.p.A. | Energy efficiency interventions at S.Eugenio Hospital | Various interventions planned: Replacement of refrigeration units; Replacement of high efficiency AHU motors; LED installation; Installation of thermostatic valves; Installation of self-dimming ceiling lights; Introduction of consumption monitoring system |
| Installation of trigeneration system at S.Eugenio Hospital | 319 | Siram S.p.A. | Installation of trigeneration system at S.Eugenio Hospital | Installation of a trigeneration plant at the S.Eugenio Hospital |
| Installation of solar thermal system at S.Eugenio Hospital | 320 | Siram S.p.A. | Installation of solar thermal system at S.Eugenio Hospital | Installation of a solar thermal system to reduce the building's consumption |
| Energy efficiency interventions at the Santa Caterina della Rosa Polyclinic | 321 | Siram S.p.A. | Energy efficiency interventions at the Santa Caterina della Rosa Polyclinic | Various interventions planned: LED installation; Replacement of ceiling lights; Introduction of digital platforms for consumption control |
| Energy efficiency interventions at the CTO facility via Nemesio | 322 | Siram S.p.A. | Energy efficiency interventions at the CTO facility via Nemesio | Various interventions planned: Replacement of fixtures; UTA motor replacement; Installation of LED ceiling lights; Installation of thermostatic valves |
| Installation of CTO photovoltaic system via Nemesio | 323 | Siram S.p.A. | Installation of CTO photovoltaic system via Nemesio | Installation of a photovoltaic system with an installed power of 20 kWp |
| Proposal for energy efficiency interventions at properties in Rome Capital | 324 | Siram S.p.A. | Proposal for energy efficiency interventions at properties in Rome Capital | Various interventions planned: LED installation; Installation of heat pumps; Introduction of digital platforms for consumption optimization; Installation of energy management system for heating systems |
| Installation of photovoltaic and storage systems at Rome Capital properties | 325 | Siram S.p.A. | Installation of photovoltaic and storage systems at Rome Capital properties | Installation of photovoltaic systems integrated with storage systems at some properties in Rome Capital |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Energy efficiency improvement of residential buildings and RES installation | 329 | AzzeroCO2 S.r.l. | Energy efficiency improvement of residential buildings and RES installation | Energy efficiency with external insulation of the vertical walls and roofs, replacement of the current generator with a new condensing boiler, photovoltaic installation |
| Energy efficiency improvement of residential buildings | 330 | AzzeroCO2 S.r.l. | Energy efficiency improvement of residential buildings | Energy efficiency with insulation of vertical walls through blowing, thermal insulation of the roof, replacement of the heat generator with a condensation one and installation of fixtures |
| Replacement of heating and cooling system | 331 | AzzeroCO2 S.r.l. | Replacement of heating and cooling system | Replacement of the heating and cooling system, for the reduction of energy consumption and greater living comfort |
| Replacement of heating systems and photovoltaic installation | 332 | AzzeroCO2 S.r.l. | Replacement of heating systems and photovoltaic installation | Replacement of existing system with more efficient heat pump system and installation of photovoltaic system in several phases, for a total of 29 kWp |
| Residential energy efficiency with PV system and charging stations | 333 | AzzeroCO2 S.r.l. | Residential energy efficiency with PV system and charging stations | Energy efficiency of the property through external insulation of the walls and insulation of the roof |
| Replacement heat generator with condensing generator | 334 | AzzeroCO2 S.r.l. | Replacement heat generator with condensing generator | Replacement heat generator with condensing heat generator |
| Preliminary analysis for a photovoltaic installation | 335 | AzzeroCO2 S.r.l. | Preliminary analysis for a photovoltaic installation | Preliminary design of a photovoltaic system on a roof with a power of 306 kWp |
| Construction of a photovoltaic system | 336 | AzzeroCO2 S.r.l. | Construction of a photovoltaic system | Construction of a 85 kWp photovoltaic system on the roof of the building |
| Residential redevelopment interventions | 337 | AzzeroCO2 S.r.l. | Residential redevelopment interventions | Executive design of a new heating and electrical system as part of a residential redevelopment |
| Purchase of certified green energy | 345 | Banca Popolare Etica S. Coop. p.A. | Purchase of certified green energy | Purchase of certified green energy to cover 100% of electricity consumption |
| Purchase of certified green energy | 352 | Autostrade per l'Italia S.p.A. | Purchase of certified green energy | Purchase of certified green energy for the group's offices |
| Interventions to reduce consumption at the headquarters | 353 | Autostrade per l'Italia S.p.A. | Interventions to reduce consumption at the headquarters | Interventions to reduce the consumption of the headquarters through: adoption of software for monitoring consumption, relamping, replacement of transformers |
| Rationalization of use of air conditioning systems | 354 | Autostrade per l'Italia S.p.A. | Rationalization of use of air conditioning systems | With the aim of reducing scope 2 emissions, measures have been put in place to rationalize the use of air conditioning systems |
| Ground-mounted photovoltaic systems | 358 | Autostrade per l'Italia S.p.A. | Ground-mounted photovoltaic systems | Installation of photovoltaic systems along motorways, for a total installed power of 3,860 kWp |
| RENOVERTY project | 362 | Aisfor S.r.l. | RENOVERTY project | Project to tackle energy poverty and promote the redevelopment of buildings |
| Introduction of digital platforms and consumption optimization software | 363 | Almaviva S.p.A. | Introduction of digital platforms and consumption optimization software | SEM (Smart Energy Management) is a solution for the "smart" use of energy consumption data, in favor of protecting the environment and reducing costs. |
| Purchase of certified green energy | 370 | Almaviva S.p.A. | Purchase of certified green energy | Partial coverage of the electricity needs of the two offices through green energy purchase |
| Purchase of certified green energy | 372 | Aeroporti di Roma S.p.A. | Purchase of certified green energy | Purchase of certified green energy to cover the airport's electricity consumption |
| Infrastructure renovation with sustainability protocols | 373 | Aeroporti di Roma S.p.A. | Infrastructure renovation with sustainability protocols | ADR is carrying out a certification strategy for eligible buildings according to international environmental protocols, with particular attention and priority on Terminal infrastructures, which are particularly strategic with respect to the infrastructure complex: LEED; BREEAM |
| Installation of RES systems | 374 | Aeroporti di Roma S.p.A. | Installation of RES systems | Installation of a 2.7 MW photovoltaic system in the areas around Ciampino airport |
| Energy efficiency of airports | 375 | Aeroporti di Roma S.p.A. | Energy efficiency of airports | Energy efficiency at Ciampino airport, through different types of intervention (relamping, replacement of refrigeration units, etc.) |
| Photovoltaic systems on metro-railway workshops and car parks | 380 | ATAC S.p.A. - Azienda per la mobilità | Photovoltaic systems on metro-railway workshops and car parks | The evaluation of the roofs, both flat and inclined, led to an estimate of the surfaces available for the installation of photovoltaic panels amounting to over 120,000 m2 which means a preliminary estimation of 15 MWp installable |
| Redevelopment of compressed air production plants | 381 | ATAC S.p.A. - Azienda per la mobilità | Redevelopment of compressed air production plants | Identification of leaks in distribution networks and consequent efficiency improvement through compliance and restoration of optimal operating conditions |
| Installation of Power Quality systems on 10 medium and low voltage PODs | 382 | ATAC S.p.A. - Azienda per la mobilità | Installation of Power Quality systems on 10 medium and low voltage PODs | Energy efficiency achieved through the minimization of energy loss; the greater is the production efficiency of the system, with the same costs, the fewer faults and line losses |
| Relamping 50,000 light points with LED technology | 383 | ATAC S.p.A. - Azienda per la mobilità | Relamping 50,000 light points with LED technology | Replacement of lamps with traditional technology (fluorescence, incandescence, algogenic) in ATAC offices and depots |
| Access to the super amortization of the National Industry 5.0 Plan | 385 | ATAC S.p.A. - Azienda per la mobilità | Access to the super amortization of the National Industry 5.0 Plan | Credits requested for new investments in production structures located in the area to reduce consumption |
| Introduction of the environmental and energy management system and of the respective roles of Energy Manager and Climate Manager | 386 | ATAC S.p.A. - Azienda per la mobilità | Introduction of the environmental and energy management system and of the respective roles of Energy Manager and Climate Manager | The digital platform guarantees consumption efficiency under the guidance of a company energy manager |
| Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices | 395 | ACEA ATO 2 S.p.A. | Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices | Introduction of the Waidy Management System to analyse, represent and monitor enormous quantities of data from the group's information systems |
| Energy efficiency of processes and infrastructures | 396 | ACEA ATO 2 S.p.A. | Energy efficiency of processes and infrastructures | Actions of a different nature: optimization of the aeration compartments of the purifiers; inverter installation; loss reduction; replacement of equipment with high energy efficiency equivalents; optimization of pressure management; implementation of digital platforms for data analysis and processing. |
| Purchase of green electricity | 397 | ACEA ATO 2 S.p.A. | Purchase of green electricity | Purchase of green electricity certified 90% renewable |
| Energy efficiency interventions in water centres | 398 | ACEA ATO 2 S.p.A. | Energy efficiency interventions in water centres | Electromechanical revamping carried out on the La Storta Water Centre; same intervention in the Casilino Water Centre, under construction in 2024 |
| Installation of photovoltaic panels for approximately 250 kWp at the C.I. Eur. | 399 | ACEA ATO 2 S.p.A. | Installation of photovoltaic panels for approximately 250 kWp at the C.I. Eur. | The installation is part of the development of a plan for installing photovoltaic panels at the managed infrastructures. |
| Centralization of purifiers | 406 | ACEA ATO 2 S.p.A. | Centralization of purifiers | Optimization of the purification sector through rationalization of the whole systems process |
| Birth of the Renewable Energy Community | 413 | A Sud Ecologia e Cooperazione O.d.V. | Birth of the Renewable Energy Community | Legal establishment of the Renewable Community in the Torpignattara district |
| Energy saving education courses | 414 | Fondazione Banco dell'energia Ente Filantropico | Energy saving education courses | Financial support in the payment of energy utilities for 42 families and a savings education program aimed at its beneficiaries |
| Financial support and training aimed at two co-housing | 415 | Fondazione Banco dell'energia Ente Filantropico | Financial support and training aimed at two co-housing | Payment of energy bills for two cohousing managed by the Community of Sant'Egidio and promotion of energy saving education courses. |
| RES "Le Vele" - Municipality I | 416 | Fondazione Banco dell'energia Ente Filantropico | RES "Le Vele" - Municipality I | Establishment of RES and installation of a photovoltaic system on the roof of the building with a nominal power of 82.17 kWp |
| RES project to be started | 417 | Fondazione Banco dell'energia Ente Filantropico | RES project to be started | RES at the Don Bosco institute with the installation of a 77 kW photovoltaic system |
| Building energy efficiency interventions | 418 | BASF ITALIA S.p.A. | Building energy efficiency interventions | Replacement of fixtures, reorganization of company spaces to reduce consumption, purchase of green energy |
| Efficiency and optimization of the production process | 421 | BASF ITALIA S.p.A. | Efficiency and optimization of the production process | Replacement of 2 steam generators (using methane) and the compressor park |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Efficient energy management | 422 | BASF ITALIA S.p.A. | Efficient energy management | Since 2023 the company has carried out the energy diagnosis of its production plant. Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices |
| Installation of photovoltaic system | 423 | Biscotti P.Gentilini S.r.l. | Installation of photovoltaic system | From 2024 the plant will cover part of the company's energy needs |
| Modernization, expansion and energy management interventions of the General Command of the Port Authorities | 428 | Agenzia del Demanio | Modernization, expansion and energy management interventions of the General Command of the Port Authorities | New project which provides the arrangement of the new offices of the Port Authority, also provides for the allocation of accommodation and other services that pursue the objectives of efficiency and urban regeneration |
| Intervention relating to the demolition and reconstruction of the building located in Viale Boston n. 25 | 429 | Agenzia del Demanio | Intervention relating to the demolition and reconstruction of the building located in Viale Boston n. 25 | The demolition and reconstruction intervention, aimed at hosting the MASE headquarters, aims to achieve full control of aspects related to environmental, social and governance sustainability in all phases of the process |
| Renovation of the state property complex located in Viale Trastevere 185-189 | 430 | Agenzia del Demanio | Renovation of the state property complex located in Viale Trastevere 185-189 | Different types of interventions: installation of RES systems to support the reduction of primary energy consumption; electrification of buildings (heat pumps); introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things devices (Smart building) |
| Renovation of the "8°Cerimant barracks", Tor Sapienza | 431 | Agenzia del Demanio | Renovation of the "8°Cerimant barracks", Tor Sapienza | From an energy production point of view, the project involves the installation of RES with 1500 photovoltaic modules, with a corresponding total power of 700 kWp. |
| Energy renovation interventions of Pavilion V | 432 | ASL Roma 1 | Energy renovation interventions of Pavilion V | Interventions in pavilion V to reach energy efficiency requirements |
| Photovoltaic system in pavilion V | 433 | ASL Roma 1 | Photovoltaic system in pavilion V | Installation of a photovoltaic system on the roof in Hall V with a power of 10.3 kWp |
| Energy requalification interventions of Pavilion VII | 434 | ASL Roma 1 | Energy requalification interventions of Pavilion VII | Interventions in Pavilion VII capable of guaranteeing the achievement of energy efficiency requirements |
| Photovoltaic system in pavilion VII | 435 | ASL Roma 1 | Photovoltaic system in pavilion VII | Installation of a photovoltaic system on the roof in Hall VII with a power of 5.75 kWp |
| Energy requalification interventions of Pavilion XXIII | 436 | ASL Roma 1 | Energy requalification interventions of Pavilion XXIII | Interventions in pavilion XXIII to reach energy efficiency requirements |
| Photovoltaic system in pavilion XXIII | 437 | ASL Roma 1 | Photovoltaic system in pavilion XXIII | Installation of a photovoltaic system on the roof in pavilion XXIII with a power of 39.95 kWp |
| Energy requalification interventions of Pavilion XXIV | 438 | ASL Roma 1 | Energy requalification interventions of Pavilion XXIV | Interventions in pavilion XXIV capable of guaranteeing the achievement of energy efficiency requirements |
| Energy requalification interventions of Pavilion XXV | 439 | ASL Roma 1 | Energy requalification interventions of Pavilion XXV | Interventions in pavilion XXV to reach energy efficiency requirements |
| Energy requalification interventions of pavilion XXVIII | 440 | ASL Roma 1 | Energy requalification interventions of pavilion XXVIII | Interventions in pavilion XXVIII to reach energy efficiency requirements |
| Photovoltaic systems in pavilion XXVIII | 441 | ASL Roma 1 | Photovoltaic systems in pavilion XXVIII | Installation of a photovoltaic system on the roof in pavilion XXVIII with a power of 5.75 kWp |
| Energy requalification interventions of the XLI pavilion | 442 | ASL Roma 1 | Energy requalification interventions of the XLI pavilion | Interventions in Pavilion XLI to reach energy efficiency requirements |
| Photovoltaic systems in Pavilion XLI with a power of 51.75 kWp | 443 | ASL Roma 1 | Photovoltaic systems in Pavilion XLI with a power of 51.75 kWp | Installation of a photovoltaic system on the roof in Pavilion XLI with a power of 51.75 kWp |
| Interventions to reduce electricity consumption in the Olympic Stadium, Foro Italico and Tennis Center | 445 | Sport e Salute S.p.A. | Interventions to reduce electricity consumption in the Olympic Stadium, Foro Italico and Tennis Center | Purchase of green energy for the stadium and Foro Italico; installation of heat pumps and BMS systems in the Tennis Center; installation of a cogeneration system for the self-production of electricity |
| Energy efficiency of buildings | 448 | Banca d'Italia | Energy efficiency of buildings | The interventions, on the 20 buildings located within the Roma Capitale area, concern: the replacement of lighting fixtures; the renewal of air conditioning systems and heating plants; the replacement of fixtures and the insertion of insulation on the roof; the implementation of monitoring systems to identify targeted actions to reduce consumption; the adoption of smart thermoregulation systems for work environments |
| Purchase of green energy | 449 | Banca d'Italia | Purchase of green energy | Percentage of electricity coming from renewable sources purchased: 100% |
| RES installation | 450 | Banca d'Italia | RES installation | The feasibility studies for the installation of photovoltaic systems on most of the buildings in the historical center of Rome have been completed: these instalaltions - provided the given the authorizations obtained from the competent authorities - could allow for a maximum overall power of over 600 kWp |
| Electrification of buildings (e.g. heat pumps replacing boilers) | 451 | Banca d'Italia | Electrification of buildings (e.g. heat pumps replacing boilers) | Gradual conversion of gas heating systems with electric or hybrid systems (gas+electricity) |
| Construction of NZEB building | 452 | Banca d'Italia | Construction of NZEB building | Construction of a new data center at Castel Romano, which will replace the Bank's current secondary data center located in Largo Bastia, built at the end of the sixties. The infrastructure will be certified according to the ISO EN 22237 standard and according to the LEED protocol. |
| Replacement of windows | 462 | FAO | Replacement of windows | Replacement of 95% of existing windows with new aluminum and double-glazing windows with high energy performance. |
| Replacement of curtain walls | 463 | FAO | Replacement of curtain walls | The continuous glass facades that make up the external envelope have been completely replaced with aluminum windows and doors with high energy performance |
| Adaptation of meeting room lighting | 464 | FAO | Adaptation of meeting room lighting | Replacement of existing fluorescent ceiling lights with LED lighting fixtures |
| Office lighting adaptation | 465 | FAO | Office lighting adaptation | Replacement of existing fluorescent ceiling lights with LED lighting fixtures with presence sensors |
| Purchase of certified green energy | 466 | FAO | Purchase of certified green energy | Purchase of certified green energy with Guarantee of Origin |
| Photovoltaic system | 468 | FAO | Photovoltaic system | Renovation of the roof with green insulation and photovoltaic system installed above (56,000 kWh/per product) |
| Reduction of energy consumption | 469 | FAO | Reduction of energy consumption | Temperature range limitation for the air conditioning system in summer and winter |
| Replacement of HVAC systems | 474 | FAO | Replacement of HVAC systems | Replacement of obsolete hydronic heating and air conditioning systems with new direct expansion heat pump systems with variable refrigerant flow. Approximately 100 VRF systems, total of approximately 760 kW electric. |
| Replacement of steam boilers with condensing ones | 475 | FAO | Replacement of steam boilers with condensing ones | Replacement of gas steam generators with new condensing water systems. Installed thermal capacity approximately: 6 MW. |
| Study of the relevant buildings | 479 | Fabbrica San Pietro | Study of the relevant buildings | Defined possible intervention scenarios aimed at reducing CO2 emissions and quantifying the benefits in energy, environmental and economic terms |
| Energy efficiency of the existing site | 480 | Centro Agroalimentare Roma S. Coop. p.A. | Energy efficiency of the existing site | Redevelopment of approximately 200,000 m2 of buildings for logistics use following environmental sustainability criteria. |
| Purchase of certified green energy | 496 | NETGROUP S.p.a. | Purchase of certified green energy | Purchase of certified green energy with Guarantee of Origin. Starting from October 2023, Netgroup has moved, for its Rome headquarters, to Alperia, a certified Green Energy and Carbon Neutral energy operator. |
| Energy diagnoses and environmental management systems | 497 | NETGROUP S.p.a. | Energy diagnoses and environmental management systems | Energy Diagnoses to identify the improvement interventions necessary to reduce energy consumption; introduction, over a three-year period, of an integrated environmental and energy management system based on obtaining the following certifications: ISO14001; ISO14064; ISO50001. Appointment of the Energy Manager. |
| Digital platforms for optimizing consumption | 505 | NETGROUP S.p.a. | Digital platforms for optimizing consumption | Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices: continuous monitoring of energy and water resources; reporting and analysis; operational efficiency; reduction of energy consumption; IoT Device installation |
| Energy efficiency of the headquarters | 506 | ABB S.p.a. | Energy efficiency of the headquarters | Installation of the BMS system to monitor and control energy consumption and use of ABB Ab il ity platform |
| Energy diagnoses for the reduction of GHG emissions | 508 | ABB S.p.a. | Energy diagnoses for the reduction of GHG emissions | The objective is to identify scenarios for optimizing and reducing consumption |
| Introduction of energy management systems | 510 | ABB S.p.a. | Introduction of energy management systems | Implementation of the ISO 50001 management system |
| Electrification of company buildings | 511 | ABB S.p.a. | Electrification of company buildings | Replacement of boilers with heat pumps for the electrification of consumption |
| Installation of photovoltaic systems | 512 | ABB S.p.a. | Installation of photovoltaic systems | Installation of photovoltaic panels on the company headquarters |
| Implementation of energy control system | 513 | ABB S.p.a. | Implementation of energy control system | The implementation in collaboration with Laziale Distribuzione is related to the supply of 25% of the production site's energy needs. |
| Installation of LED technology advertising spaces | 516 | Enel X Italia S.r.l. | Installation of LED technology advertising spaces | Installation of 5 LED walls in the city on behalf of third parties |
| Interventions on the electricity grid | 519 | Areti S.p.A. | Interventions on the electricity grid | Interventions to strengthen and modernize the electricity grid which aim to increase the resilience of the infrastructure, its adequacy and overall safety. |

## Buildings

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Future strategy for interventions on the electricity grid | 521 | Areti S.p.A. | Future strategy for interventions on the electricity grid | Further interventions to strengthen the network to guarantee its overall adequacy and safety in response to the overall needs of the city |
| Headquarters energy efficiency measures | 523 | CNR - Consiglio Nazionale delle Ricerche | Headquarters energy efficiency measures | Energy requalification interventions of the headquarter buildings which include BMS systems, thermal coating, LED installation and energy renovation |

## Transport

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Executive resolution 491/2024: 8 operational interventions to encourage alternative mobility and dissemination of good practices among citizens | 3 | Department of Sustainable Mobility and Transport | Executive resolution 491/2024: 8 operational interventions to encourage alternative mobility and dissemination of good practices among citizens | 1. Municipal incentive for the renewal of commercial vehicles; 2.LPT discount reporting for Mobility Manager network; 3. Incentive distribution platform; 4. Communication campaigns to citizens; 5.Incentive for the use of sustainable mobility platforms; 6. Introduction of the MOVE IN system; 7. MIT system for the operation of environmental gates and cooperation with the operations center; 8.SOSPASS project; |
| Environmental ZTL, Pollution Charge and Congestion Charge | 4 | Department of Sustainable Mobility and Transport | Environmental ZTL, Pollution Charge and Congestion Charge | Integration of the electronic gate system for the automatic control of access to the ZTL, implementation of the Green Belt and creation of the Central Electronic System (hardware and software) useful for the management of the Congestion Charge of Rome Capital |
| SOSPAS project - Smart on Street Parking System | 6 | Department of Sustainable Mobility and Transport | SOSPAS project - Smart on Street Parking System | The project aims to simplify the procedures for using and monitoring vehicle parking (goods and passengers) in the central areas of Rome, through the rotation of stalls dedicated to the parking and logistics of goods and the optimization of urban spaces. |
| UPPER project | 7 | Department of Sustainable Mobility and Transport | UPPER project | Project which includes nine measures which concern, among others: measures to reduce private traffic such as the green belt; the inclusion of new mobility services in multimodal interchange nodes; use of advanced technologies such as MaaS to increase the efficiency and reliability of public transport; redesign of urban space, new tram lines and, in general, strengthening of public transport. |
| User Project CHI | 8 | Department of Sustainable Mobility and Transport | User Project CHI | Design of electric charging networks based on user needs; distribution of a framework and an interoperability platform to improve the use of charging infrastructures also through the integration of smart networks; development of marketable, innovative and highly cost-effective charging systems; co-design and demonstration of new and sustainable business and market models; make legal and regulatory recommendations for massive deployment of electric vehicles |
| SISVU project | 9 | Department of Sustainable Mobility and Transport | SISVU project | Exit Gate System - Historic Center of Rome |
| Electrification of light transport vehicles | 32 | Ama S.p.A. | Electrification of light transport vehicles | Purchase of 514 electric transportation vehicles by 2029 (23% of AMA's total vehicle fleet) |
| Heavy vehicles powered by methane and biofuel | 33 | Ama S.p.A. | Heavy vehicles powered by methane and biofuel | Introduction of 179 methane/biofuel vehicles by 2029 (8% of the total heavy vehicle fleet) |
| Installation of charging stations | 50 | Ama S.p.A. | Installation of charging stations | Installation of 4 electric charging stations serving AMA vehicles and external vehicles |
| Interventions relating to company and employee transport | 73 | Intecs Solutions S.p.A. | Interventions relating to company and employee transport | The following actions are planned: 1) Electrification of the vehicle fleet; 2) New charging station infrastructure; 3) Mobility Manager adoption; 4) Incentives for smart working; 5) Organization of spaces and services for remote meetings; 6) Carsharing/carpooling; 7) Shuttle Service; 8) Training/information/awareness |
| Training and awareness | 74 | Intecs Solutions S.p.A. | Training and awareness | Training for employees on the efficient use of transport |
| Electric charging infrastructure | 83 | Cinecittà S.p.A. | Electric charging infrastructure | 4 charging columns already built (2x22 kW) and the installation of 10 columns more is planned. |
| Fleet electrification | 84 | Cinecittà S.p.A. | Fleet electrification | Buy of electric golf carts (20) and 2 electric company cars; progressive transformation of the entire company fleet to hybrid/electric |
| Mobility Manager, smart working, use of TPL | 85 | Cinecittà S.p.A. | Mobility Manager, smart working, use of TPL | Staff for PSCL drafting; Definition of smart working agreements; Definition of incentives for employees to solicit use of TPL |
| Public initiatives for policies and interventions to improve the efficiency of sustainable mobility | 101 | Kyoto Club | Public initiatives for policies and interventions to improve the efficiency of sustainable mobility | Raising awareness of the sector and citizens on the use of LPT and sustainable mobility |
| Be Adaptive Program | 111 | MAIRE S.p.A. | Be Adaptive Program | Company agreement that allows for agile working methods, with a substantial reduction in CO2 emissions |
| Sustainable mobility - Shuttle bus | 112 | MAIRE S.p.A. | Sustainable mobility - Shuttle bus | Activate a company shuttle to reach company offices and other agreements to support sustainable mobility |
| Carpooling and car sharing | 121 | Toyota Motor Italia S.p.A. | Carpooling and car sharing | Development of KINTO platform for carpooling which allows you to share trips with colleagues; the number of carpooling trips have recorded approximately 62,000 km travelled. Implementation of a corporate carsharing service with 24 hybrid cars available |
| Columns and new green refueling stations | 135 | UrbanV S.p.A. | Columns and new green refueling stations | Installation of 32 fast charge electric charging stations for the energy supply of eVTOL aircraft and handling vehicles, with related works to adapt the supporting electrical infrastructure |
| Fleet electrification | 136 | UrbanV S.p.A. | Fleet electrification | Use of full-electric vehicles to support the operations carried out within the vertiports |
| Vehicle fleet electrification | 142 | Hotel Eden S.r.l. | Vehicle fleet electrification | The purchase of an electric golf car with leasing financing is in progress. |
| Electric vehicle charging stations | 152 | Elettronica S.p.A. | Electric vehicle charging stations | 30 charging stations for cars and motorbikes have already been built and in service, with a total of 57 charging points. The financing includes both the columns installed and those planned in the future |
| Company fleet conversion | 153 | Elettronica S.p.A. | Company fleet conversion | Migration towards Electric & Plug-in Hybrid Vehicles of the company fleet (23 company cars were replaced) |
| Appointment of Mobility Manager and adoption of smart working | 154 | Elettronica S.p.A. | Appointment of Mobility Manager and adoption of smart working | Drafting of the PSCL, with periodic updating by the Mobility Manager; adoption of smart working with an increase of 47% from 2022 to 2023 (60,000 hours worked remotely) |
| Installation of charging stations | 158 | IKEA Italia S.r.l. | Installation of charging stations | 26 fast charge charging stations for customers and company fleet |
| Electrification of the company fleet | 159 | IKEA Italia S.r.l. | Electrification of the company fleet | 100% of the company fleet available to staff of electric vehicles |
| Mobility bonus for co-workers | 160 | IKEA Italia S.r.l. | Mobility bonus for co-workers | Provision of a direct economic contribution to employees for the purchase of subscriptions to local public transport services and sharing of electric cars or scooters; contribution can also be used for the purchase of electric or methane means of transport, including bicycles and scooters. |
| Electrification of the vehicle fleet for last mile deliveries | 161 | IKEA Italia S.r.l. | Electrification of the vehicle fleet for last mile deliveries | Last stretch of delivery to the customer, "last mile", carried out with zero-emission vehicles |
| Charging columns | 183 | Banca di Credito Cooperativo di Roma Soc. Coop. | Charging columns | 11 charging stations installed in the two locations in via Oceano Indiano and via Sardegna |
| Corporate carpooling | 184 | Banca di Credito Cooperativo di Roma Soc. Coop. | Corporate carpooling | Creation of an internal app with incentives and cashback for members |
| Home-work travel questionnaire | 185 | Banca di Credito Cooperativo di Roma Soc. Coop. | Home-work travel questionnaire | Annual report drawn up by the company Mobility Manager based on a questionnaire completed by employees |
| Sustainable mobility for home-work travel | 190 | Angelini Real Estate S.p.A. | Sustainable mobility for home-work travel | 8 charging stations, incentives for smart working, renewal of the company fleet. Planned for the future project to encourage smart working and corporate car sharing, incentives also for employees who will use the TPL |
| Sustainable mobility and electrification | 195 | Università degli Studi di Roma Tor Vergata | Sustainable mobility and electrification | University bus shuttles for station-university transport |
| Research on new intermobility solutions | 196 | Università degli Studi di Roma Tor Vergata | Research on new intermobility solutions | The research intends to carry out a laboratory experiment that investigates individuals' choices regarding issues relating to mobility |
| New charging stations | 218 | Enel X Way Italia S.r.l. | New charging stations | 328 charging points are being installed and the spaces are doubling for 58 additional charging sockets for existing charging stations |
| Management of traffic control systems | 219 | Edison Next Government S.r.l. | Management of traffic control systems | Monitoring of public transport and management of traffic light control of traffic sensors. The project is in collaboration with Roma Servizi Mobilità |
| Traffic control management and modernization of traffic light systems completed | 220 | Edison Next Government S.r.l. | Traffic control management and modernization of traffic light systems completed | Monitoring of public transport and consequent analysis of mobility and traffic data |

## Transport

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Analysis of the state of the electricity and railway network for potential implementations | 222 | ENEA | Analysis of the state of the electricity and railway network for potential implementations | Vulnerability and risk analysis for two critical reference infrastructures such as the electricity grid and the railway network. |
| TLP electrification on rubber | 224 | ENEA | TLP electrification on rubber | Analysis of the public road service offer in the municipal area, in order to identify the most suitable lines for the use of full-electric battery-powered vehicles |
| Smart Working initiatives | 234 | Università degli Studi Roma Tre | Smart Working initiatives | The University is responsible for: guaranteeing agile workers the possibility of alternating days worked in person and days worked remotely, with balanced flexibility; organize smart working for specific availability slots; guarantee the worker rest times and disconnection from technological work equipment |
| Installation of charging stations for electric vehicles | 239 | Leonardo S.p.A. | Installation of charging stations for electric vehicles | Around 100 charging stations installed in the locations of Tiburtina, Pastrengo, Monte Grappa, Laurentina, Montello, Faustiniana |
| Supply of IT systems for monitoring and improving the efficiency of the LPT | 240 | Leonardo S.p.A. | Supply of IT systems for monitoring and improving the efficiency of the LPT | Implementation of IT systems for the monitoring and efficiency of public transport through cutting-edge ICT communication systems |
| Electrification of the vehicle fleet and use of innovative fuels | 241 | Poste Italiane S.p.A. | Electrification of the vehicle fleet and use of innovative fuels | Replacement of the existing fleet with low environmental impact vehicles (BEV and MILD-HYBRID) and use of bio-fuels (HVO) for diesel vehicles |
| Vehicle fleet electrification | 247 | Wind Tre S.p.A. | Vehicle fleet electrification | In 2021 the vehicle fleet was made up of 331 cars, 16% of which were hybrid and/or electric, while in 2023 there were 370 and the share of the total vehicles was 44%. The goal is to reach 50% hybrid/electric cars by 2025 |
| Smart Working Agreement | 248 | Wind Tre S.p.A. | Smart Working Agreement | Through smart working, the company contributed to the reduction of home/work travel for employees of the various Roman offices, was able to dismantle some of the smaller offices in the city and was also able to implement the closure of an entire side of the company headquarters main building in Rome |
| Indirect corporate mobility analysis and mapping of employee trends over the years | 254 | Triumph Italy S.r.l. | Indirect corporate mobility analysis and mapping of employee trends over the years | Since 2020, mapping of company mobility and habits trends via internal survey |
| Corporate car pooling/car sharing program | 278 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Corporate car pooling/car sharing program | Incentives towards more sustainable travel methods, creating virtuous competition among employees |
| Installation of charging stations at city offices | 279 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Installation of charging stations at city offices | 7 charging stations installed and another 6 scheduled to be built by 2027 |
| Company car fleet conversion | 280 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Company car fleet conversion | Replacement of the most polluting vehicles with new generation ones (electric or hybrid) |
| TPL subscriptions at a discounted rate for employees | 281 | Istituto Poligrafico e Zecca dello Stato S.p.A. | TPL subscriptions at a discounted rate for employees | Agreement with ATAC for the purchase of annual subscriptions for employees and family members |
| Implementation of cycle path network sections | 282 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Implementation of cycle path network sections | In collaboration with Municipality III, creation of cycle paths that connect the headquarters with the main infrastructure networks |
| Company shuttle | 283 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Company shuttle | Sharing of the shuttle service for IPZS and ENAV employees |
| Redevelopment of traffic light structures to improve public, cycle and pedestrian transport in Via XX Settembre | 289 | Envision S.r.l. | Redevelopment of traffic light structures to improve public, cycle and pedestrian transport in Via XX Settembre | Experimentation to reduce traffic, optimize public transport and improve pedestrian safety through the use of intelligent vision sensors installed on some traffic lights in Via XX Settembre, Rome |
| Smart working | 291 | INPS - Istituto Nazionale della Previdenza Sociale | Smart working | Since 2019 INPS has experienced the implementation of smart working, more recently it has been added into the Digital Strategic Plan |
| Corporate smart working plan | 300 | Servier Italia S.p.A. | Corporate smart working plan | Fixed smart working for 2 days/week for each employee (1 more day/week from 2022) |
| Enhancement of public charging infrastructure | 302 | Servier Italia S.p.A. | Enhancement of public charging infrastructure | Installation of three charging stations for electric cars of 22 kW each |
| Replacement of the vehicle fleet with electric/hybrid cars | 303 | Servier Italia S.p.A. | Replacement of the vehicle fleet with electric/hybrid cars | Replacement of the current company fleet with hybrid and full electric models to replace diesel models. The company fleet is made up entirely of long-term rental cars |
| Electric vehicle rental | 314 | NH Collection Hotels | Electric vehicle rental | Contract with the green mobility office for the fleet available for two of the city offices |
| Incentives for smart working | 328 | AzzeroCO2 S.r.l. | Incentives for smart working | Since 2021, Azzero has adopted 50% smart working for all company employees |
| Distribution of biofuel at filling stations | 338 | ENI S.p.A. | Distribution of biofuel at filling stations | Contribution to the energy transition path with technologies such as the HVOlution biofuel, Hydrotreated Vegetable Oil (HVO Hydrotreated Vegetable Oil), produced by the transformation of residues, vegetable waste and oils from crops not in competition with the food supply chain. |
| New charging stations | 339 | ENI S.p.A. | New charging stations | New charging stations installed (390) and under installation (258) |
| Car sharing electrification | 340 | ENI S.p.A. | Car sharing electrification | Replacement of thermal Fiat 500s with hybrids vehicles, inclusion of 200 XEV YOYOs in the fleet, 100% electric city cars based on "battery swapping" technology |
| Incentives for smart working | 347 | Banca Popolare Etica S. Coop. p.A. | Incentives for smart working | Agreement between Banca Etica and its employees for smart working for a maximum of 15 days per month. The bank also recognizes the reimbursement of a one-month public transport season ticket for those who use it for at least 6 months |
| Charging stations at the headquarters | 349 | Autostrade per l'Italia S.p.A. | Charging stations at the headquarters | Installation of 114 charging stations at the Rome headquarters, serving the company's electric car fleet |
| Electrification of rental vehicle fleet | 350 | Autostrade per l'Italia S.p.A. | Electrification of rental vehicle fleet | As part of the renewal of the rental contract for the car fleet, the supply of 43 electric cars is expected from 2024 |
| Efficiency improvement of the owned vehicle fleet | 351 | Autostrade per l'Italia S.p.A. | Efficiency improvement of the owned vehicle fleet | As part of the renewal of its vehicle fleet, the company has adopted 119 hybrid/electric vehicles |
| Smart working | 355 | Autostrade per l'Italia S.p.A. | Smart working | Adoption of smart working plan (2 days a week remotely) |
| Corporate transport service | 356 | Autostrade per l'Italia S.p.A. | Corporate transport service | Adoption of a company shuttle between the headquarters and Tiburtina metro station, to encourage intermodal transport |
| Carsharing/company carpooling | 357 | Autostrade per l'Italia S.p.A. | Carsharing/company carpooling | App for corporate car sharing/car pooling management |
| Incentives for hybrid smart working | 364 | Almaviva S.p.A. | Incentives for hybrid smart working | The project, called "Become" is outlined according to the concept of hybrid smart working, involves 25% on-site presence and the remaining 75% remotely |
| Company fleet conversion | 366 | Almaviva S.p.A. | Company fleet conversion | 30 charging stations installed or under construction; conversion of the company fleet to electric |
| Adoption of corporate mobility manager | 367 | Almaviva S.p.A. | Adoption of corporate mobility manager | Adoption of a key figure in the organization of sustainable corporate mobility |
| Installation of charging points for passengers | 376 | Aeroporti di Roma S.p.A. | Installation of charging points for passengers | Installation of charging points for operators, passengers, companions and handler vehicles. |
| Vehicle fleet electrification | 378 | Aeroporti di Roma S.p.A. | Vehicle fleet electrification | Electrification of the vehicle fleet, through the implementation of 800 electric vehicles between Fiumicino and Ciampino |
| Incentives for smart working | 379 | Aeroporti di Roma S.p.A. | Incentives for smart working | In Ciampino, the workers who have joined the smart working solutions are approximately 25 employees |
| Electrification of the vehicle fleet and new infrastructure for charging stations | 388 | ATAC S.p.A. - Azienda per la mobilità | Electrification of the vehicle fleet and new infrastructure for charging stations | Purchase of 411 buses and implementation of charging stations in vehicle hub |
| Renewal of 332 methane buses with progressive dismantling of diesel vehicles | 389 | ATAC S.p.A. - Azienda per la mobilità | Renewal of 332 methane buses with progressive dismantling of diesel vehicles | Progressive dismantle of diesel-powered vehicles and progressive replacement with electric, methane and hybrid vehicles. |

## Transport

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Purchase of 110 18-metre hybrid buses and progressive dismantle of diesel vehicles | 390 | ATAC S.p.A. - Azienda per la mobilità | Purchase of 110 18-metre hybrid buses and progressive dismantle of diesel vehicles | Progressive dismantle of diesel-powered vehicles and progressive replacement with electric, methane and hybrid vehicles. |
| Purchase of 41 12-metre hybrid buses and progressive dismantle of diesel vehicles | 391 | ATAC S.p.A. - Azienda per la mobilità | Purchase of 41 12-metre hybrid buses and progressive dismantle of diesel vehicles | Progressive dismantle of diesel-powered vehicles and progressive replacement with electric, methane and hybrid vehicles |
| Data management software for information coming from metropolitan lines | 392 | ATAC S.p.A. - Azienda per la mobilità | Data management software for information coming from metropolitan lines | Introduction of MAAS digital platforms and software for optimizing energy and water consumption and IoT devices |
| Corporate smart working and Mobility Manager | 419 | BASF ITALIA S.p.A. | Corporate smart working and Mobility Manager | Incentives for corporate smart working and definition of corporate Mobility Manager |
| Installation of charging stations | 420 | BASF ITALIA S.p.A. | Installation of charging stations | Installation of three charging stations for internal use of the company car fleet |
| Car sharing, car pooling and bike park | 444 | Sport e Salute S.p.A. | Car sharing, car pooling and bike park | On the occasion of the various events hosted at the Olympic stadium and the Foro Italico, dedicated parking areas have been provided for car sharing and car pooling, bike parking and the use of electric vehicles to facilitate travel |
| Development of efficient solutions for private transport within the border | 454 | Banca d'Italia | Development of efficient solutions for private transport within the border | Adoption of the Mobility Manager and drafting of the annual PSCL; electrification of the company rental fleet; installation of car charging stations with costs borne by employees; promotion of soft mobility. |
| Renewal of vehicle fleet | 455 | Banca d'Italia | Renewal of vehicle fleet | The activity involves the renewal of the fleet of trucks used for the transport of banknotes and paper in Rome and throughout the country. Replacement of Euro 1 and 2 vehicles with vehicles with a lower environmental impact |
| Charging columns | 467 | FAO | Charging columns | The installation of 8 (11kW) columns is planned for charging the fleet's electric vehicles |
| Charging column infrastructure | 481 | Centro Agroalimentare Roma S. Coop. p.A. | Charging column infrastructure | Installation of 2 normal, 4 ultra fast and 8 fast charging stations; creation of LNG and biofuel supply plant |
| Vehicle fleet electrification | 498 | NETGROUP S.p.a. | Vehicle fleet electrification | Netgroup is taking steps to electrify its vehicle fleet (one in 5 cars is already electric); furthermore, it aims, in the short term, to be able to completely electrify its vehicle fleet, planning to replace the other 4 cars in the fleet with equally electric cars. |
| Adoption of corporate mobility manager | 499 | NETGROUP S.p.a. | Adoption of corporate mobility manager | Integrate the figure of the Mobility Manager into the staff. The main objective is to create a Home-Work Travel Plan (PSCL) which rationalizes staff travel through the analysis, development and verification of various aspects. |
| Proposals to incentivize smart working and promote soft mobility | 500 | NETGROUP S.p.a. | Proposals to incentivize smart working and promote soft mobility | The objective is to help reduce the need for daily travel, through platforms and company policies that encourage remote working. Furthermore, the aim is to include, in a short period of time, within the company fleet 5 electric scooters for the benefit of employees and 3 electric scooters dedicated to the Company's top roles. |
| Organization of spaces and services for remote meetings | 501 | NETGROUP S.p.a. | Organization of spaces and services for remote meetings | Over the last year, Netgroup has already implemented various actions in order to organize its spaces and services for remote meetings both internally within the company among employees and externally with its customers, partners and suppliers. |
| Corporate governance review | 502 | NETGROUP S.p.a. | Corporate governance review | Adoption of multilevel governance committed to climate objectives which includes: sustainability committee of the Board of Directors, working groups for the reduction of emissions, regulated performance monitoring, incentives for the dissemination of good practices among employees |
| New charging stations at the headquarters | 509 | ABB S.p.a. | New charging stations at the headquarters | Installation of charging stations for use by the company fleet |
| Electrification of public transport dedicated to disabled students | 515 | Enel X Italia S.r.l. | Electrification of public transport dedicated to disabled students | Supply of 20 electric school buses equipped for the transport of children and young people with disabilities, installation of a medium/low voltage cabin, supply and installation of 10 charging infrastructures, maintenance of all assets and the supply of energy from renewable sources |

**IPPU**

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Refrigerant gas replacements | 164 | IKEA Italia S.r.l. | Refrigerant gas replacements | Replacement of chillers for cooling kitchen equipment with CO2 chillers. The intervention has already been completed at the Anagnina site (2018), while at Porta di Roma it is expected in 2028 |
| Monitoring of emissions from industrial processes | 426 | Biscotti P.Gentilini S.r.l. | Monitoring of emissions from industrial processes | Monitoring of the plant's emissions is underway to reduce ethanol from oven emissions |
| Optimization of the GHG release process | 503 | NETGROUP S.p.a. | Optimization of the GHG release process | More sustainable solutions in compliance with developing methodology strategies that aim to limit energy consumption. In particular, the project involves the setting up of a laboratory for the regeneration of technological equipment for the implementation of green solutions. The laboratory will be set up with a series of systems and equipment for the repair and testing of IT systems. |

## AFOLU

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Redevelopment of green areas at the Santa Maria della Pietà Lombroso area | 18 | Department of Infrastructure Development and Urban Maintenance | Redevelopment of green areas at the Santa Maria della Pietà Lombroso area | Redevelopment of the area to make it a metropolitan reference point, enhancing the environmental and agricultural characteristics of the place, its archaeological heritage, historical, artistic and cultural peculiarities, also encouraging its tourist and accommodation potential. |
| Awareness campaign on the ecological footprint | 42 | Ama S.p.A. | Awareness campaign on the ecological footprint | Incentives for the purchase of plants and support elements for the cultivation of indoor plants |
| Edible Academy - New hydroponic removable greenhouse | 69 | Orto Botanico di Roma/Polo Museale | Edible Academy - New hydroponic removable greenhouse | Construction of a hydroponic and aeroponic greenhouse for the cultivation of agricultural varieties. The project is part of a training course aimed at schools |
| Project "The Tiny Forest" | 70 | Orto Botanico di Roma/Polo Museale | Project "The Tiny Forest" | Experimental initiative to select and encourage the development of plant communities suitable for the urban context in which they are inserted. The cost of the investment refers to each microforest created (2) and planned to be created (3). |
| Bee forest | 99 | Greenpeace Onlus | Bee forest | Forestation of an abandoned area in the Tiburtino district; planting of fruit plants, medicinal herbs, berries, vegetables |
| Urban Nature | 106 | WWF Italia - ETS | Urban Nature | Event in Rome and various collateral initiatives and workshops, throughout Italy, to rediscover urban biodiversity and stimulate a new vision of urban spaces, giving value to nature. |
| Urban oasis Castel Romano | 107 | WWF Italia - ETS | Urban oasis Castel Romano | Afforestation and improvement of greenery management in the Castel Romano area (11 hectares); environmental education and awareness projects |
| Nature classrooms | 108 | WWF Italia - ETS | Nature classrooms | The project, in collaboration with Procter&Gamble, involves the creation of various micro-habitats, such as ponds, hedges, butterfly gardens and educational gardens in Italian schools. At the moment there are 6 Nature Classrooms in Rome |
| European GenerACTOR project | 125 | Risorse per Roma S.p.A. | European GenerACTOR project | Creation of urban and productive vegetable gardens in the city neighborhoods, strengthening local communities and strategies for the sustainable urban transformation of green areas |
| European IURC project | 126 | Risorse per Roma S.p.A. | European IURC project | Project which aims to strengthen the capacities of local communities to co-create sustainable urban transformation strategies, develop a participatory model for the design and implementation of urban community gardens and public green spaces, promote a networking strategy at local and international level, integrating urban communities in sustainable development initiatives |
| European URBACT project | 127 | Risorse per Roma S.p.A. | European URBACT project | Project to enhance public green areas and common goods as urban spaces of resilience, inclusion and social aggregation, to the benefit of urban collective identity |
| Urban forestry | 172 | Terna S.p.A. | Urban forestry | Adherence to the national Green Mosaic campaign with forestation and planting of 180 trees. Creation of two 200 m2 microforests (Tiny Forest) |
| Orchard planting | 187 | Banca di Credito Cooperativo di Roma Soc. Coop. | Orchard planting | Planting of 120 plants at the Capodarco Agriculture cooperative |
| Planting project | 192 | Università degli Studi di Roma Tor Vergata | Planting project | As part of the Best Go Green project, trees planting to reduce the CO2 emissions produced by the University |
| Cleaning of Lazio beaches | 251 | Triumph Italy S.r.l. | Cleaning of Lazio beaches | The action contributed to create cleaner and safer urban environments, improving the quality of life of residents and protecting coastal ecosystems, in line with the aims of making cities inclusive, safe, resilient and sustainable |
| Compensatory planting | 252 | Triumph Italy S.r.l. | Compensatory planting | Planting of 130 olive trees to reduce 87,000 kg of CO2 produced by the G20 summit in Rome |
| Environmental education project | 259 | Fondazione Marevivo - ETS | Environmental education project | Beach cleaning activities, waste recovery and collection, data monitoring along the coasts of the Lazio coast |
| Plastic Pirates Project | 260 | Fondazione Marevivo - ETS | Plastic Pirates Project | Study on the state of health of rivers, in particular to monitor the presence of plastic, involving young people from first and second level secondary schools |
| Promotion of the law for the protection of the sea | 262 | Fondazione Marevivo - ETS | Promotion of the law for the protection of the sea | Advocacy activities and information campaigns to draw attention to the issue of marine pollution |
| Planting 25 trees at the Val Cannuta park | 308 | Servier Italia S.p.A. | Planting 25 trees at the Val Cannuta park | Redevelopment of the area not far from the company headquarters |
| Afforestation of some urban areas and city parks | 326 | AzzeroCO2 S.r.l. | Afforestation of some urban areas and city parks | Afforestation of urban areas and city parks: urban park via Levanna; Mostacciano district; via Croce; Garbatella district; Marcinelle Fallen Park; Casalotti district; Conca d'Oro district; Monte Ciocci park; Ardeatino district |
| Solidarity fruit and vegetable garden | 327 | AzzeroCO2 S.r.l. | Solidarity fruit and vegetable garden | New plantings at the "La Nuova Arca" and "Capodarco" cooperatives |
| Urban reforestation | 460 | Banca d'Italia | Urban reforestation | In the territory of Rome Capital, 1,500 trees were planted in a total area of 1 hectare in the Eur Mezzocamino area (2023) |
| Urban reforestation | 470 | FAO | Urban reforestation | Expansion of the permeable green surface and increase in trees and plants within the areas pertaining to the FAO headquarters |
| Development of the green areas close to the FAO headquarters | 471 | FAO | Development of the green areas close to the FAO headquarters | Planting of approximately 3,000 shrubs and 10 trees and creation of a recreational nature walk for staff |
| Urban reforestation in non-functional areas | 482 | Rete Ferroviaria Italiana S.p.A. | Urban reforestation in non-functional areas | Memorandum of understanding with the municipality to redevelop areas no longer functional to railway activity, to use them for forestation (approximately 72.000 m2). The feasibility is to be evaluated with the municipal administration |
| Protection measures and implementation of the ecological network | 483 | Rete Ferroviaria Italiana S.p.A. | Protection measures and implementation of the ecological network | Creation of green roofs, de-waterproofing and islands of neutrality in RFI company areas not functional to railway operations |
| Technical roundtables for adaptation strategies to climate change | 484 | Rete Ferroviaria Italiana S.p.A. | Technical roundtables for adaptation strategies to climate change | Reduction of the impact of urban floods, due to flash flood phenomena and mitigation of the effects linked to heat waves through synergistic actions. The feasibility is to be evaluated with the municipal administration on the basis of the progress of the technical tables |
| Redevelopment of the banks and green areas along the Tiber river | 485 | Department of Urban Planning and Implementation | Redevelopment of the banks and green areas along the Tiber river | Intervention for the redevelopment of the river area of the Tiber river |
| Sea park - Ostia Antica (Willy Ferrero park) | 486 | Department of Urban Planning and Implementation | Sea park - Ostia Antica (Willy Ferrero park) | Intervention for the redevelopment of the park adjacent to the sea coast with NBS solutions |
| Urban microforests | 487 | Department of Urban Planning and Implementation | Urban microforests | Identified area to carry out interventions for 246 plants including trees and shrubs to be planted. |
| Climate adaptation actions at the headquarters | 488 | Angelini Real Estate S.p.A. | Climate adaptation actions at the headquarters | Planting of trees and efficient management of water resources with rainwater recovery implementation systems for reuse in irrigation |
| Resilient management of water resources | 490 | Aeroporti di Roma S.p.A. | Resilient management of water resources | This approach also involves the creation of "diffuse" lamination volumes to avoid the concentration of water volumes, the use and reconversion of existing works, and the creation of controlled flooding areas |
| Reduction of impervious surfaces | 491 | Ama S.p.A. | Reduction of impervious surfaces | Flooring in recycled material to reduce soil consumption, waterproofing and heat absorption in the areas surrounding the operational headquarters |
| Rewarding criteria for planting outdoor areas | 492 | Ama S.p.A. | Rewarding criteria for planting outdoor areas | Provision of areas surrounding the company headquarters for the planting of trees to be agreed with the interested bodies |
| Climate adaptation interventions | 493 | Agenzia del Demanio | Climate adaptation interventions | Interventions to reduce waterproof surfaces and improve the green areas to reduce the urban heat island effect |
| Territory and heat island monitoring | 494 | ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale | Territory and heat island monitoring | Activities that are part of the IRIDE project for monitoring the transformations of the territory in terms of new land consumption, waterproofing, reforestation to evaluate the relationship between the transformation dynamics and the urban heat island phenomenon. |

## Waste

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Casal Selce biogas to biomethane upgrading station | 30 | Ama S.p.A. | Casal Selce biogas to biomethane upgrading station | The objective is the conversion of biogas produced from organic sources into biomethane, which will partly be used for the production of electricity for self-consumption, while the majority will be sent for upgrading and production of biomethane for transport. In addition, a CO2 recovery section will be provided within the plant, which will avoid its dispersion into the atmosphere, allocating it for commercial purposes. |
| Cesano biogas to biomethane upgrading station | 31 | Ama S.p.A. | Cesano biogas to biomethane upgrading station | The objective is the conversion of biogas produced from organic sources into biomethane, which will partly be used for the production of electricity for self-consumption, while the majority will be sent for upgrading and production of biomethane for transport. In addition, a CO2 recovery section will be provided within the plant, which will avoid its dispersion into the atmosphere, allocating it for commercial purposes. |
| Awareness campaign and other behavioral measures | 34 | Ama S.p.A. | Awareness campaign and other behavioral measures | Awareness campaign on waste collection as an initiative to promote sustainable behavior and improve the waste cycle |
| Digital Transformation Program | 35 | Ama S.p.A. | Digital Transformation Program | The objective is to improve company production processes using IT technologies, including a CRM system and the development of a digital twin in waste sector |
| Efficient waste treatment systems | 68 | Orto Botanico di Roma/Polo Museale | Efficient waste treatment systems | Purchase and use of a bioshredder to reduce the production of biomass from prunings and plant waste, avoiding transport to landfill |
| Smoking point installation | 86 | Cinecittà S.p.A. | Smoking point installation | Installation of 58 RECIG smoking points for the recovery and transformation of cigarette butts into plastic material, which can be used to produce new objects. |
| Process optimization to reduce GHG release | 87 | Cinecittà S.p.A. | Process optimization to reduce GHG release | Creation of a new permanent set and definition of guidelines for the creation of reusable modular scenography, use of low impact and/or certified materials, green procurement |
| Supply of drinking water from the water network | 89 | Cinecittà S.p.A. | Supply of drinking water from the water network | Distribution of water bottles to all employees and installation of 60 dispensers to avoid plastic water |
| Upcycling projects with a social vocation | 91 | Cinecittà S.p.A. | Upcycling projects with a social vocation | Recovery and reuse of materials: 1) Project with MALEFATTE: the PVC advertising material used for the Rome Videogamelab 2022 event and for the institutional campaign of the same year was recovered and reused for the creation of the 2022 Christmas gifts; 2) Project with FODY: the sheets used during the David di Donatello 2024 were recovered and donated to Fody, a benefit society and innovative start-up with a social vocation. |
| Hydrogen Valley | 113 | MAIRE S.p.A. | Hydrogen Valley | Project involving the construction of a hydrogen and ethanol production plant from waste. The plant will allow the production of up to 20,000 tons/year of hydrogen, also contributing to the management of solid waste |
| European FUSILLI project | 124 | Risorse per Roma S.p.A. | European FUSILLI project | Project to support the transformation of the urban food system through the implementation of innovative participatory laboratories, workshops and debates; increase in territorial partnerships |
| Adoption of sustainable practices | 143 | Hotel Eden S.r.l. | Adoption of sustainable practices | Replacement of sheets and towels not daily |
| Reduction of water consumption | 144 | Hotel Eden S.r.l. | Reduction of water consumption | The building is under audit to evaluate any areas of implementation and reduction of water consumption |
| Waste collection monitoring | 146 | Hotel Eden S.r.l. | Waste collection monitoring | Waste collection system using smart containers, monitoring of waste generated to identify any critical issues |
| Responsible waste management | 162 | IKEA Italia S.r.l. | Responsible waste management | Recycling of 94% of waste at the Anagnina site and 96% at the Porta Roma site. From 2020 recycling of the entire organic fraction for biogas production |
| IWAY project | 163 | IKEA Italia S.r.l. | IWAY project | Guidelines for suppliers in four main areas: child labour, co-workers, environment and animal welfare. |
| Circular projects | 165 | IKEA Italia S.r.l. | Circular projects | Some projects for reducing waste production, with the valorisation of waste: Bring back and resell; Replacement components; Too Good to Go membership |
| Circular economy projects | 175 | Unindustria | Circular economy projects | Studies and projects carried out by Unindustria on behalf of its members: sustainable production and solutions for the future; the green challenge; from energy to new materials |
| Maintenance of ecological area for separate waste collection | 186 | Banca di Credito Cooperativo di Roma Soc. Coop. | Maintenance of ecological area for separate waste collection | Maintenance of the ecological area created at the headquarters in via Oceano Indiano, to improve the separate waste collection process |
| Digitalization of banking services | 188 | Banca di Credito Cooperativo di Roma Soc. Coop. | Digitalization of banking services | Campaigns for the home banking service, reduction of paper and graphometric signature service |
| Plastic Credits program development | 197 | Università degli Studi di Roma Tor Vergata | Plastic Credits program development | Certification system for environmental impact reductions (e.g. higher percentage of recycled material or lower use of plastic in packaging) |
| Roma Tre project against plastic | 233 | Università degli Studi Roma Tre | Roma Tre project against plastic | Project to discourage the use of disposable plastic bottles by making drinking water dispensers available to students and staff |
| Promotes the implementation of the UN's ten-year program for a sustainable consumption and production model | 255 | Triumph Italy S.r.l. | Promotes the implementation of the UN's ten-year program for a sustainable consumption and production model | In 2022, the procurement office was established to follow up on the commitment made following the ISO certification: the main actions currently carried out are on separate waste collection and reduction of printed paper |
| Cleaning activities of the river banks and bottoms | 261 | Fondazione Marevivo - ETS | Cleaning activities of the river banks and bottoms | Removal of waste and cleaning of the banks of the areas within the city of Rome and installation of waste catcher barriers |
| 3R project | 304 | Servier Italia S.p.A. | 3R project | Free recovery project for furniture and IT materials for the employees |
| Plastic Free Project | 305 | Servier Italia S.p.A. | Plastic Free Project | The supply of plastic bottles from the company canteen has not been available anymore |
| HP Planet Partners | 306 | Servier Italia S.p.A. | HP Planet Partners | Commercial deal with HP (priter supplier) for the collection of empty toners |
| Zero waste project | 315 | NH Collection Hotels | Zero waste project | Project that aims to reduce solid waste produced in city hotels locations |
| RiusiamOLi project | 341 | ENI S.p.A. | RiusiamOLi project | Project to raise awareness of the collection of used vegetable oils from domestic users |
| Regulated waste management | 368 | Almaviva S.p.A. | Regulated waste management | The waste management process is regulated by a specific procedure that regulates the operational and disposal activities of all excess substances and materials |
| Reuse water | 371 | Aeroporti di Roma S.p.A. | Reuse water | Extension of dual treated water network for the improvement of the airport water network |
| Digitalization of internal processes and company procedures | 377 | Aeroporti di Roma S.p.A. | Digitalization of internal processes and company procedures | Introduction of digital platforms, water consumption optimization software and installation of IoT devices |
| Digitization of travel documents | 393 | ATAC S.p.A. - Azienda per la mobilità | Digitization of travel documents | Contactless payment services, new validators for reading digital tickets, adoption of multiple travel ticket issuing machines |
| Digitalization of internal processes with a progressive transition to digital | 394 | ATAC S.p.A. - Azienda per la mobilità | Digitalization of internal processes with a progressive transition to digital | MAAS digital platforms for the optimization of energy and water consumption and the installation of IoT devices |
| Sludge Plan: rationalization of the entire sector to achieve a 40% reduction in sludge by 2026 | 401 | ACEA ATO 2 S.p.A. | Sludge Plan: rationalization of the entire sector to achieve a 40% reduction in sludge by 2026 | Centralized sludge treatment which will allow to achieve a reduction in the volumes of sludge produced and the development of the waste deriving from the wastewater purification process |
| Biomethane production from wastewater treatment | 403 | ACEA ATO 2 S.p.A. | Biomethane production from wastewater treatment | Biogas upgrading project into biomethane of Rome purification plants, for use in the transport sector. Project was completed in 2023 and the authorization phase is underway. |
| Recovery of material from wastewater treatment | 404 | ACEA ATO 2 S.p.A. | Recovery of material from wastewater treatment | Through soil washing, i.e. recovery of material such as sand, gravel and gravel, the action aim is the reuse of waste water as a secondary raw material |
| Reuse of non-potable water as process water within purification plants | 405 | ACEA ATO 2 S.p.A. | Reuse of non-potable water as process water within purification plants | Renovation and integration interventions of industrial water networks at the major purification plants in Rome, with the reuse of non-potable water as process water within the purification plants themselves |
| Sewerage districting | 407 | ACEA ATO 2 S.p.A. | Sewerage districting | Monitoring system for sewerage networks with district division of the networks and reduction of parasitic flows in the network |
| Reduction of losses on distribution networks | 408 | ACEA ATO 2 S.p.A. | Reduction of losses on distribution networks | Leak detection activities, with the aim of recovering the greatest possible quantity of resource |
| AQUARUM project | 409 | ACEA ATO 2 S.p.A. | AQUARUM project | Study on potential underground water resources and the impacts on their withdrawal |

## Waste

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Recycling and recovery practices | 424 | Biscotti P.Gentilini S.r.l. | Recycling and recovery practices | The company has long since started the recovery and recycling of paper and cardboard and the recycling process of vegetable oils; the recycling of plastic material is being defined |
| Elimination of the internal purifier and sewer connection to the ACEA network | 425 | Biscotti P.Gentilini S.r.l. | Elimination of the internal purifier and sewer connection to the ACEA network | Development, extension and efficiency interventions of the sewerage infrastructure |
| Use of recycled materials for the packaging of products | 427 | Biscotti P.Gentilini S.r.l. | Use of recycled materials for the packaging of products | The company plans to change its packaging to make it more sustainable |
| Waste reduction interventions | 446 | Sport e Salute S.p.A. | Waste reduction interventions | Reduction in the use of plastic in packaging, increasing the commitment to waste sorting |
| Adaptation works at the Malagrotta landfill | 447 | Department of Environmental Protection | Adaptation works at the Malagrotta landfill | Interventions to make the site safe, through waterproof-capping coverage, and construction of systems for the capture of biogas and the treatment of leachate; the interventions are assigned to a third-party company through a public tender announced by the National Commissioner of landfills |
| Reuse packaging materials | 456 | Banca d'Italia | Reuse packaging materials | Reuse, in collaboration with the supplying paper mills, of wooden pallets/tops for the transport of watermarked paper for the production of banknotes. 90% of packaging materials were reused in 2022-2023 |
| Donation of reusable goods | 457 | Banca d'Italia | Donation of reusable goods | Furnishings, computers and other accessories are donated to other entities in need such as schools and non-profit organizations |
| Installation of water dispensers | 458 | Banca d'Italia | Installation of water dispensers | Installation of water dispensers connected to the local water network in company canteens in the Rome area, in order to avoid the use of water packaged in plastic bottles. 80% reduction in plastic bottles compared to the previous year |
| Elimination of landfilling of shredded banknotes | 459 | Banca d'Italia | Elimination of landfilling of shredded banknotes | Since January 2023, all the Bank's branches have been sending the shredded waste to waste-to-energy plants. More sustainable solutions than the waste-to-energy plant are currently being evaluated for the future, such as the possible reuse of the shredded material in other contexts, for example in construction materials |
| Packaging systems with lower environmental impact | 461 | Banca d'Italia | Packaging systems with lower environmental impact | The activity involves the study of alternative banknote packaging systems to those currently in place, with the aim of reducing the environmental impact of the cash sorting process |
| Waste treatment efficiency | 472 | FAO | Waste treatment efficiency | Installation of a composter in the ecological area for the treatment of approximately 80 t/y of organic waste |
| Installation of food waste monitoring stations | 473 | FAO | Installation of food waste monitoring stations | Smart scales installed in all catering spaces and kitchens to calculate the amount of organic waste resulting from food preparation and consumption. Awareness action to reduce food waste for all canteen and bar users |
| Study for the efficiency of waste collection and production | 476 | Fabbrica San Pietro | Study for the efficiency of waste collection and production | Environmental assessments through cost-benefit analyzes of products in use; new governance measures for the separate collection of recoverable fractions |
| Replacement of synthetic materials with recycled natural fabrics | 477 | Fabbrica San Pietro | Replacement of synthetic materials with recycled natural fabrics | Replacement of disposable shoulder covers used by visitors with washable ecological cotton products |
| Efficient waste treatment systems | 514 | ABB S.p.a. | Efficient waste treatment systems | Zero waste to landfill project and UL certification |

## Cross Cutting

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| University training course | 64 | Università degli Studi "La Sapienza" | University training course | Training course open to all students to introduce the concept of cultural, ecological and digital transition linked to education, individual and collective behavior. The sending of periodical newletters is also planned to raise awareness on the consumption reduction |
| Online and on-site communication | 88 | Cinecittà S.p.A. | Online and on-site communication | The company's manifesto of values, the Green standards and the rules for the responsible use of spaces have been drawn up |
| Low impact and carbon neutral events | 90 | Cinecittà S.p.A. | Low impact and carbon neutral events | Creation of the first reduced impact and carbon neutral edition of the Rome Videogamelab festival. |
| Training path | 96 | CER Confartigianato Lazio | Training path | Training aimed at professional technical employees. The cost refers to the single course provided |
| Consultancy for obtaining incentives for CER | 97 | CER Confartigianato Lazio | Consultancy for obtaining incentives for CER | Expert technical office to support REC member companies. |
| Renewable energy communities | 98 | CER Confartigianato Lazio | Renewable energy communities | Support for the creation and possible participation in Renewable Energy Communities |
| ESG Scoring | 114 | MAIRE S.p.A. | ESG Scoring | Screening of company suppliers to qualify the level of sustainability of their services and products |
| Stakeholder engagement & advocacy | 115 | MAIRE S.p.A. | Stakeholder engagement & advocacy | Training aimed at employees and stakeholders to promote the culture of sustainability |
| Adoption of TCFD recommendations and related reporting | 116 | MAIRE S.p.A. | Adoption of TCFD recommendations and related reporting | Assessment of risks and opportunities linked to climate change, identification and management of physical risks linked to the energy transition, valorisation of opportunities linked to the emergence of new markets |
| European EFUA project | 123 | Risorse per Roma S.p.A. | European EFUA project | Definition of Research & Innovation practices and programs in the agricultural and food sector and in the urban bioeconomy Establishment of the European Forum on Urban Agriculture, to ensure the involvement of interested parties |
| Training and awareness in the field of sustainability | 137 | UrbanV S.p.A. | Training and awareness in the field of sustainability | Training and information activities on the services offered |
| Internal thematic training | 139 | Sensoworks S.r.l. | Internal thematic training | Monthly meeting with sustainability-themed lessons. Each lesson will have a specific topic, especially from an environmental impact perspective, aimed at raising employee awareness. |
| Sustainability awareness events | 145 | Hotel Eden S.r.l. | Sustainability awareness events | Training sessions for employees in the field of ecological transition and climate neutrality |
| Use of environmental criteria in the choice of partners and suppliers | 147 | Hotel Eden S.r.l. | Use of environmental criteria in the choice of partners and suppliers | Evaluation of stakeholders active in the supply chain through an internal questionnaire |
| Environmental management system and environmental certification | 150 | Elettronica S.p.A. | Environmental management system and environmental certification | Implementation of an Environmental Management System and Certification of compliance with UNI EN ISO 14001 and EMAS |
| Training of company staff | 151 | Elettronica S.p.A. | Training of company staff | Transfer basic information on the principles of environmental sustainability and the operational methods for managing environmental aspects related to work activities to the company population. |
| Concrete actions for sustainability at home | 157 | IKEA Italia S.r.l. | Concrete actions for sustainability at home | Project which aims to show in a simple and immediate way the correlation between economic convenience and environmental protection, in relation to daily habits and actions that can be adopted in private homes. |
| Contest among Unindustria employees for the sustainability of the offices; Information campaign relating to RES and widespread self-consumption | 173 | Unindustria | Contest among Unindustria employees for the sustainability of the offices; Information campaign relating to RES and widespread self-consumption | Contest among Unindustria employees for the sustainability of the offices. Information campaign relating to RES and widespread self-consumption |
| Working group on the topic of water with associated companies | 174 | Unindustria | Working group on the topic of water with associated companies | Double awareness raising action, on the one hand towards the institutions, on the other towards the associated companies. The objective remains to collaborate in order to identify solutions to improve the accessibility of water, to make its use more efficient and, in general, to implement a more sustainable approach to water resources. |
| Sustainability showcase project and ESG handbook | 176 | Unindustria | Sustainability showcase project and ESG handbook | The objective is to develop projects through which, together with businesses, a new model of sustainable development can be spread across the territory |
| Training projects | 191 | Università degli Studi di Roma Tor Vergata | Training projects | Drop Project; Chair Project; Sustainability Report Pillars Project; Taxation and public finance in the transition towards sustainable economic development; SUSA project; From training to action: innovative civic education project for sustainable development; GRINS project; Seminars "Towards the 2030 Agenda" in collaboration with CMRC; CSR Salon |
| New Economy Laboratories | 198 | Università degli Studi di Roma Tor Vergata | New Economy Laboratories | Laboratories and workshops that aim to stimulate social innovation and self-entrepreneurship from a sustainability perspective, in line with the UN Sustainable Development Goals (Agenda 2030). |
| Hackathon | 199 | Università degli Studi di Roma Tor Vergata | Hackathon | "HackaTor" initiative to seek innovative ideas on sustainability in the Lazio Region. This is an initiative open to undergraduates and graduates of the University of Rome Tor Vergata and dedicated to planning a smart and sustainable future. |
| Drafting of PFTE project guidelines | 200 | Università degli Studi di Roma Tor Vergata | Drafting of PFTE project guidelines | Evaluation of sustainability, economic-financial and urban planning aspects by integrating its own research models with European Commission models of projects being evaluated |
| Collaboration with CMRC on questionnaires and thematic tables for the improvement of services to citizens | 201 | Università degli Studi di Roma Tor Vergata | Collaboration with CMRC on questionnaires and thematic tables for the improvement of services to citizens | Questionnaire useful for: contributing to mapping the interests and awareness of young people with the aim of integrating their vision into the strategic sustainable development planning documents (PSM and AmSS) of the CMRC; collect memberships for the Working Groups with the CMRC (details sheet 26); identify youth organizations operating in the CMRC territory engaged in social, environmental, cultural or digitalisation issues. |
| Redevelopment of municipal schools from a REC and PED perspective | 221 | ENEA | Redevelopment of municipal schools from a REC and PED perspective | Enea makes its know-how available with a view to developing non-invasive REC and PED in the main buildings of the historic center of Rome |
| ISO 20121 certification | 253 | Triumph Italy S.r.l. | ISO 20121 certification | Publication of a handbook of guidelines to ensure that all guidance provided is applied to all events |
| Project dedicated to schools to rediscover the richness of the Tiber river | 258 | Fondazione Marevivo - ETS | Project dedicated to schools to rediscover the richness of the Tiber river | The project, which is aimed at secondary schools, aims to raise awareness of the biodiversity of the river, its potential and the risks linked to lack of care |
| One Planet, Once Ocean, One Health communication campaign | 263 | Fondazione Marevivo - ETS | One Planet, Once Ocean, One Health communication campaign | Draw the attention of public opinion, institutions and all interested stakeholders to the urgency, which cannot be postponed, of protecting the biodiversity heritage of the Sea and Oceans |
| Construction of the new energy independent Marevivo barge | 264 | Fondazione Marevivo - ETS | Construction of the new energy independent Marevivo barge | The boat will be the headquarters of the Association, and will contain spaces for meetings and conferences |
| Staff awareness campaign and digitalisation of internal activities | 275 | Istituto Poligrafico e Zecca dello Stato S.p.A. | Staff awareness campaign and digitalisation of internal activities | Raising awareness among staff for greater awareness of energy saving through dematerialisation/digitalisation of internal processes |
| Definition of a development roadmap for the ecological transition of the city | 287 | Green Building Council Italia | Definition of a development roadmap for the ecological transition of the city | Identification of specific objectives and actions at city level in coordination with the actions and objectives of local stakeholders |
| Development of software for measuring ESG risk in the Sports and Culture sectors | 288 | Istituto per il Credito Sportivo | Development of software for measuring ESG risk in the Sports and Culture sectors | Development of an evaluation model and an IT tool for the ex-ante measurement (before financing) of the ESG risk (through the ESG Rating) and the socio-environmental impact (through the SROI - Social Return on Investment). |
| Feel Safe platform | 294 | Save the Children Italia - ETS | Feel Safe platform | Educational proposals on prevention and education for climate change emergencies and its impact on the frequency and intensity of emergencies |
| Internal employee training on sustainability issues | 299 | Servier Italia S.p.A. | Internal employee training on sustainability issues | Training newsletters aimed at employees; online training test entitled "Servier Italia environmental management system" |
| ISO14001 environmental certification | 307 | Servier Italia S.p.A. | ISO14001 environmental certification | The certification confirms the commitment to respect environmental criteria |
| Eniscuola projects | 342 | ENI S.p.A. | Eniscuola projects | Projects with the aim of raising students' awareness of current issues related to the energy transition through workshops, meetings and teacher training. |
| Creation of an innovation district for the ecological transition in collaboration with Roma Tre University | 343 | ENI S.p.A. | Creation of an innovation district for the ecological transition in collaboration with Roma Tre University | Events to encourage the creation of collaborations and events to strengthen the relationship between industry and research |
| Training school for innovative and sustainable start-ups | 344 | ENI S.p.A. | Training school for innovative and sustainable start-ups | Joule supports the growth of innovative and sustainable startups to create an entrepreneurial ecosystem in the zero-emission energy supply chain and spread the culture of entrepreneurship inside and outside Eni |

## Cross Cutting

| Action | ID | Stakeholder | Brief description | Detailed description |
|---|---|---|---|---|
| Financing of projects dedicated to combating change and the circular economy | 346 | Banca Popolare Etica S. Coop. p.A. | Financing of projects dedicated to combating change and the circular economy | Emission of credits for circular projects |
| Reduction of the events footprint | 348 | Banca Popolare Etica S. Coop. p.A. | Reduction of the events footprint | The Bank is committed to reduce the environmental impact of its events. For events with 100+ people, the CO2 emissions generated are measured and compensated. |
| ENTRACK project | 359 | Aisfor S.r.l. | ENTRACK project | Training aimed at local and regional authorities for the implementation of strategic objectives |
| ASSERT project | 360 | Aisfor S.r.l. | ASSERT project | Mentoring to reduce energy poverty for people with disabilities |
| COMANAGE project | 361 | Aisfor S.r.l. | COMANAGE project | Support to municipalities for the creation of energy communities |
| ISO 14001 and ISO 50001 environmental certifications | 365 | Almaviva S.p.A. | ISO 14001 and ISO 50001 environmental certifications | Environmental impacts are managed through the Environmental and Energy Management System |
| Virtuous paths of learning and awareness | 369 | Almaviva S.p.A. | Virtuous paths of learning and awareness | Courses aimed at employees on the impacts of their work on the environment, on the rationalization of consumption and conscious use of energy resources |
| Access to credits through the Industry 4.0 Plan | 384 | ATAC S.p.A. - Azienda per la mobilità | Access to credits through the Industry 4.0 Plan | Credits requested for the replacement of tangible and intangible capital goods functional to technological transformation |
| ISO14001 certification on three factories and two metropolitan lines | 387 | ATAC S.p.A. - Azienda per la mobilità | ISO14001 certification on three factories and two metropolitan lines | ISO14001 certification on three hubs and two metropolitan lines. The company environmental management system has been active since 2010 |
| Promotion of sustainability governance by maintaining the quality, environmental and safety management system | 400 | ACEA ATO 2 S.p.A. | Promotion of sustainability governance by maintaining the quality, environmental and safety management system | Sustainability Policy and Integrated Management System, which defines the vision and essential values regarding quality, environment, safety and energy to which the Company's strategies and objectives must refer |
| Stakeholder involvement initiatives with the Acea Scuola and Depurart project | 402 | ACEA ATO 2 S.p.A. | Stakeholder involvement initiatives with the Acea Scuola and Depurart project | Information and training activities on issues relating to the Group's businesses for schools and young people. |
| Roma Up program | 410 | A Sud Ecologia e Cooperazione O.d.V. | Roma Up program | Mapping of urban networks for enhancing participatory environmental engagement: training course on citizen science tools for monitoring environmental key aspects |
| Sustainable culture program | 411 | A Sud Ecologia e Cooperazione O.d.V. | Sustainable culture program | The objective is to inspire the cultural sector in defining creative climate leadership by engaging and training sector operators |
| Climate Sentinels Project | 412 | A Sud Ecologia e Cooperazione O.d.V. | Climate Sentinels Project | The objective is to strengthen the skills and knowledge of young people and educating communities |
| 14001 certification | 453 | Banca d'Italia | 14001 certification | Introduction of environmental management and energy management systems. The Climate Change and Sustainability Committee has been created in 2022: the Bank has nominated the figure of the energy manager, with the aim of reducing energy consumption and, consequently, greenhouse gas emissions. |
| Installation of sensors for monitoring air quality | 478 | Fabbrica San Pietro | Installation of sensors for monitoring air quality | Monitoring of air quality inside St. Peter's Basilica |
| Creation of lamination tanks and reduction of waterproof surfaces | 489 | Centro Agroalimentare Roma S. Coop. p.A. | Creation of lamination tanks and reduction of waterproof surfaces | Necessary prerequisites for customers who intend to develop new buildings in areas under their concession: creation of green spaces, use of permeable materials, purification and/or pre-treatment systems. Interventions are estimated on 200,000 m2 of logistics area |
| Apprenticeship and internship programs for young workers | 495 | FASSA S.r.l (Fassa Bortolo) | Apprenticeship and internship programs for young workers | Train young people and skills to increase their constantly evolving job opportunities |
| Employee training and awareness | 504 | NETGROUP S.p.a. | Employee training and awareness | Information workshops, internal communications and newsletters, certifications and company events to involve employees on the sustainable topics |
| Training and awareness courses | 507 | ABB S.p.a. | Training and awareness courses | Information workshop for lower secondary school students with the aim of creating awareness on the issues of sustainable development |
| Proposals for smart solutions for the intelligent management of the city | 517 | Enel X Italia S.r.l. | Proposals for smart solutions for the intelligent management of the city | Smart parking, smart tourism, satellite surveys, traffic control, communications to citizens: these are initiatives offered to the Administration currently under evaluation |
| Enel X YoUrban portal dedicated to Public Administrations | 518 | Enel X Italia S.r.l. | Enel X YoUrban portal dedicated to Public Administrations | Tools to accompany administrations on the path to sustainable development, digitalizing services to: acquire awareness of the current status of their territory, define the priorities of sustainability interventions and support urban planning decision-making processes. |
| Interventions to encourage the digitalisation of services | 520 | Areti S.p.A. | Interventions to encourage the digitalisation of services | Automation and remote control interventions, 2G Smart meter installation plan, creation of the fiber optic infrastructure |
| Future strategy of interventions for the digitalisation of services | 522 | Areti S.p.A. | Future strategy of interventions for the digitalisation of services | Further interventions and installation of digital systems and strengthening of the fiber optic infrastructure |

ROMA

2030 Climate Neutrality Action Plan

NET ZERO CITIES
EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

# Annex 2

*B-2.2a: Detail of implemented, in progress or approved actions collected within the portfolio, grouped by sector*

## Buildings

| ID | Action | Stakeholder | Direct impact (emission reduction) $tonCO_2eq/a$ | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 1 | Social housing boiler replacement | Department of Heritage and Housing Policies | 39 | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 2 | PPP for the redevelopment of social housing assets serving REC | Department of Heritage and Housing Policies | - | 2024-2026 | Finance and fundings | Social innovation | Governance and policy innovation |
| 10 | First phase CIS - Institutional development contract | epartment of Infrastructure Development and Urban Maintenanc | 4,925 | 2023-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 12 | Tor Bella MonacasSocial housing redevelopment | epartment of Infrastructure Development and Urban Maintenanc | 641 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 13 | Corviale social housing redevelopment | epartment of Infrastructure Development and Urban Maintenanc | 237 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 14 | Pineto social housing redevelopment | epartment of Infrastructure Development and Urban Maintenanc | 323 | 2025-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 15 | Photovoltaic installation in REC | epartment of Infrastructure Development and Urban Maintenanc | 182 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 16 | Porto Fluviale social housing redevelopment | epartment of Infrastructure Development and Urban Maintenanc | 65 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 17 | Cardinal Capranica social housing redevelopment | epartment of Infrastructure Development and Urban Maintenanc | 46 | 2022-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 19 | Consip SIE4 Convention | epartment of Infrastructure Development and Urban Maintenanc | 5,295 | 2022-2024 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 20 | Redevelopment of theatres, cinemas and museums | epartment of Infrastructure Development and Urban Maintenanc | 697 | 2022-2025 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 21 | Promote sports facilities and social inclusion | Department of Major Events, Sport, Tourism and Fashion | 30 | 2022-2026 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 22 | PUI 26 - Santa Maria della Pietà Wellness Centre | epartment of Infrastructure Development and Urban Maintenanc | 453 | 2022-2026 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 23 | Technopole | Department of Environmental Protection | - | 2022-2026 | Finance and fundings | Learnings and capabilities | Social innovation |
| 24 | Redevelopment of the housing offer for temporary housing | Department of Social Policies and Health | 9 | 2022-2026 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 25 | Redevelopment interventions of post stations to transform them into social reception centres | Department of Social Policies and Health | 15 | 2022-2027 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 26 | Interventions to create facilities for non-self-sufficient elderly people | Department of Social Policies and Health | 8 | 2022-2028 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 27 | Installation of photovoltaic energy systems | Rete Ferroviaria Italiana S.p.A. | 511 | 2023-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 28 | Installation of photovoltaic panels Casal Selce | Ama S.p.A. | 559 | 2024-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 29 | Installation of photovoltaic panels in Cesano | Ama S.p.A. | 559 | 2024-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 45 | Activation of photovoltaic solar fields | Ama S.p.A. | 31 | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 46 | Project financing for installation of photovoltaic solar fields | Ama S.p.A. | 172 | 2024-2026 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 49 | Photovoltaic installation on plant building | Ama S.p.A. | 477 | 2024-2027 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 51 | Redevelopment of the Law Library building | Università degli Studi "La Sapienza" | - | 2024-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 52 | Redevelopment of the new Letters library building | Università degli Studi "La Sapienza" | - | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 53 | Energy redevelopment of the General Services Building | Università degli Studi "La Sapienza" | - | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 54 | Construction of university apartments via Osoppo | Università degli Studi "La Sapienza" | - | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 55 | Energy renovation of mechanical and electronic systems of 108 classrooms | Università degli Studi "La Sapienza" | 2,276 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 56 | Replacement of centralized boilers with heat pumps | Università degli Studi "La Sapienza" | 283 | 2022 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 57 | Installation of RES systems completed | Università degli Studi "La Sapienza" | 338 | 2019-2020 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 58 | Installation of RES systems under construction | Università degli Studi "La Sapienza" | 274 | 2024-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 59 | Installation of cogeneration plant | Università degli Studi "La Sapienza" | - | 2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 60 | Relamping external lighting | Università degli Studi "La Sapienza" | 711 | 2021 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 61 | Installation of consumption monitoring and control systems, building automation | Università degli Studi "La Sapienza" | 804 | 2021-2022 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 62 | Redevelopment of electricity grid transformation cabins | Università degli Studi "La Sapienza" | 102 | 2021-2023 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 63 | New solar thermal system | Università degli Studi "La Sapienza" | 11 | 2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 67 | Energy efficiency of display greenhouses | Orto Botanico di Roma/Polo Museale | - | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 71 | Photovoltaic installation on an industrial building undergoing redevelopment | Intecs Solutions S.p.A. | - | 2016-2024 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 72 | Purchase of green electricity | Intecs Solutions S.p.A. | 10 | 2023-2030 | Governance and policy innovation | Governance and policy innovation | - |
| 75 | Energy efficiency of pumping systems | Intecs Solutions S.p.A. | - | 2016-2024 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 76 | Ex Poligrafico financing | Cassa Depositi e Prestiti S.p.A. | - | 2023-2025 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 77 | Financing for the redevelopment of the Torri EUR real estate area | Cassa Depositi e Prestiti S.p.A. | - | 2022-2026 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 78 | Renovation of cabins and electrical panels | Cinecittà S.p.A. | - | 2023-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 79 | Purchase of 100% renewable green energy | Cinecittà S.p.A. | 1,480 | 2023-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 80 | Installation of RES systems | Cinecittà S.p.A. | 754 | 2023-2026 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 81 | Electrification of buildings | Cinecittà S.p.A. | 77 | 2023-2026 | Finance and fundings | Governance and policy innovation | Social innovation |
| 82 | Theater renovation | Cinecittà S.p.A. | - | 2024-2026 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 93 | Photovoltaic systems ready to use | CER Confartigianato Lazio | 1,636 | 2021-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 102 | Replacement of methane boilers with refrigeration units | Fondazione MAXXI | 459 | 2025-2027 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 103 | Installation of photovoltaic systems | Fondazione MAXXI | 137 | 2025-2027 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 104 | Relamping the main museum building, inside and in the square in front | Fondazione MAXXI | 141 | 2025-2027 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 109 | WWF headquarters energy efficiency | WWF Italia - ETS | 30 | 2019-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 117 | Purchase of certified green energy | Toyota Motor Italia S.p.A. | 444 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | - |
| 118 | Photovoltaic systems built | Toyota Motor Italia S.p.A. | 238 | 2021-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 119 | Planned photovoltaic systems | Toyota Motor Italia S.p.A. | 162 | 2024-2027 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 120 | Headquarters efficiency | Toyota Motor Italia S.p.A. | 82 | 2024-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 128 | Energy efficiency | SACE S.p.A. | 84 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 129 | Purchase of certified green energy | SACE S.p.A. | 419 | 2022-2030 | Governance and policy innovation | Technology and infrastructures | - |
| 130 | Installation of RES systems | SACE S.p.A. | 6 | 2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 131 | Introduction of environmental management systems and Energy Manager | SACE S.p.A. | 86 | 2018-2024 | Finance and fundings | Social innovation | Governance and policy innovation |
| 133 | Energy efficiency interventions and optimized energy management | UniCredit S.p.A. | 2,007 | 2019-2023 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 134 | Purchase of certified green energy | UrbanV S.p.A. | - | 2024-2030 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 138 | IoT solutions in office management | Sensoworks S.r.l. | 1 | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 140 | Purchase of certified green energy | Hotel Eden S.r.l. | 758 | 2021-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |

## Buildings

| ID | Action | Stakeholder | Direct impact (emission reduction) $tonCO_2eq/a$ | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 148 | Installation of RES systems | Elettronica S.p.A. | 217 | 2019-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 149 | Building energy efficiency | Elettronica S.p.A. | 53 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 155 | Purchase of green energy | IKEA Italia S.r.l. | 2,878 | 2020-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 156 | Widespread efficiency improvement intervention in the Roman offices | IKEA Italia S.r.l. | 533 | 2019-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 166 | Reorganization of the Magliana area | Terna S.p.A. | - | 2024 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 170 | Cinquina landfill | Terna S.p.A. | - | 2025 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 177 | Energy efficiency improvement of the Viale Oceano Indio headquarters | Banca di Credito Cooperativo di Roma Soc. Coop. | 70 | 2021-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 178 | Energy efficiency of offices located in Rome | Banca di Credito Cooperativo di Roma Soc. Coop. | 33 | 2023 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 179 | Purchase of certified green energy | Banca di Credito Cooperativo di Roma Soc. Coop. | 1,315 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Learnings and capabilities |
| 180 | Installation of photovoltaic systems on parking car shelters | Banca di Credito Cooperativo di Roma Soc. Coop. | 450 | 2024-2025 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 189 | New Casa Angelini building (headquarters) | Angelini Real Estate S.p.A. | 1,273 | 2018-2020 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| 193 | Educational Hub Project | Università degli Studi di Roma Tor Vergata | - | 2022-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 194 | Relamping project | Università degli Studi di Roma Tor Vergata | 227 | 2022-2023 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 202 | Energy efficiency improvement of municipal real estate assets | ENGIE Servizi S.p.A. | 1,328 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 203 | Energy efficiency in secondary schools | ENGIE Servizi S.p.A. | 794 | 2022-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 204 | Energy efficiency improvement of Ministry of the Interior buildings | ENGIE Servizi S.p.A. | 79 | 2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 205 | Energy efficiency improvement of Ministry of Transport buildings | ENGIE Servizi S.p.A. | 298 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 206 | Energy efficiency improvement of Port Authority buildings | ENGIE Servizi S.p.A. | 48 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 207 | Energy efficiency improvement of properties of the Customs and Monopolies Agency | ENGIE Servizi S.p.A. | 29 | 2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 208 | Energy efficiency improvement of Astral Spa headquarters | ENGIE Servizi S.p.A. | 16 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 209 | Energy efficiency improvement of Consip Spa headquarters | ENGIE Servizi S.p.A. | 37 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 210 | Energy efficiency of the VI Municipality headquarters | ENGIE Servizi S.p.A. | 114 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 211 | Efficiency measures for owned buildings | Fondazione Bioparco di Roma | 226 | 2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 212 | IFO Hospital - Relamping | Coopservice S. Coop. p.A. | 156 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 213 | IFO Hospital - Photovoltaic system | Coopservice S. Coop. p.A. | 25 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 214 | IFO Hospital - BMS system expansion | Coopservice S. Coop. p.A. | 408 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 215 | IFO Hospital - Heat pump installation | Coopservice S. Coop. p.A. | 92 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 216 | Architectural interior lighting | Enel Sole S.r.l. | 2 | 2023 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 231 | New headquarters of the Rectorate | Università degli Studi Roma Tre | - | 2018-2021 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 232 | Photovoltaic and CER systems | Università degli Studi Roma Tre | 1,477 | 2024-2026 | Finance and fundings | Democracy and participation | Governance and policy innovation |
| 235 | Process optimization for GHG reduction | Birra Peroni S.r.l. | 319 | 2023 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 236 | Relamping | Leonardo S.p.A. | 426 | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 237 | Installation of photovoltaic systems | Leonardo S.p.A. | 144 | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 242 | Installation of RES systems | Poste Italiane S.p.A. | 382 | 2022-2026 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 243 | Installation of Smart Building systems | Poste Italiane S.p.A. | 568 | 2022-2026 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 244 | Replacement of boilers with heat pumps | Poste Italiane S.p.A. | 300 | 2022-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 245 | Replacement of fluorescent lamps | Poste Italiane S.p.A. | 1,704 | 2019-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 246 | Process optimization to reduce GHG release | Wind Tre S.p.A. | 327 | 2017-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 249 | Purchase of certified green energy | Wind Tre S.p.A. | 250 | 2021-2030 | Governance and policy innovation | Technology and infrastructures | - |
| 250 | Redevelopment intervention in the area close to the headquarters | Triumph Italy S.r.l. | - | 2024-2025 | Governance and policy innovation | Social innovation | Democracy and participation |
| 265 | Purchase of certified green energy | Istituto Poligrafico e Zecca dello Stato S.p.A. | 37,488 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Social innovation |
| 266 | Relamping Rome Capital locations | Istituto Poligrafico e Zecca dello Stato S.p.A. | 935 | 2018-2022 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 267 | Replacement of 3 refrigeration units at the Via Capponi headquarters | Istituto Poligrafico e Zecca dello Stato S.p.A. | 57 | 2019-2022 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 268 | Energy efficiency of the building envelope | Istituto Poligrafico e Zecca dello Stato S.p.A. | 29 | 2021 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 269 | Efficiency of the thermal power plant and replacement of boilers | Istituto Poligrafico e Zecca dello Stato S.p.A. | 23 | 2023 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 270 | Efficiency improvement of the refrigeration unit and replacement of refrigeration units | Istituto Poligrafico e Zecca dello Stato S.p.A. | 81 | 2023 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 272 | Efficiency improvement of historic building with boiler replacement, via Principe Umberto 2/4, | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 273 | Insulation of the attic and installation of an air conditioning system | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 274 | Installation of electrical measurement software on production departments | Istituto Poligrafico e Zecca dello Stato S.p.A. | 148 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 277 | Energy efficiency of the heating system via Salaria | Istituto Poligrafico e Zecca dello Stato S.p.A. | 260 | 2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 290 | Installation of photovoltaic system | Radio Rock - Q S.r.l. | 7 | 2019 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 292 | Decarbonization project of the Rome office | Save the Children Italia - ETS | - | 2022-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 293 | Establishment of a CER | Save the Children Italia - ETS | 10 | 2024-2025 | Social innovation | Democracy and participation | Governance and policy innovation |
| 295 | Purchase of certified green energy | Servier Italia S.p.A. | 284 | 2024-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 296 | Headquarters relamping | Servier Italia S.p.A. | 38 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 297 | Replacement of refrigeration machines | Servier Italia S.p.A. | 10 | 2023-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 309 | Redevelopment of condominium building via Galati (76 apartments) | Teicos UE S.r.l. | 108 | 2022-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 311 | Certified green energy | NH Collection Hotels | 4,615 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | - |
| 316 | Energy efficiency interventions at the CTO Alesini Hospital | Siram S.p.A. | 138 | 2021-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 317 | Installation of photovoltaic systems at the CTO Alesini Hospital | Siram S.p.A. | 24 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 318 | Energy efficiency interventions at S.Eugenio Hospital | Siram S.p.A. | 137 | 2021-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 319 | Installation of trigeneration system at S.Eugenio Hospital | Siram S.p.A. | 406 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 320 | Installation of solar thermal system at S.Eugenio Hospital | Siram S.p.A. | 20 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 321 | Energy efficiency interventions at the Santa Caterina della Rosa Polyclinic | Siram S.p.A. | 44 | 2021-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |

## Buildings

| ID | Action | Stakeholder | Direct impact (emission reduction) $tonCO_2eq/a$ | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 322 | Energy efficiency interventions at the CTO facility via Nemesio | Siram S.p.A. | 13 | 2021-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 323 | Installation of CTO photovoltaic system via Nemesio | Siram S.p.A. | 6 | 2024-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 329 | Energy efficiency improvement of residential buildings and RES installation | AzzeroCO2 S.r.l. | 14 | 2021-2023 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 330 | Energy efficiency improvement of residential buildings | AzzeroCO2 S.r.l. | - | 2021-2022 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 331 | Replacement of heating and cooling system | AzzeroCO2 S.r.l. | - | 2024 | Finance and fundings | Technology and infrastructures | Technology and infrastructures |
| 332 | Replacement of heating systems and photovoltaic installation | AzzeroCO2 S.r.l. | 10 | 2020-2023 | Finance and fundings | Technology and infrastructures | Technology and infrastructures |
| 333 | Residential energy efficiency with PV system and charging stations | AzzeroCO2 S.r.l. | - | 2022 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 334 | Replacement heat generator with condensing generator | AzzeroCO2 S.r.l. | - | 2022 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 335 | Preliminary analysis for a photovoltaic installation | AzzeroCO2 S.r.l. | 104 | 2020 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 336 | Construction of a photovoltaic system | AzzeroCO2 S.r.l. | 29 | 2022 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 337 | Residential redevelopment interventions | AzzeroCO2 S.r.l. | - | 2021 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 345 | Purchase of certified green energy | Banca Popolare Etica S. Coop. p.A. | 17 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 352 | Purchase of certified green energy | Autostrade per l'Italia S.p.A. | 875 | 2020-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 353 | Interventions to reduce consumption at the headquarters | Autostrade per l'Italia S.p.A. | - | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 354 | Rationalization of use of air conditioning systems | Autostrade per l'Italia S.p.A. | - | 2023-2030 | Governance and policy innovation | Learnings and capabilities | Democracy and participation |
| 370 | Purchase of certified green energy | Almaviva S.p.A. | 3,124 | 2024-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 372 | Purchase of certified green energy | Aeroporti di Roma S.p.A. | 2,196 | 2021-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 373 | Infrastructure renovation with sustainability protocols | Aeroporti di Roma S.p.A. | - | 2019-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 374 | Installation of RES systems | Aeroporti di Roma S.p.A. | 920 | 2021-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 375 | Energy efficiency of airports | Aeroporti di Roma S.p.A. | 173 | 2019-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 381 | Redevelopment of compressed air production plants | ATAC S.p.A. - Azienda per la mobilità | 35 | 2024-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 383 | Relamping 50,000 light points with LED technology | ATAC S.p.A. - Azienda per la mobilità | 2,378 | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 396 | Energy efficiency of processes and infrastructures | ACEA ATO 2 S.p.A. | anonymized | 2020-2028 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 397 | Purchase of green electricity | ACEA ATO 2 S.p.A. | anonymized | 2024-2030 | Governance and policy innovation | Technology and infrastructures | - |
| 398 | Energy efficiency interventions in water centres | ACEA ATO 2 S.p.A. | anonymized | 2023-2026 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 399 | Installation of photovoltaic panels for approximately 250 kWp at the C.I. Eur. | ACEA ATO 2 S.p.A. | anonymized | 2024-2028 | Finance and fundings | Governance and policy innovation | - |
| 406 | Centralization of purifiers | ACEA ATO 2 S.p.A. | | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 416 | RES "Le Vele" - Municipality I | Fondazione Banco dell'energia Ente Filantropico | 34 | 2022-2023 | Social innovation | Learnings and capabilities | Democracy and participation |
| 418 | Building energy efficiency interventions | BASF ITALIA S.p.A. | 366 | 2019-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 421 | Efficiency and optimization of the production process | BASF ITALIA S.p.A. | 397 | 2019-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 423 | Installation of photovoltaic system | Biscotti P.Gentilini S.r.l. | 165 | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 432 | Energy renovation interventions of Pavilion V | ASL Roma 1 | 85 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 433 | Photovoltaic system in pavilion V | ASL Roma 1 | 4 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 434 | Energy requalification interventions of Pavilion VII | ASL Roma 1 | 54 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 435 | Photovoltaic system in pavilion VII | ASL Roma 1 | 2 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 436 | Energy requalification interventions of Pavilion XXIII | ASL Roma 1 | 69 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 437 | Photovoltaic system in pavilion XXIII | ASL Roma 1 | 14 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 438 | Energy requalification interventions of Pavilion XXIV | ASL Roma 1 | 39 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 439 | Energy requalification interventions of Pavilion XXV | ASL Roma 1 | 44 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 440 | Energy requalification interventions of pavilion XXVIII | ASL Roma 1 | 174 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 441 | Photovoltaic systems in pavilion XXVIII | ASL Roma 1 | 2 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 442 | Energy requalification interventions of the XLI pavilion | ASL Roma 1 | 20 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 443 | Photovoltaic systems in Pavilion XLI with a power of 51.75 kWp | ASL Roma 1 | 18 | 2021-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 445 | Interventions to reduce electricity consumption in the Olympic Stadium, Foro Italico and Tennis Center | Sport e Salute S.p.A. | 5,319 | 2021-2026 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 448 | Energy efficiency of buildings | Banca d'Italia | 1,960 | 2019-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 449 | Purchase of green energy | Banca d'Italia | 10,025 | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 451 | Electrification of buildings (e.g. heat pumps replacing boilers) | Banca d'Italia | 0 | 2025-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 462 | Replacement of windows | FAO | 31 | 2019-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 463 | Replacement of curtain walls | FAO | 1 | 2019-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 464 | Adaptation of meeting room lighting | FAO | 24 | 2019-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 465 | Office lighting adaptation | FAO | 142 | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 466 | Purchase of certified green energy | FAO | - | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 469 | Reduction of energy consumption | FAO | 179 | 2019-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 474 | Replacement of HVAC systems | FAO | 18 | 2019-2024 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 475 | Replacement of steam boilers with condensing ones | FAO | - | 2024-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 496 | Purchase of certified green energy | NETGROUP S.p.a. | - | 2023-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 505 | Digital platforms for optimizing consumption | NETGROUP S.p.a. | - | 2024-2029 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 506 | Energy efficiency of the headquarters | ABB S.p.a. | 263 | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 508 | Energy diagnoses for the reduction of GHG emissions | ABB S.p.a. | - | 2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 511 | Electrification of company buildings | ABB S.p.a. | 338 | 2024-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 512 | Installation of photovoltaic systems | ABB S.p.a. | 22 | 2023-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 513 | Implementation of energy control system | ABB S.p.a. | 460 | 2022-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 516 | Installation of LED technology advertising spaces | Enel X Italia S.r.l. | - | 2021-2022 | Finance and fundings | Technology and infrastructures | - |
| 519 | Interventions on the electricity grid | Areti S.p.A. | - | 2024-2028 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |

**Buildings**

| ID | Action | Stakeholder | Direct impact (emission reduction) ton$CO_2$eq/a | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 523 | Headquarters energy efficiency measures | CNR - Consiglio Nazionale delle Ricerche | - | N.A. | Technology and infrastructures | Finance and fundings | Governance and policy innovation |

## Transport

| ID | Action | Stakeholder | Direct impact (emission reduction) tonCO$_2$eq/a | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 6 | SOSPAS project - Smart on Street Parking System | Department of Sustainable Mobility and Transport | - | 2024-2027 | Governance and policy innovation | Technology and infrastructures | Democracy and participation |
| 9 | SISVU project | Department of Sustainable Mobility and Transport | - | 2024-2027 | Governance and policy innovation | Finance and fundings | Social innovation |
| 32 | Electrification of light transport vehicles | Ama S.p.A. | - | 2024-2029 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 33 | Heavy vehicles powered by methane and biofuel | Ama S.p.A. | - | 2024-2029 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 73 | Interventions relating to company and employee transport | Intecs Solutions S.p.A. | - | 2024-2026 | Social innovation | Governance and policy innovation | Democracy and participation |
| 83 | Electric charging infrastructure | Cinecittà S.p.A. | - | 2023-2026 | Finance and fundings | Governance and policy innovation | Social innovation |
| 111 | Be Adaptive Program | MAIRE S.p.A. | - | 2018-2024 | Governance and policy innovation | Social innovation | Democracy and participation |
| 112 | Sustainable mobility - Shuttle bus | MAIRE S.p.A. | - | 2024-2030 | Governance and policy innovation | Social innovation | Democracy and participation |
| 121 | Carpooling and car sharing | Toyota Motor Italia S.p.A. | 11 | 2021-2024 | Governance and policy innovation | Social innovation | Democracy and participation |
| 135 | Columns and new green refueling stations | UrbanV S.p.A. | - | 2024-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 136 | Fleet electrification | UrbanV S.p.A. | - | 2024-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 142 | Vehicle fleet electrification | Hotel Eden S.r.l. | - | 2024-2025 | Finance and fundings | Democracy and participation | Governance and policy innovation |
| 152 | Electric vehicle charging stations | Elettronica S.p.A. | - | 2019-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 153 | Company fleet conversion | Elettronica S.p.A. | 19 | 2023-20325 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 154 | Appointment of Mobility Manager and adoption of smart working | Elettronica S.p.A. | - | 2023-2024 | Social innovation | Governance and policy innovation | Democracy and participation |
| 158 | Installation of charging stations | IKEA Italia S.r.l. | - | 2022-2030 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 159 | Electrification of the company fleet | IKEA Italia S.r.l. | - | 2022-2030 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 183 | Charging columns | Banca di Credito Cooperativo di Roma Soc. Coop. | - | 2023 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 190 | Sustainable mobility for home-work travel | Angelini Real Estate S.p.A. | 312 | 2023-2025 | Governance and policy innovation | Social innovation | Democracy and participation |
| 195 | Sustainable mobility and electrification | Università degli Studi di Roma Tor Vergata | 25 | 2021-2024 | Finance and fundings | Democracy and participation | Governance and policy innovation |
| 218 | New charging stations | Enel X Way Italia S.r.l. | - | 2021-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 219 | Management of traffic control systems | Edison Next Government S.r.l. | 105,000 | 2019-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 220 | Traffic control management and modernization of traffic light systems completed | Edison Next Government S.r.l. | 253 | 2021-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 234 | Smart Working initiatives | Università degli Studi Roma Tre | 169 | 2006-2030 | Social innovation | Governance and policy innovation | Democracy and participation |
| 239 | Installation of charging stations for electric vehicles | Leonardo S.p.A. | - | 2019-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 240 | Supply of IT systems for monitoring and improving the efficiency of the LPT | Leonardo S.p.A. | - | 2020-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 241 | Electrification of the vehicle fleet and use of innovative fuels | Poste Italiane S.p.A. | 843 | 2019-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 247 | Vehicle fleet electrification | Wind Tre S.p.A. | - | 2021-2025 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 248 | Smart Working Agreement | Wind Tre S.p.A. | 327 | 2020 | Governance and policy innovation | Social innovation | Democracy and participation |
| 279 | Installation of charging stations at city offices | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2024-2027 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 280 | Company car fleet conversion | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2024-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 282 | Implementation of cycle path network sections | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2024-2028 | Finance and fundings | Governance and policy innovation | Social innovation |
| 283 | Company shuttle | Istituto Poligrafico e Zecca dello Stato S.p.A. | - | 2022-2030 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 289 | levelopment of traffic light structures to improve public, cycle and pedestrian transport in Via XX Setterr | Envision S.r.l. | - | 2021 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 291 | Smart working | INPS - Istituto Nazionale della Previdenza Sociale | 1,345 | 2019-2030 | Governance and policy innovation | Social innovation | Democracy and participation |
| 300 | Corporate smart working plan | Servier Italia S.p.A. | 142 | 2018-2030 | Social innovation | Governance and policy innovation | Democracy and participation |
| 302 | Enhancement of public charging infrastructure | Servier Italia S.p.A. | - | 2023-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 303 | Replacement of the vehicle fleet with electric/hybrid cars | Servier Italia S.p.A. | - | 2024-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 314 | Electric vehicle rental | NH Collection Hotels | - | 2024-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 328 | Incentives for smart working | AzzeroCO2 S.r.l. | - | 2021-2030 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 338 | Distribution of biofuel at filling stations | ENI S.p.A. | - | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 339 | New charging stations | ENI S.p.A. | - | 2019-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 340 | Car sharing electrification | ENI S.p.A. | - | 2021-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 347 | Incentives for smart working | Banca Popolare Etica S. Coop. p.A. | 10 | 2022-2030 | Governance and policy innovation | Democracy and participation | Learnings and capabilities |
| 349 | Charging stations at the headquarters | Autostrade per l'Italia S.p.A. | - | 2023-2024 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 350 | Electrification of rental vehicle fleet | Autostrade per l'Italia S.p.A. | - | 2024-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 351 | Efficiency improvement of the owned vehicle fleet | Autostrade per l'Italia S.p.A. | - | 2021-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 355 | Smart working | Autostrade per l'Italia S.p.A. | 550 | 2020-2030 | Social innovation | Democracy and participation | Governance and policy innovation |
| 364 | Incentives for hybrid smart working | Almaviva S.p.A. | 4,073 | 2021-2024 | Governance and policy innovation | Democracy and participation | Technology and infrastructures |
| 366 | Company fleet conversion | Almaviva S.p.A. | - | 2023-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 376 | Installation of charging points for passengers | Aeroporti di Roma S.p.A. | - | 2021-2030 | Finance and fundings | Technology and infrastructures | Democracy and participation |
| 378 | Vehicle fleet electrification | Aeroporti di Roma S.p.A. | - | 2024-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 379 | Incentives for smart working | Aeroporti di Roma S.p.A. | 21 | 2020-2030 | Governance and policy innovation | Learnings and capabilities | Social innovation |
| 388 | Electrification of the vehicle fleet and new infrastructure for charging stations | ATAC S.p.A. - Azienda per la mobilità | 33,000 | 2024-2026 | Finance and fundings | Technology and infrastructures | Democracy and participation |
| 389 | Renewal of 332 methane buses with progressive dismantling of diesel vehicles | ATAC S.p.A. - Azienda per la mobilità | - | 2024-2026 | Finance and fundings | Technology and infrastructures | Democracy and participation |
| 390 | Purchase of 110 18-metre hybrid buses and progressive dismantle of diesel vehicles | ATAC S.p.A. - Azienda per la mobilità | - | 2024-2025 | Finance and fundings | Technology and infrastructures | Democracy and participation |
| 420 | Installation of charging stations | BASF ITALIA S.p.A. | - | 2020-2030 | Governance and policy innovation | Technology and infrastructures | Governance and policy innovation |
| 454 | Development of efficient solutions for private transport within the border | Banca d'Italia | - | 2023-2025 | Governance and policy innovation | Learnings and capabilities | Social innovation |
| 455 | Renewal of vehicle fleet | Banca d'Italia | - | 2020-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 467 | Charging columns | FAO | - | 2025 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 481 | Charging column infrastructure | Centro Agroalimentare Roma S. Coop. p.A. | - | 2023-2024 | Technology and infrastructures | Governance and policy innovation | - |
| 498 | Vehicle fleet electrification | NETGROUP S.p.a. | - | 2021-2027 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| 509 | New charging stations at the headquarters | ABB S.p.a. | 192 | 2023-2024 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| 515 | Electrification of public transport dedicated to disabled students | Enel X Italia S.r.l. | 18 | 2022-2030 | Finance and fundings | Governance and policy innovation | Democracy and participation |

**IPPU**

| ID | Action | Stakeholder | Direct impact (emission reduction) ton$CO_2$eq/a | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 164 | Refrigerant gas replacements | IKEA Italia S.r.l. | 211 | 2018-2028 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 426 | Monitoring of emissions from industrial processes | Biscotti P.Gentilini S.r.l. | - | 2019-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |

**AFOLU**

| ID | Action | Stakeholder | Direct impact (emission reduction) $tonCO_2eq/a$ | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 18 | Redevelopment of green areas at the Santa Maria della Pietà Lombroso area | epartment of Infrastructure Development and Urban Maintenanc | - | 2019-2025 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 69 | Edible Academy - New hydroponic removable greenhouse | Orto Botanico di Roma/Polo Museale | - | 2024-2025 | Social innovation | Learnings and capabilities | Democracy and participation |
| 70 | Project "The Tiny Forest" | Orto Botanico di Roma/Polo Museale | 11 | 2024 | Technology and infrastructures | Finance and fundings | Social innovation |
| 99 | Bee forest | Greenpeace Onlus | - | 2020-2024 | Democracy and participation | Social innovation | Learnings and capabilities |
| 107 | Urban oasis Castel Romano | WWF Italia - ETS | - | 2023-2024 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 172 | Urban forestry | Terna S.p.A. | 3 | 2022-2023 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 187 | Orchard planting | Banca di Credito Cooperativo di Roma Soc. Coop. | 1 | 2023 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 192 | Planting project | Università degli Studi di Roma Tor Vergata | - | 2022-2023 | Democracy and participation | Governance and policy innovation | Finance and fundings |
| 252 | Compensatory planting | Triumph Italy S.r.l. | 87 | 2021 | Governance and policy innovation | Finance and fundings | Democracy and participation |
| 308 | Planting 25 trees at the Val Cannuta park | Servier Italia S.p.A. | 0 | 2023-2024 | Governance and policy innovation | Finance and fundings | Social innovation |
| 326 | Afforestation of some urban areas and city parks | AzzeroCO2 S.r.l. | 50 | 2019-2024 | Finance and fundings | Governance and policy innovation | Learnings and capabilities |
| 327 | Solidarity fruit and vegetable garden | AzzeroCO2 S.r.l. | 2 | 2022-2024 | Social innovation | Learnings and capabilities | Democracy and participation |
| 460 | Urban reforestation | Banca d'Italia | 30 | 2023 | Governance and policy innovation | Social innovation | Democracy and participation |
| 470 | Urban reforestation | FAO | - | 2025-2030 | Social innovation | Technology and infrastructures | Finance and fundings |
| 471 | Development of the green areas close to the FAO headquarters | FAO | 15 | 2021-2022 | Social innovation | Technology and infrastructures | Finance and fundings |
| 487 | Urban microforests | Department of Urban Planning and Implementation | 2 | 2023-2024 | Finance and fundings | Governance and policy innovation | Democracy and participation |

## Waste

| ID | Action | Stakeholder | Direct impact (emission reduction) $tonCO_2eq/a$ | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 30 | Casal Selce biogas to biomethane upgrading station | Ama S.p.A. | 6,500 | 2024-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 31 | Cesano biogas to biomethane upgrading station | Ama S.p.A. | 6,500 | 2024-2026 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 68 | Efficient waste treatment systems | Orto Botanico di Roma/Polo Museale | 0 | 2024-2025 | Technology and infrastructures | Finance and fundings | Social innovation |
| 86 | Smoking point installation | Cinecittà S.p.A. | 0 | 2023-2025 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| 143 | Adoption of sustainable practices | Hotel Eden S.r.l. | - | 2024 | Governance and policy innovation | Social innovation | Democracy and participation |
| 165 | Circular projects | IKEA Italia S.r.l. | 6 | 2019-2024 | Social innovation | Learnings and capabilities | Democracy and participation |
| 188 | Digitalization of banking services | Banca di Credito Cooperativo di Roma Soc. Coop. | - | 2019-2024 | Finance and fundings | Governance and policy innovation | Learnings and capabilities |
| 233 | Roma Tre project against plastic | Università degli Studi Roma Tre | 60 | 2019-2030 | Social innovation | Governance and policy innovation | Democracy and participation |
| 371 | Reuse water | Aeroporti di Roma S.p.A. | - | 2022-2025 | Technology and infrastructures | Finance and fundings | Democracy and participation |
| 377 | Digitalization of internal processes and company procedures | Aeroporti di Roma S.p.A. | - | 2023-2025 | Finance and fundings | Technology and infrastructures | Social innovation |
| 393 | Digitization of travel documents | ATAC S.p.A. - Azienda per la mobilità | 16 | 2019-2025 | Technology and infrastructures | Finance and fundings | Democracy and participation |
| 401 | Sludge Plan: rationalization of the entire sector to achieve a 40% reduction in sludge by 2026 | ACEA ATO 2 S.p.A. | - | 2020-2024 | Governance and policy innovation | Finance and fundings | - |
| 403 | Biomethane production from wastewater treatment | ACEA ATO 2 S.p.A. | Anonimized | 2024-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 404 | Recovery of material from wastewater treatment | ACEA ATO 2 S.p.A. | - | 2020-2024 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 405 | Reuse of non-potable water as process water within purification plants | ACEA ATO 2 S.p.A. | - | 2020-2028 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 407 | Sewerage districting | ACEA ATO 2 S.p.A. | - | 2024-2028 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| 408 | Reduction of losses on distribution networks | ACEA ATO 2 S.p.A. | - | 2020-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| 424 | Recycling and recovery practices | Biscotti P.Gentilini S.r.l. | - | 2025-2028 | Democracy and participation | Governance and policy innovation | Finance and fundings |
| 425 | Elimination of the internal purifier and sewer connection to the ACEA network | Biscotti P.Gentilini S.r.l. | - | 2024-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| 447 | Adaptation works at the Malagrotta landfill | Department of Environmental Protection | - | 2024-2026 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |

## Cross Cutting

| ID | Action | Stakeholder | Direct impact (emission reduction) ton$CO_2$eq/a | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| 520 | Interventions to encourage the digitalisation of services | Areti S.p.A. | - | 2024-2028 | Finance and fundings | Governance and policy innovation | Democracy and participation |

ROMA

2030 Climate Neutrality Action Plan

NET ZERO CITIES
EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

# Annex 3

*B-2.2b: Detail of under study actions*

| Sector | ID | Action | Stakeholder | Direct impact (emission reduction) tonCO$_2$eq/a | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|---|
| Buildings | 5 | PPP for integrated Energy-Management-Maintenance and redevelopment service | Department of Infrastructure Development and Urban Maintenance | 230 | 2024-2026 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| Buildings | 11 | Second phase CIS - Institutional development contract | Department of Infrastructure Development and Urban Maintenance | 4,481 | 2025-2027 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 43 | Revamping solar thermal fields for domestic hot water production | Ama S.p.A. | - | 2026-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 44 | Repowering solar fields for DHW production | Ama S.p.A. | - | 2024-2027 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 47 | New photovoltaic fields on buildings | Ama S.p.A. | - | 2025-2028 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 48 | Caritas Rome photovoltaic installation | Ama S.p.A. | - | 2025-2028 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Transport | 50 | Installation of charging stations | Ama S.p.A. | - | 2025-2028 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Transport | 84 | Fleet electrification | Cinecittà S.p.A. | 61 | 2019-2026 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 94 | Future installation of photovoltaic systems ready to use | CER Confartigianato Lazio | 5,112 | 2025-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 110 | Energy efficiency improvement of the Group's headquarters to host the Green Innovation District | MAIRE S.p.A. | - | 2024-2029 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Waste | 113 | Hydrogen Valley | MAIRE S.p.A. | - | 2024-2027 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Buildings | 122 | Installation of new photovoltaic system on the Toyota Motor City building | Toyota Motor Italia S.p.A. | 20 | 2025-2027 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Transport | 161 | Electrification of the vehicle fleet for last mile deliveries | IKEA Italia S.r.l. | - | 2025-2026 | Social innovation | Governance and policy innovation | Democracy and participation |
| Buildings | 167 | Casal Monastero Consortium | Terna S.p.A. | - | 2027-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| Buildings | 168 | Undergrounding of the Aurelia-Flaminia line | Terna S.p.A. | - | 2026-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| Buildings | 169 | Request for modernization of the Serenissima Park line | Terna S.p.A. | - | 2026-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| Buildings | 171 | Torsani interventions 4 | Terna S.p.A. | - | 2026-2030 | Governance and policy innovation | Finance and fundings | Technology and infrastructures |
| Buildings | 217 | Redevelopment of public lighting | Enel Sole S.r.l. | - | 2026-2030 | Technology and infrastructures | Governance and policy innovation | Finance and fundings |
| Buildings | 238 | Replacement of electric motors | Leonardo S.p.A. | 161 | 2024-2028 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 276 | Installation of self-consumption photovoltaic systems on premises | Istituto Poligrafico e Zecca dello Stato S.p.A. | 556 | 2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Buildings | 324 | Proposal for energy efficiency interventions at properties in Rome Capital | Siram S.p.A. | 51 | 2026-2028 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Buildings | 325 | Installation of photovoltaic and storage systems at Rome Capital properties | Siram S.p.A. | 376 | 2026-2028 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Buildings | 358 | Ground-mounted photovoltaic systems | Autostrade per l'Italia S.p.A. | 1,775 | 2024-2026 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 380 | Photovoltaic systems on metro-railway workshops and car parks | ATAC S.p.A. - Azienda per la mobilità | 5,325 | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Buildings | 382 | Installation of Power Quality systems on 10 medium and low voltage PODs | ATAC S.p.A. - Azienda per la mobilità | 176 | 2025-2027 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Transport | 391 | Purchase of 41 12-metre hybrid buses and progressive dismantle of diesel vehicles | ATAC S.p.A. - Azienda per la mobilità | - | 2025 | Finance and fundings | Technology and infrastructures | Democracy and participation |
| Buildings | 417 | RES project to be started | Fondazione Banco dell'energia Ente Filantropico | 26 | 2025 | Social innovation | Learnings and capabilities | Democracy and participation |
| Waste | 427 | Use of recycled materials for the packaging of products | Biscotti P.Gentilini S.r.l. | - | 2025-2030 | Governance and policy innovation | Technology and infrastructures | Learnings and capabilities |
| Buildings | 428 | Modernization, expansion and energy management interventions of the General Command of the Port Authorities | Agenzia del Demanio | 2,008 | 2024-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 429 | Intervention relating to the demolition and reconstruction of the building located in Viale Boston n. 25 | Agenzia del Demanio | 1,342 | 2024-2028 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 430 | Renovation of the state property complex located in Viale Trastevere 185-189 | Agenzia del Demanio | 1,319 | 2024-2028 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 431 | Renovation of the "8°Cerimant barracks", Tor Sapienza | Agenzia del Demanio | 239 | 2024-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | 450 | RES installation | Banca d'Italia | 204 | 2019-2023 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| Buildings | 452 | Construction of NZEB building | Banca d'Italia | - | 2024-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| Buildings | 468 | Photovoltaic system | FAO | 16 | 2025-2030 | Governance and policy innovation | Technology and infrastructures | Finance and fundings |
| Buildings | 480 | Energy efficiency of the existing site | Centro Agroalimentare Roma S. Coop. p.A. | - | 2026-2028 | Finance and fundings | Governance and policy innovation | - |
| AFOLU | 482 | Urban reforestation in non-functional areas | Rete Ferroviaria Italiana S.p.A. | - | 2025-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 492 | Rewarding criteria for planting outdoor areas | Ama S.p.A. | - | 2026-2029 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | 521 | Future strategy for interventions on the electricity grid | Areti S.p.A. | - | 2029-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Cross Cutting | 522 | Future strategy of interventions for the digitalisation of services | Areti S.p.A. | - | 2029-2030 | Finance and fundings | Governance and policy innovation | Democracy and participation |

ROMA

2030 Climate Neutrality Action Plan

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

# Annex 4

*B-2.2c: Detail of behavioral and guideline actions*

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 3 | Executive resolution 491/2024: 8 operational interventions to encourage alternative mobility and dissemination of good practices among citizens | Department of Sustainable Mobility and Transport | 1. Municipal incentive for the renewal of commercial vehicles; 2.LPT discount reporting for Mobility Manager network; 3. Incentive distribution platform; 4. Communication campaigns to citizens; 5.Incentive for the use of sustainable mobility platforms; 6. Introduction of the MOVE IN system; 7. MIT system for the operation of environmental gates and cooperation with the operations center; 8.SOSPASS project; |
| 4 | Environmental ZTL, Pollution Charge and Congestion Charge | Department of Sustainable Mobility and Transport | Integration of the electronic gate system for the automatic control of access to the ZTL, implementation of the Green Belt and creation of the Central Electronic System (hardware and software) useful for the management of the Congestion Charge of Rome Capital |
| 7 | UPPER project | Department of Sustainable Mobility and Transport | Project which includes nine measures which concern, among others: measures to reduce private traffic such as the green belt; the inclusion of new mobility services in multimodal interchange nodes; use of advanced technologies such as MaaS to increase the efficiency and reliability of public transport; redesign of urban space, new tram lines and, in general, strengthening of public transport. |
| 8 | User Project CHI | Department of Sustainable Mobility and Transport | Design of electric charging networks based on user needs; distribution of a framework and an interoperability platform to improve the use of charging infrastructures also through the integration of smart networks; development of marketable, innovative and highly cost-effective charging systems; co-design and demonstration of new and sustainable business and market models; make legal and regulatory recommendations for massive deployment of electric vehicles |
| 34 | Awareness campaign and other behavioral measures | Ama S.p.A. | Awareness campaign on waste collection as an initiative to promote sustainable behavior and improve the waste cycle |
| 35 | Digital Transformation Program | Ama S.p.A. | The objective is to improve company production processes using IT technologies, including a CRM system and the development of a digital twin in waste sector |
| 36 | Updating and redevelopment of institute and collateral buildings | Ama S.p.A. | The buildings are intended for both industrial and service activities; the objective is redevelopment to reduce climate-changing emissions |
| 37 | Efficiency of energy consuption though management systems | Ama S.p.A. | Detection systems for turning lights on/off and heat/cooling emission; change in the equipment through energy carriers with lower consumption elements (e.g. replacement of illuminated devices with LED devices, commissioning of heat pump boilers, power factor correction, etc.); passive safeguards (e.g. insulation, shading aids, etc.); training for users about the ecological footprint of the buildings and equipment in use. |
| 38 | Digital platform for analyzing and reporting energy and water consumption | Ama S.p.A. | Management of electricity, gas and water users on more than 500 delivery points managed by AMA |
| 39 | Measurement of electricity consumption | Ama S.p.A. | Monitoring of consumption activities of civil and industrial electricity service meters; 20 electricity interception and measurement points are currently installed |
| 40 | ISO 50001 energy management certification | Ama S.p.A. | Monitoring and verification of the use of electricity through specific procedures according to the certification |
| 41 | Energy diagnosis update | Ama S.p.A. | Drafting of the Energy Diagnosis every 4 years, according to ENEA methodology |
| 42 | Awareness campaign on the ecological footprint | Ama S.p.A. | Incentives for the purchase of plants and support elements for the cultivation of indoor plants |
| 64 | University training course | Università degli Studi "La Sapienza" | Training course open to all students to introduce the concept of cultural, ecological and digital transition linked to education, individual and collective behavior. The sending of periodical newletters is also planned to raise awareness on the consumption reduction |
| 65 | Other behavioral measures to support the Energy Implementation Plan | Università degli Studi "La Sapienza" | Sending circulars in application of the consumption reduction as required by the European directive; drafting of the new PAE for the four-year period 2022-2025 and of the new Building Regulations for energy renovation |
| 66 | Energy diagnoses | Università degli Studi "La Sapienza" | Studies on 4 university buildings for planned redevelopment interventions |
| 74 | Training and awareness | Intecs Solutions S.p.A. | Training for employees on the efficient use of transport |
| 85 | Mobility Manager, smart working, use of TPL | Cinecittà S.p.A. | Staff for PSCL drafting; Definition of smart working agreements; Definition of incentives for employees to solicit use of TPL |
| 87 | Process optimization to reduce GHG release | Cinecittà S.p.A. | Creation of a new permanent set and definition of guidelines for the creation of reusable modular scenography, use of low impact and/or certified materials, green procurement |
| 88 | Online and on-site communication | Cinecittà S.p.A. | The company's manifesto of values, the Green standards and the rules for the responsible use of spaces have been drawn up |
| 89 | Supply of drinking water from the water network | Cinecittà S.p.A. | Distribution of water bottles to all employees and installation of 60 dispensers to avoid plastic water |
| 90 | Low impact and carbon neutral events | Cinecittà S.p.A. | Creation of the first reduced impact and carbon neutral edition of the Rome Videogamelab festival. |
| 91 | Upcycling projects with a social vocation | Cinecittà S.p.A. | Recovery and reuse of materials: 1) Project with MALEFATTE: the PVC advertising material used for the Rome Videogamelab 2022 event and for the institutional campaign of the same year was recovered and reused for the creation of the 2022 Christmas gifts; 2) Project with FODY: the sheets used during the David di Donatello 2024 were recovered and donated to Fody, a benefit society and innovative start-up with a social vocation. |
| 92 | Open space design | Cinecittà S.p.A. | Guidelines for the design of Cinecittà's open spaces to reduce its commitment to climate change and at the same time make it environmentally, economically and socially resilient to the impacts of the climate crisis |
| 95 | Energy diagnoses and energy management systems; introduction of digital platforms | CER Confartigianato Lazio | Management of REC through strategic consumption optimization plans, with digital platforms and ad hoc energy diagnoses |
| 96 | Training path | CER Confartigianato Lazio | Training aimed at professional technical employees. The cost refers to the single course provided |
| 97 | Consultancy for obtaining incentives for CER | CER Confartigianato Lazio | Expert technical office to support REC member companies. |
| 98 | Renewable energy communities | CER Confartigianato Lazio | Support for the creation and possible participation in Renewable Energy Communities |
| 100 | Initiatives to encourage the decarbonisation of buildings | Kyoto Club | Raising awareness of the sector and citizens towards the decarbonisation of residential assets |
| 101 | Public initiatives for policies and interventions to improve the efficiency of sustainable mobility | Kyoto Club | Raising awareness of the sector and citizens on the use of LPT and sustainable mobility |
| 105 | Earth Hour | WWF Italia - ETS | Initiative that turns off the lights of institutional buildings for at least an hour as a symbol of awareness. The cost is annual. |

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 106 | Urban Nature | WWF Italia - ETS | Event in Rome and various collateral initiatives and workshops, throughout Italy, to rediscover urban biodiversity and stimulate a new vision of urban spaces, giving value to nature. |
| 108 | Nature classrooms | WWF Italia - ETS | The project, in collaboration with Procter&Gamble, involves the creation of various micro-habitats, such as ponds, hedges, butterfly gardens and educational gardens in Italian schools. At the moment there are 6 Nature Classrooms in Rome |
| 114 | ESG Scoring | MAIRE S.p.A. | Screening of company suppliers to qualify the level of sustainability of their services and products |
| 115 | Stakeholder engagement & advocacy | MAIRE S.p.A. | Training aimed at employees and stakeholders to promote the culture of sustainability |
| 116 | Adoption of TCFD recommendations and related reporting | MAIRE S.p.A. | Assessment of risks and opportunities linked to climate change, identification and management of physical risks linked to the energy transition, valorisation of opportunities linked to the emergence of new markets |
| 123 | European EFUA project | Risorse per Roma S.p.A. | Definition of Research & Innovation practices and programs in the agricultural and food sector and in the urban bioeconomy Establishment of the European Forum on Urban Agriculture, to ensure the involvement of interested parties |
| 124 | European FUSILLI project | Risorse per Roma S.p.A. | Project to support the transformation of the urban food system through the implementation of innovative participatory laboratories, workshops and debates; increase in territorial partnerships |
| 125 | European GenerACTOR project | Risorse per Roma S.p.A. | Creation of urban and productive vegetable gardens in the city neighborhoods, strengthening local communities and strategies for the sustainable urban transformation of green areas |
| 126 | European IURC project | Risorse per Roma S.p.A. | Project which aims to strengthen the capacities of local communities to co-create sustainable urban transformation strategies, develop a participatory model for the design and implementation of urban community gardens and public green spaces, promote a networking strategy at local and international level, integrating urban communities in sustainable development initiatives |
| 127 | European URBACT project | Risorse per Roma S.p.A. | Project to enhance public green areas and common goods as urban spaces of resilience, inclusion and social aggregation, to the benefit of urban collective identity |
| 132 | Global Estate Sustainability Benchmark | UniCredit S.p.A. | Scoring of the corporate real estate portfolio based on sustainability criteria |
| 137 | Training and awareness in the field of sustainability | UrbanV S.p.A. | Training and information activities on the services offered |
| 139 | Internal thematic training | Sensoworks S.r.l. | Monthly meeting with sustainability-themed lessons. Each lesson will have a specific topic, especially from an environmental impact perspective, aimed at raising employee awareness. |
| 141 | Consumption monitoring | Hotel Eden S.r.l. | Implementation of a platform for monitoring electricity consumption |
| 144 | Reduction of water consumption | Hotel Eden S.r.l. | The building is under audit to evaluate any areas of implementation and reduction of water consumption |
| 145 | Sustainability awareness events | Hotel Eden S.r.l. | Training sessions for employees in the field of ecological transition and climate neutrality |
| 146 | Waste collection monitoring | Hotel Eden S.r.l. | Waste collection system using smart containers, monitoring of waste generated to identify any critical issues |
| 147 | Use of environmental criteria in the choice of partners and suppliers | Hotel Eden S.r.l. | Evaluation of stakeholders active in the supply chain through an internal questionnaire |
| 150 | Environmental management system and environmental certification | Elettronica S.p.A. | Implementation of an Environmental Management System and Certification of compliance with UNI EN ISO 14001 and EMAS |
| 151 | Training of company staff | Elettronica S.p.A. | Transfer basic information on the principles of environmental sustainability and the operational methods for managing environmental aspects related to work activities to the company population. |
| 157 | Concrete actions for sustainability at home | IKEA Italia S.r.l. | Project which aims to show in a simple and immediate way the correlation between economic convenience and environmental protection, in relation to daily habits and actions that can be adopted in private homes. |
| 160 | Mobility bonus for co-workers | IKEA Italia S.r.l. | Provision of a direct economic contribution to employees for the purchase of subscriptions to local public transport services and sharing of electric cars or scooters; contribution can also be used for the purchase of electric or methane means of transport, including bicycles and scooters. |
| 162 | Responsible waste management | IKEA Italia S.r.l. | Recycling of 94% of waste at the Anagnina site and 96% at the Porta Roma site. From 2020 recycling of the entire organic fraction for biogas production |
| 163 | IWAY project | IKEA Italia S.r.l. | Guidelines for suppliers in four main areas: child labour, co-workers, environment and animal welfare. |
| 173 | Contest among Unindustria employees for the sustainability of the offices; Information campaign relating to RES and widespread self-consumption | Unindustria | Contest among Unindustria employees for the sustainability of the offices. Information campaign relating to RES and widespread self-consumption |
| 174 | Working group on the topic of water with associated companies | Unindustria | Double awareness raising action, on the one hand towards the institutions, on the other towards the associated companies. The objective remains to collaborate in order to identify solutions to improve the accessibility of water, to make its use more efficient and, in general, to implement a more sustainable approach to water resources. |
| 175 | Circular economy projects | Unindustria | Studies and projects carried out by Unindustria on behalf of its members: sustainable production and solutions for the future; the green challenge; from energy to new materials |
| 176 | Sustainability showcase project and ESG handbook | Unindustria | The objective is to develop projects through which, together with businesses, a new model of sustainable development can be spread across the territory |
| 181 | Energy diagnosis of office buildings | Banca di Credito Cooperativo di Roma Soc. Coop. | Carrying out energy audits on the management buildings located in Viale Oceano Indiano 13 C every four years |
| 182 | Training and awareness | Banca di Credito Cooperativo di Roma Soc. Coop. | Initiatives aimed at internal resources for a more rational and responsible use of energy (video pills Agenda 2030 and Sustainable Building Guidelines) |
| 184 | Corporate carpooling | Banca di Credito Cooperativo di Roma Soc. Coop. | Creation of an internal app with incentives and cashback for members |
| 185 | Home-work travel questionnaire | Banca di Credito Cooperativo di Roma Soc. Coop. | Annual report drawn up by the company Mobility Manager based on a questionnaire completed by employees |
| 186 | Maintenance of ecological area for separate waste collection | Banca di Credito Cooperativo di Roma Soc. Coop. | Maintenance of the ecological area created at the headquarters in via Oceano Indiano, to improve the separate waste collection process |
| 191 | Training projects | Università degli Studi di Roma Tor Vergata | Drop Project; Chair Project; Sustainability Report Pillars Project; Taxation and public finance in the transition towards sustainable economic development; SUSA project; From training to action: innovative civic education project for sustainable development; GRINS project; Seminars "Towards the 2030 Agenda" in collaboration with CMRC; CSR Salon |
| 196 | Research on new intermobility solutions | Università degli Studi di Roma Tor Vergata | The research intends to carry out a laboratory experiment that investigates individuals' choices regarding issues relating to mobility |

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 197 | Plastic Credits program development | Università degli Studi di Roma Tor Vergata | Certification system for environmental impact reductions (e.g. higher percentage of recycled material or lower use of plastic in packaging) |
| 198 | New Economy Laboratories | Università degli Studi di Roma Tor Vergata | Laboratories and workshops that aim to stimulate social innovation and self-entrepreneurship from a sustainability perspective, in line with the UN Sustainable Development Goals (Agenda 2030). |
| 199 | Hackathon | Università degli Studi di Roma Tor Vergata | "HackaTor" initiative to seek innovative ideas on sustainability in the Lazio Region. This is an initiative open to undergraduates and graduates of the University of Rome Tor Vergata and dedicated to planning a smart and sustainable future. |
| 200 | Drafting of PFTE project guidelines | Università degli Studi di Roma Tor Vergata | Evaluation of sustainability, economic-financial and urban planning aspects by integrating its own research models with European Commission models of projects being evaluated |
| 201 | Collaboration with CMRC on questionnaires and thematic tables for the improvement of services to citizens | Università degli Studi di Roma Tor Vergata | Questionnaire useful for: contributing to mapping the interests and awareness of young people with the aim of integrating their vision into the strategic sustainable development planning documents (PSM and AmSS) of the CMRC; collect memberships for the Working Groups with the CMRC (details sheet 26); identify youth organizations operating in the CMRC territory engaged in social, environmental, cultural or digitalisation issues. |
| 221 | Redevelopment of municipal schools from a REC and PED perspective | ENEA | Enea makes its know-how available with a view to developing non-invasive REC and PED in the main buildings of the historic center of Rome |
| 222 | Analysis of the state of the electricity and railway network for potential implementations | ENEA | Vulnerability and risk analysis for two critical reference infrastructures such as the electricity grid and the railway network. |
| 223 | Public lighting | ENEA | Study on the digitalisation of public lighting and performance monitoring via the PELL platform |
| 224 | TLP electrification on rubber | ENEA | Analysis of the public road service offer in the municipal area, in order to identify the most suitable lines for the use of full-electric battery-powered vehicles |
| 225 | Exploitation of heat from low enthalpy geothermal sources | ENEA | Studies for the identification of the area in which to build a demonstrator to use renewable thermal energy from geothermal sources for the heating and cooling of public buildings |
| 226 | Feasibility study to create a solar thermal system | ENEA | Feasibility study in order to build a 1.2 MW solar thermal power plant |
| 227 | Energy efficiency strategy for buildings | ENEA | Analysis strategy of the real estate assets of the municipality of Rome, in order to achieve the CCC objectives |
| 228 | One stop shop | ENEA | Information desk dedicated to bodies, administrators, freelancers and private citizens to support efficiency actions in public and private buildings |
| 229 | Study on the redevelopment of ERP buildings | ENEA | Support for building renovation, dedicated to the recovery of information relating not only to the energy aspects of the building/plant system but also social ones, to be used from an integrated perspective to facilitate participatory planning of the energy requalification intervention. |
| 230 | Information and cultural change of users | ENEA | Support for the creation of an information campaign for citizens for the reduction of emissions linked to heating and energy saving systems |
| 251 | Cleaning of Lazio beaches | Triumph Italy S.r.l. | The action contributed to create cleaner and safer urban environments, improving the quality of life of residents and protecting coastal ecosystems, in line with the aims of making cities inclusive, safe, resilient and sustainable |
| 253 | ISO 20121 certification | Triumph Italy S.r.l. | Publication of a handbook of guidelines to ensure that all guidance provided is applied to all events |
| 254 | Indirect corporate mobility analysis and mapping of employee trends over the years | Triumph Italy S.r.l. | Since 2020, mapping of company mobility and habits trends via internal survey |
| 255 | Promotes the implementation of the UN's ten-year program for a sustainable consumption and production model | Triumph Italy S.r.l. | In 2022, the procurement office was established to follow up on the commitment made following the ISO certification: the main actions currently carried out are on separate waste collection and reduction of printed paper |
| 256 | Tutor training for home energy | Rete Assist - ETS | Training of Domestic Energy Tutors (TED), with the prospective of including these figures into physical or virtual energy desks |
| 257 | PEnTrEn project | Rete Assist - ETS | Project to reduce energy poverty with a holistic and shared approach, to promote a fair and equitable energy transition in the context of the 2030 Agenda |
| 258 | Project dedicated to schools to rediscover the richness of the Tiber river | Fondazione Marevivo - ETS | The project, which is aimed at secondary schools, aims to raise awareness of the biodiversity of the river, its potential and the risks linked to lack of care |
| 259 | Environmental education project | Fondazione Marevivo - ETS | Beach cleaning activities, waste recovery and collection, data monitoring along the coasts of the Lazio coast |
| 260 | Plastic Pirates Project | Fondazione Marevivo - ETS | Study on the state of health of rivers, in particular to monitor the presence of plastic, involving young people from first and second level secondary schools |
| 261 | Cleaning activities of the river banks and bottoms | Fondazione Marevivo - ETS | Removal of waste and cleaning of the banks of the areas within the city of Rome and installation of waste catcher barriers |
| 262 | Promotion of the law for the protection of the sea | Fondazione Marevivo - ETS | Advocacy activities and information campaigns to draw attention to the issue of marine pollution |
| 263 | One Planet, Once Ocean, One Health communication campaign | Fondazione Marevivo - ETS | Draw the attention of public opinion, institutions and all interested stakeholders to the urgency, which cannot be postponed, of protecting the biodiversity heritage of the Sea and Oceans |
| 264 | Construction of the new energy independent Marevivo barge | Fondazione Marevivo - ETS | The boat will be the headquarters of the Association, and will contain spaces for meetings and conferences |
| 271 | Drafting energy diagnoses for various buildings in the city | Istituto Poligrafico e Zecca dello Stato S.p.A. | Four locations are subject to energy audits from 2023 every 4 years |
| 275 | Staff awareness campaign and digitalisation of internal activities | Istituto Poligrafico e Zecca dello Stato S.p.A. | Raising awareness among staff for greater awareness of energy saving through dematerialisation/digitalisation of internal processes |
| 278 | Corporate car pooling/car sharing program | Istituto Poligrafico e Zecca dello Stato S.p.A. | Incentives towards more sustainable travel methods, creating virtuous competition among employees |
| 281 | TPL subscriptions at a discounted rate for employees | Istituto Poligrafico e Zecca dello Stato S.p.A. | Agreement with ATAC for the purchase of annual subscriptions for employees and family members |
| 284 | Adoption of sustainability protocols for the certification of green buildings | Green Building Council Italia | Protocols can be applied to buildings or entire neighborhoods to drive investments towards measurable sustainability |
| 285 | Training and information relating to the impact reduction potential of sustainable construction | Green Building Council Italia | Transversal application to collect impact data on buildings in the city of Rome |

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 286 | Drafting of the city's green building map | Green Building Council Italia | Publication and updating of the green building map of the city of Rome, with the aim of involving citizens in understanding the evolution of the city. |
| 287 | Definition of a development roadmap for the ecological transition of the city | Green Building Council Italia | Identification of specific objectives and actions at city level in coordination with the actions and objectives of local stakeholders |
| 288 | Development of software for measuring ESG risk in the Sports and Culture sectors | Istituto per il Credito Sportivo | Development of an evaluation model and an IT tool for the ex-ante measurement (before financing) of the ESG risk (through the ESG Rating) and the socio-environmental impact (through the SROI - Social Return on Investment). |
| 294 | Feel Safe platform | Save the Children Italia - ETS | Educational proposals on prevention and education for climate change emergencies and its impact on the frequency and intensity of emergencies |
| 298 | Energy diagnosis of the headquarters | Servier Italia S.p.A. | Energetical diagnosis conducted every 4 years starting from 2019 |
| 299 | Internal employee training on sustainability issues | Servier Italia S.p.A. | Training newsletters aimed at employees; online training test entitled "Servier Italia environmental management system" |
| 301 | Redevelopment of the internal spaces of the headquarters | Servier Italia S.p.A. | Energy efficiency and environmental protection were among the aspects most taken into consideration:<br>the new carpet was made with zero impact processes and with recycled and recyclable materials; all new furnishings are made with recycled materials and in turn recyclable in a minimum percentage of 95%; the work spaces were equipped with 250 Sanseveria plants, known for its ability to absorb pollutants in the air |
| 304 | 3R project | Servier Italia S.p.A. | Free recovery project for furniture and IT materials for the employees |
| 305 | Plastic Free Project | Servier Italia S.p.A. | The supply of plastic bottles from the company canteen has not been available anymore |
| 306 | HP Planet Partners | Servier Italia S.p.A. | Commercial deal with HP (priter supplier) for the collection of empty toners |
| 307 | ISO14001 environmental certification | Servier Italia S.p.A. | The certification confirms the commitment to respect environmental criteria |
| 310 | Design methodology that involves digitalization of processes, involvement of clients and monitoring of interventions | Teicos UE S.r.l. | Since 2018, the integrated approach of the CoREn® method has led, in 80% of cases, to the development of definitive interventions closer to the ambitious scenarios illustrated. The co-planning of the redevelopment is crucial in accelerating the decision-making processes which constitute one of the main barriers to energy efficiency in the private residential sector. |
| 312 | Monitoring energy and gas consumption via digital platforms | NH Collection Hotels | Data collection platform for electricity and gas consumption |
| 313 | ISO 14001 and Bioscore certification | NH Collection Hotels | Certification obtained in 2019 for various offices in the city (level A or B depending on the office) |
| 315 | Zero waste project | NH Collection Hotels | Project that aims to reduce solid waste produced in city hotels locations |
| 341 | RiusiamOLi project | ENI S.p.A. | Project to raise awareness of the collection of used vegetable oils from domestic users |
| 342 | Eniscuola projects | ENI S.p.A. | Projects with the aim of raising students' awareness of current issues related to the energy transition through workshops, meetings and teacher training. |
| 343 | Creation of an innovation district for the ecological transition in collaboration with Roma Tre University | ENI S.p.A. | Events to encourage the creation of collaborations and events to strengthen the relationship between industry and research |
| 344 | Training school for innovative and sustainable start-ups | ENI S.p.A. | Joule supports the growth of innovative and sustainable startups to create an entrepreneurial ecosystem in the zero-emission energy supply chain and spread the culture of entrepreneurship inside and outside Eni |
| 346 | Financing of projects dedicated to combating change and the circular economy | Banca Popolare Etica S. Coop. p.A. | Emission of credits for circular projects |
| 348 | Reduction of the events footprint | Banca Popolare Etica S. Coop. p.A. | The Bank is committed to reduce the environmental impact of its events. For events with 100+ people, the CO2 emissions generated are measured and compensated. |
| 356 | Corporate transport service | Autostrade per l'Italia S.p.A. | Adoption of a company shuttle between the headquarters and Tiburtina metro station, to encourage intermodal transport |
| 357 | Carsharing/company carpooling | Autostrade per l'Italia S.p.A. | App for corporate car sharing/car pooling management |
| 359 | ENTRACK project | Aisfor S.r.l. | Training aimed at local and regional authorities for the implementation of strategic objectives |
| 360 | ASSERT project | Aisfor S.r.l. | Mentoring to reduce energy poverty for people with disabilities |
| 361 | COMANAGE project | Aisfor S.r.l. | Support to municipalities for the creation of energy communities |
| 362 | RENOVERTY project | Aisfor S.r.l. | Project to tackle energy poverty and promote the redevelopment of buildings |
| 363 | Introduction of digital platforms and consumption optimization software | Almaviva S.p.A. | SEM (Smart Energy Management) is a solution for the "smart" use of energy consumption data, in favor of protecting the environment and reducing costs. |
| 365 | ISO 14001 and ISO 50001 environmental certifications | Almaviva S.p.A. | Environmental impacts are managed through the Environmental and Energy Management System |
| 367 | Adoption of corporate mobility manager | Almaviva S.p.A. | Adoption of a key figure in the organization of sustainable corporate mobility |
| 368 | Regulated waste management | Almaviva S.p.A. | The waste management process is regulated by a specific procedure that regulates the operational and disposal activities of all excess substances and materials |
| 369 | Virtuous paths of learning and awareness | Almaviva S.p.A. | Courses aimed at employees on the impacts of their work on the environment, on the rationalization of consumption and conscious use of energy resources |
| 384 | Access to credits through the Industry 4.0 Plan | ATAC S.p.A. - Azienda per la mobilità | Credits requested for the replacement of tangible and intangible capital goods functional to technological transformation |
| 385 | Access to the super amortization of the National Industry 5.0 Plan | ATAC S.p.A. - Azienda per la mobilità | Credits requested for new investments in production structures located in the area to reduce consumption |
| 386 | Introduction of the environmental and energy management system and of the respective roles of Energy Manager and Climate Manager | ATAC S.p.A. - Azienda per la mobilità | The digital platform guarantees consumption efficiency under the guidance of a company energy manager |
| 387 | ISO14001 certification on three factories and two metropolitan lines | ATAC S.p.A. - Azienda per la mobilità | ISO14001 certification on three hubs and two metropolitan lines. The company environmental management system has been active since 2010 |
| 392 | Data management software for information coming from metropolitan lines | ATAC S.p.A. - Azienda per la mobilità | Introduction of MAAS digital platforms and software for optimizing energy and water consumption and IoT devices |
| 394 | Digitalization of internal processes with a progressive transition to digital | ATAC S.p.A. - Azienda per la mobilità | MAAS digital platforms for the optimization of energy and water consumption and the installation of IoT devices |

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 395 | Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices | ACEA ATO 2 S.p.A. | Introduction of the Waidy Management System to analyse, represent and monitor enormous quantities of data from the group's information systems |
| 400 | Promotion of sustainability governance by maintaining the quality, environmental and safety management system | ACEA ATO 2 S.p.A. | Sustainability Policy and Integrated Management System, which defines the vision and essential values regarding quality, environment, safety and energy to which the Company's strategies and objectives must refer |
| 402 | Stakeholder involvement initiatives with the Acea Scuola and Depurart project | ACEA ATO 2 S.p.A. | Information and training activities on issues relating to the Group's businesses for schools and young people. |
| 409 | AQUARUM project | ACEA ATO 2 S.p.A. | Study on potential underground water resources and the impacts on their withdrawal |
| 410 | Roma Up program | A Sud Ecologia e Cooperazione O.d.V. | Mapping of urban networks for enhancing participatory environmental engagement: training course on citizen science tools for monitoring environmental key aspects |
| 411 | Sustainable culture program | A Sud Ecologia e Cooperazione O.d.V. | The objective is to inspire the cultural sector in defining creative climate leadership by engaging and training sector operators |
| 412 | Climate Sentinels Project | A Sud Ecologia e Cooperazione O.d.V. | The objective is to strengthen the skills and knowledge of young people and educating communities |
| 413 | Birth of the Renewable Energy Community | A Sud Ecologia e Cooperazione O.d.V. | Legal establishment of the Renewable Community in the Torpignattara district |
| 414 | Energy saving education courses | Fondazione Banco dell'energia Ente Filantropico | Financial support in the payment of energy utilities for 42 families and a savings education program aimed at its beneficiaries |
| 415 | Financial support and training aimed at two co-housing | Fondazione Banco dell'energia Ente Filantropico | Payment of energy bills for two cohousing managed by the Community of Sant'Egidio and promotion of energy saving education courses. |
| 419 | Corporate smart working and Mobility Manager | BASF ITALIA S.p.A. | Incentives for corporate smart working and definition of corporate Mobility Manager |
| 422 | Efficient energy management | BASF ITALIA S.p.A. | Since 2023 the company has carried out the energy diagnosis of its production plant. Introduction of digital platforms, energy/water consumption optimization software and installation of Internet of Things (IoT) devices |
| 444 | Car sharing, car pooling and bike park | Sport e Salute S.p.A. | On the occasion of the various events hosted at the Olympic stadium and the Foro Italico, dedicated parking areas have been provided for car sharing and car pooling, bike parking and the use of electric vehicles to facilitate travel |
| 446 | Waste reduction interventions | Sport e Salute S.p.A. | Reduction in the use of plastic in packaging, increasing the commitment to waste sorting |
| 453 | 14001 certification | Banca d'Italia | Introduction of environmental management and energy management systems. The Climate Change and Sustainability Committee has been created in 2022: the Bank has nominated the figure of the energy manager, with the aim of reducing energy consumption and, consequently, greenhouse gas emissions. |
| 456 | Reuse packaging materials | Banca d'Italia | Reuse, in collaboration with the supplying paper mills, of wooden pallets/tops for the transport of watermarked paper for the production of banknotes. 90% of packaging materials were reused in 2022-2023 |
| 457 | Donation of reusable goods | Banca d'Italia | Furnishings, computers and other accessories are donated to other entities in need such as schools and non-profit organizations |
| 458 | Installation of water dispensers | Banca d'Italia | Installation of water dispensers connected to the local water network in company canteens in the Rome area, in order to avoid the use of water packaged in plastic bottles. 80% reduction in plastic bottles compared to the previous year |
| 459 | Elimination of landfilling of shredded banknotes | Banca d'Italia | Since January 2023, all the Bank's branches have been sending the shredded waste to waste-to-energy plants. More sustainable solutions than the waste-to-energy plant are currently being evaluated for the future, such as the possible reuse of the shredded material in other contexts, for example in construction materials |
| 461 | Packaging systems with lower environmental impact | Banca d'Italia | The activity involves the study of alternative banknote packaging systems to those currently in place, with the aim of reducing the environmental impact of the cash sorting process |
| 472 | Waste treatment efficiency | FAO | Installation of a composter in the ecological area for the treatment of approximately 80 t/y of organic waste |
| 473 | Installation of food waste monitoring stations | FAO | Smart scales installed in all catering spaces and kitchens to calculate the amount of organic waste resulting from food preparation and consumption. Awareness action to reduce food waste for all canteen and bar users |
| 476 | Study for the efficiency of waste collection and production | Fabbrica San Pietro | Environmental assessments through cost-benefit analyzes of products in use; new governance measures for the separate collection of recoverable fractions |
| 477 | Replacement of synthetic materials with recycled natural fabrics | Fabbrica San Pietro | Replacement of disposable shoulder covers used by visitors with washable ecological cotton products |
| 478 | Installation of sensors for monitoring air quality | Fabbrica San Pietro | Monitoring of air quality inside St. Peter's Basilica |
| 479 | Study of the relevant buildings | Fabbrica San Pietro | Defined possible intervention scenarios aimed at reducing CO2 emissions and quantifying the benefits in energy, environmental and economic terms |
| 495 | Apprenticeship and internship programs for young workers | FASSA S.r.l (Fassa Bortolo) | Train young people and skills to increase their constantly evolving job opportunities |
| 497 | Energy diagnoses and environmental management systems | NETGROUP S.p.a. | Energy Diagnoses to identify the improvement interventions necessary to reduce energy consumption; introduction, over a three-year period, of an integrated environmental and energy management system based on obtaining the following certifications: ISO14001; ISO14064; ISO50001. Appointment of the Energy Manager. |
| 499 | Adoption of corporate mobility manager | NETGROUP S.p.a. | Integrate the figure of the Mobility Manager into the staff. The main objective is to create a Home-Work Travel Plan (PSCL) which rationalizes staff travel through the analysis, development and verification of various aspects. |
| 500 | Proposals to incentivize smart working and promote soft mobility | NETGROUP S.p.a. | The objective is to help reduce the need for daily travel, through platforms and company policies that encourage remote working. Furthermore, the aim is to include, in a short period of time, within the company fleet 5 electric scooters for the benefit of employees and 3 electric scooters dedicated to the Company's top roles. |
| 501 | Organization of spaces and services for remote meetings | NETGROUP S.p.a. | Over the last year, Netgroup has already implemented various actions in order to organize its spaces and services for remote meetings both internally within the company among employees and externally with its customers, partners and suppliers. |
| 502 | Corporate governance review | NETGROUP S.p.a. | Adoption of multilevel governance committed to climate objectives which includes: sustainability committee of the Board of Directors, working groups for the reduction of emissions, regulated performance monitoring, incentives for the dissemination of good practices among employees |

| ID | Action | Stakeholder | Description |
|---|---|---|---|
| 503 | Optimization of the GHG release process | NETGROUP S.p.a. | More sustainable solutions in compliance with developing methodology strategies that aim to limit energy consumption. In particular, the project involves the setting up of a laboratory for the regeneration of technological equipment for the implementation of green solutions. The laboratory will be set up with a series of systems and equipment for the repair and testing of IT systems. |
| 504 | Employee training and awareness | NETGROUP S.p.a. | Information workshops, internal communications and newsletters, certifications and company events to involve employees on the sustainable topics |
| 507 | Training and awareness courses | ABB S.p.a. | Information workshop for lower secondary school students with the aim of creating awareness on the issues of sustainable development |
| 510 | Introduction of energy management systems | ABB S.p.a. | Implementation of the ISO 50001 management system |
| 514 | Efficient waste treatment systems | ABB S.p.a. | Zero waste to landfill project and UL certification |
| 517 | Proposals for smart solutions for the intelligent management of the city | Enel X Italia S.r.l. | Smart parking, smart tourism, satellite surveys, traffic control, communications to citizens: these are initiatives offered to the Administration currently under evaluation |
| 518 | Enel X YoUrban portal dedicated to Public Administrations | Enel X Italia S.r.l. | Tools to accompany administrations on the path to sustainable development, digitalizing services to: acquire awareness of the current status of their territory, define the priorities of sustainability interventions and support urban planning decision-making processes. |

ROMA

2030 Climate Neutrality Action Plan

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# Annex 5

*B-2.2d: Detail of adaptation actions*

| Sector | ID | Action | Stakeholder | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| AFOLU | 483 | Protection measures and implementation of the ecological network | Rete Ferroviaria Italiana S.p.A. | 2025-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 484 | Technical roundtables for adaptation strategies to climate change | Rete Ferroviaria Italiana S.p.A. | 2025-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 485 | Redevelopment of the banks and green areas along the Tiber river | Department of Urban Planning and Implementation | 2024-2026 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| AFOLU | 486 | Sea park - Ostia Antica (Willy Ferrero park) | Department of Urban Planning and Implementation | 2021-2029 | Finance and fundings | Governance and policy innovation | Democracy and participation |
| AFOLU | 488 | Climate adaptation actions at the headquarters | Angelini Real Estate S.p.A. | 2024-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Cross Cutting | 489 | Creation of lamination tanks and reduction of waterproof surfaces | Centro Agroalimentare Roma S. Coop. p.A. | 2026-2029 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 490 | Resilient management of water resources | Aeroporti di Roma S.p.A. | 2026-2029 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 491 | Reduction of impervious surfaces | Ama S.p.A. | 2026-2029 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 493 | Climate adaptation interventions | Agenzia del Demanio | 2024-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| AFOLU | 494 | Territory and heat island monitoring | ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale | 2022-2026 | Technology and infrastructures | Finance and fundings | Learnings and capabilities |

ROMA

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# Annex 6

*B-2.2e: Detail of actions outside the perimeter of Rome*

| Sector | ID | Action | Stakeholder | Timeframe | Systemic Levers | | |
|---|---|---|---|---|---|---|---|
| Waste | ET1 | Reuse of waste water | Aeroporti di Roma S.p.A. | 2022-2025 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Cross Cutting | ET2 | Purchase of certified green energy | Aeroporti di Roma S.p.A. | 2021-2030 | Governance and policy innovation | Technology and infrastructures | Governance and policy innovation |
| Buildings | ET3 | Infrastructure renovation with sustainability protocols | Aeroporti di Roma S.p.A. | 2019-2030 | Technology and infrastructures | Finance and fundings | Governance and policy innovation |
| Buildings | ET4 | New office building | Aeroporti di Roma S.p.A. | 2023-2025 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | ET5 | Installation of RES systems | Aeroporti di Roma S.p.A. | 2021-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Buildings | ET6 | Energy efficiency of airports | Aeroporti di Roma S.p.A. | 2019-2030 | Finance and fundings | Governance and policy innovation | Technology and infrastructures |
| Transport | ET7 | Installation of charging points for passengers | Aeroporti di Roma S.p.A. | 2021-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Waste | ET8 | New composter for on-site organic waste management | Aeroporti di Roma S.p.A. | 2025-2026 | Finance and fundings | Technology and infrastructures | Social innovation |
| Waste | ET9 | Introduction of digital platforms, consumption optimization software | Aeroporti di Roma S.p.A. | 2023-2025 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Transport | ET10 | Vehicle fleet electrification | Aeroporti di Roma S.p.A. | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Transport | ET11 | Incentives for smart working | Aeroporti di Roma S.p.A. | 2020-2030 | Governance and policy innovation | Governance and policy innovation | Democracy and participation |
| Waste | ET12 | Structural interventions for a total of approximately 33km at Acquedotto Marcio | ACEA ATO 2 S.p.A. | 2023-2024 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |
| Waste | ET13 | Intervention on the new upper section of the Peschiera aqueduct | ACEA ATO 2 S.p.A. | 2024-2030 | Finance and fundings | Technology and infrastructures | Governance and policy innovation |

# CLIMATE CITY CONTRACT

**Ufficio di Scopo Clima**
Direttore: Edoardo Zanchini
Danila Severa, Cecilia Corelli, Giuseppe Rizzo

**Assessorato all'Agricoltura, Ambiente e Ciclo dei rifiuti**
Assessore: Sabrina Alfonsi
**Assessorato alla Mobilità**
Assessore: Eugenio Patanè
**Assessorato ai Lavori Pubblici e alle Infrastrutture**
Assessore: Ornella Segnalini
**Assessorato Urbanistica**
Assessore: Maurizio Veloccia
**Assessorato al Patrimonio e alle Politiche Abitative**
Assessore: Andrea Tobia Zevi

**Dipartimento Tutela Ambientale**
Direttore: Giuseppe Sorrentino
**Dipartimento Valorizzazione del Patrimonio e Politiche Abitative**
Direttore: Tommaso Antonucci
**Dipartimento Pianificazione strategica e PNRR**
Direttore: Raffaele Barbato
**Dipartimento Coordinamento Sviluppo Infrastrutture e Manutenzione Urbana**
Direttore: Ernesto Dello Vicario
**Dipartimento Mobilità Sostenibile e Trasporti**
Direttore: Antonello Fatello
**Dipartimento Valorizzazione del Patrimonio e Politiche Abitative**
Direttore: Tommaso Antonucci
**Dipartimento Ciclo dei Rifiuti Prevenzione e Risanamento dagli Inquinamenti**
Direttore: Paolo Gaetano Giacomelli
Silvia Anselmi, Eugenio Donato, Marta Giovanna Geranzani

**Roma Servizi per la mobilità**
Presidente: Anna Donati
Fabio Maria Nussio

Consulenza Tecnico Scientifica
**AESS**
Piergabriele Andreoli, Alessandra Cavalletti, Stefano Ranuzzini, Roberta Benetti, Stefano Lombardi, Francesca Gaburro.

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# CLIMATE CITY CONTRACT

## COMMITMENT PLAN

PIANO Clima ROMA

ROMA

with the support of

AGENZIA PER L'ENERGIA E LO SVILUPPO SOSTENIBILE AESS

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# Table of Contents



# Note

Please note that when "Roma Capitale" is cited in the text, it stands for "Public Administration of Rome" while with the term "Rome" is indicating the territory of Rome.

# 1 Introduction

The priority of Rome's commitment to climate is due to the crisis acceleration and the increasing devastating social and environmental consequences worldwide, as well as in the willingness to make the climate a transversal key for urban policy innovation to tackle the challenges that the city is called to face.

Participation in the *EU Mission Climate neutral and smart cities* represents a great opportunity to effectively programme choices in the direction of an ambitious city trajectory towards climate neutrality and make it a shared goal for all city actors.

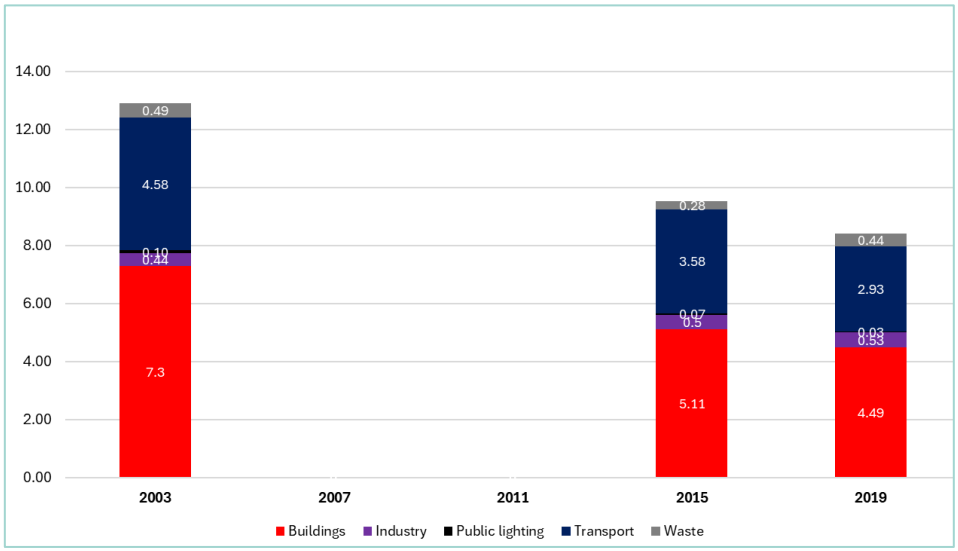
The city's two key words in its ongoing climate work are vision and concreteness. Two new instruments defining the city's climate action priorities - the Climate City Contract, as far as mitigation is concerned, and the Roma Capitale Climate Adaptation Strategy - identify the actions already underway and those to be undertaken, as well as the barriers to be overcome and the opportunities that can be created. Hence, the most effective solutions to help families and businesses reduce their energy expenditure thanks to competitive and accessible alternatives for all citizens.

The aim is to transform Rome into an energy transition laboratory where, thanks to the projects spread throughout the city, the city meets the challenges of liveability, strengthening industrial innovation and local economy, reducing inequalities and improving urban regeneration, creating new cultural activities and opportunities for all.

**Rome is a city where emissions are reducing.** Analyses carried out as part of the SECAP pathway show a steady decline since the beginning of the new century, with a 35% drop compared to 2003 and an 11% drop to 2015, from 12.905 million in 2003 to 8.411 million tonnes of $CO_2$ in 2019. Per capita emissions stand at 2.9 tonnes $CO_2$eq in 2019, whereas they were 4.9 tonnes $CO_2$eq in 2003. The new methodology introduced by JRC for the Mission also asks cities to consider the additional sectors of AFOLU (Agriculture, Forestry and Other Land Use) and IPPU (Industrial Processes and Product Use) and to use a slightly different emission factor. This brings the value of $CO_2$eq emissions in 2019 to 8.598 million tonnes, and per-capita emissions to 3.0 tonnes $CO_2$eq.

A gradual reduction in emissions has taken place in all sectors in recent years, with the percentage distribution between sources remaining essentially constant over the years, and almost 94% of emissions related to building and transport consumption.

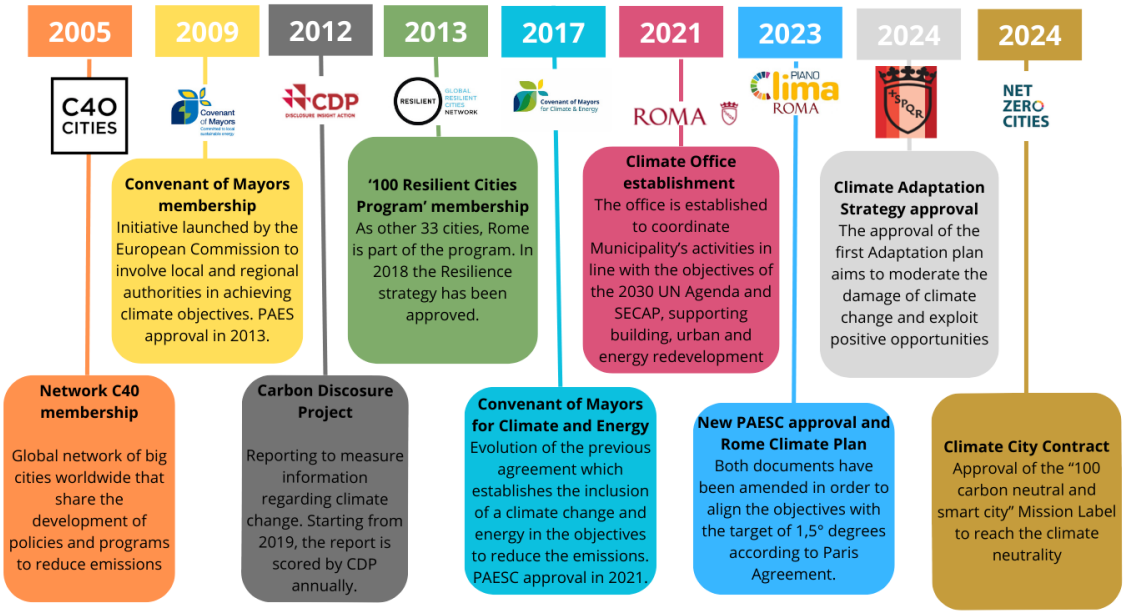
*Figure 1. Evolution of Rome's emissions by sector from 2003 to 2019 (mln of tCO2eq)*



**The reduction in emissions achieved in recent years is largely explained by technological improvements.** In particular, the renewal of the vehicle fleet has led to an improved efficiency of combustion processes, while in building heating, the gradual replacement of the most polluting boilers with more technologically advanced systems and the thermal insulation and energy efficiency of the building stock have reduced emissions. On the other hand, the increased use of renewable energy sources in the energy mix has had an effect on reducing emission factors related to electricity consumption. In addition, the switching of a large part of the lighting to LED lamps has reduced emissions from public lighting.

**Roma Capitale seeks to contribute to the global climate commitment through strengthened collaboration with European and international cities to stop the climate crisis**. In 2005, the Municipality joined the **C40 network** of the world's large cities that agree on accelerating actions to stop climate change and, in 2009, the **Covenant of Mayors.** In 2013, it approved the Sustainable Energy Action Plan (SEAP). That same year, it joined the '100 Resilient Cities' initiative and, in 2021, the Sustainable Energy and Climate Action Plan (SECAP), which was last updated in the Climate Plan approved in 2023.

*Figure 2. Roma Capitale's climate commitment*




**In 2023, Rome approved the update of the SECAP,** as requested by the C40 Network to contribute to the global temperature containment target of 1.5 degrees. The 'Deadline 2020' programme has developed targets for different large cities around the world, with different goals depending on economic and geographic parameters. **For Rome, the planned targets are higher** than the reduction set by the SECAP in 2021. The new Plan, approved in November 2023 by the City Assembly, envisages a committed emission reduction target of **-66% in 2030 compared to 2003,** surpassing the -51.6% forecast in the plan approved in 2021.

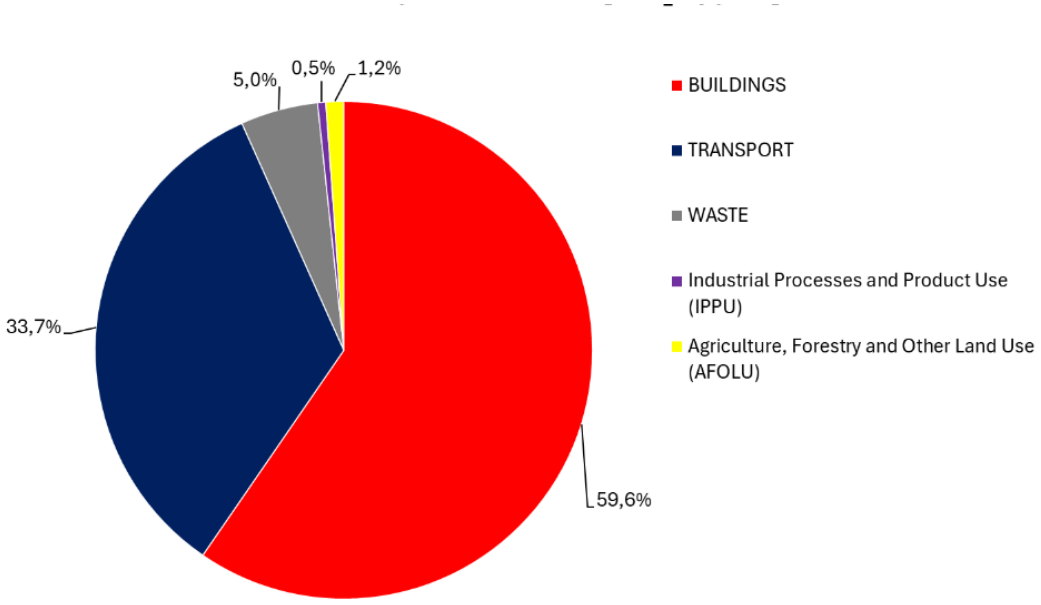
**The carbon neutrality target set by the '100 carbon-neutral and smart cities by 2030' Mission requires us to raise the level of ambition and create a coherent framework of urban policies** with governance and long-term monitoring of results, based on a process of discussion and sharing with the city and stakeholder involvement.

**The first choice to respond to this challenge was to create a new Climate Office, in the Mayor's Cabinet**, with the task of coordinating the city's adaptation and mitigation policies. An internal working group within the administration, coordinated by the Climate Office, was created to ensure strong involvement and streamlining of all departments and councillorships whilst strengthening the scientific support of national research institutes and universities to the process.

**The Climate City Contract is part of a path of urban policies that have had a strong acceleration towards climate neutrality in recent years**, with a cross-sectoral vision covering the different sectors of the administration and which is in line with the instruments approved: Waste Plan, Urban Plan for Sustainable Mobility, Climate Adaptation Strategy. These newly drafted instruments are one of the building blocks of the CCC and their implementation and results verification, updating of measures will be crucial for the work effectiveness and policy integration. In addition, the CCC drafting saw the involvement of the city's economic, social and institutional actors with respect to the ongoing and planned decarbonisation choices so that they could be integrated within a vision and share the work path for the coming years.

**With the Climate City Contract the city defines a consistent decarbonisation strategy.** To Rome, the work of the CCC represented a chance for a clearer identification of objectives and priorities in the direction of decarbonisation, a more effective organisation of necessary actions and investments, barriers and opportunities through discussions with stakeholders. As a starting point, emissions were updated according to the parameters defined by the Mission, which partly differ from those of the Covenant of Mayors used for the SECAP. 94% of the municipality's emissions come from the buildings and transport sectors, with 60% and 34% respectively, the remainder being split between waste (5%), industrial processes (IPPU) and agriculture (AFOLU). The graph highlights the breakdown of $CO_2$eq emissions by sector in 2019, the year chosen as the baseline for pre-pandemic homogeneous data.

*Figure 3. Breakdown of emissions by sector, year 2019 (tCO2eq/year)*



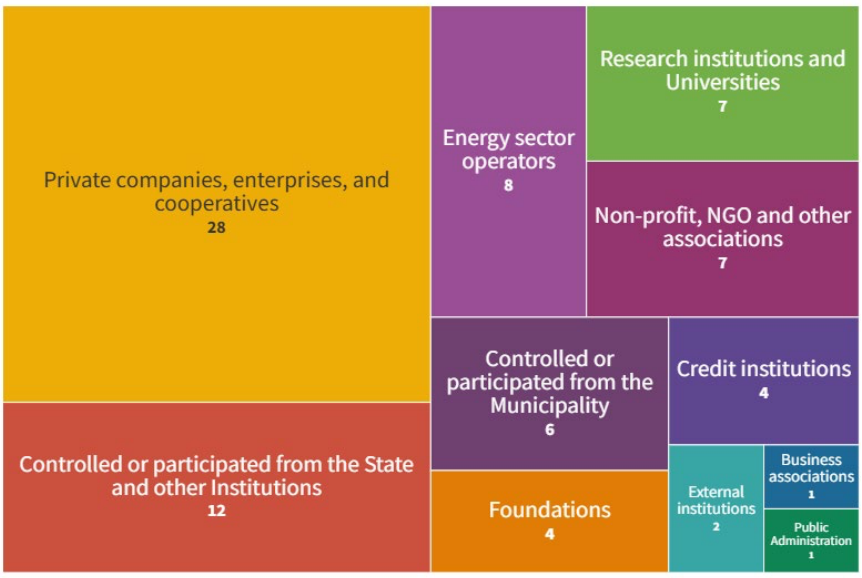
# 2 Climate City Contract's Stakeholder Engagement

Rome's Climate City Contract has involved the city's economic and social actors with an Expression of Interest to collect their participation in the decarbonisation process and trace the framework of implemented and planned actions in the direction of climate mitigation and adaptation. Its objective is to accompany the CCC implementation process by continuing and expanding to new actors, sharing themes, objectives and projects where collaboration can be strengthened.

**80 stakeholders have joined the Climate City Contract process in Rome:**

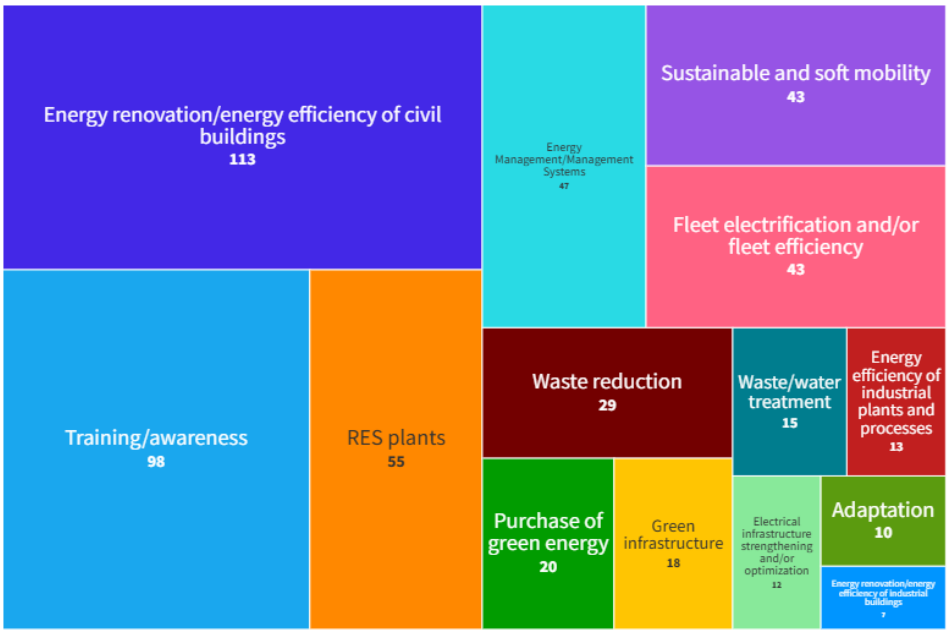
- 12 among Institutions, Bodies and State-controlled Companies based in Rome (Agenzia del Demanio, Autostrade per l'Italia, Banca d'Italia, Cassa depositi e prestiti, Cinecittà, Istituto Nazionale della Previdenza Sociale, Istituto Poligrafico e Zecca dello Stato, Leonardo, Poste Italiane, Rete Ferroviaria Italiana, SACE, Sport and Health).
- 6 subsidiary and investee companies of Roma Capitale (Acea ATO2, Ama, Areti, Atac, Centro Agroalimentare di Roma, Risorse per Roma).
- 8 Energy companies (Edison Next, Enel Sole, Enel X Way Italia, Enel X Italia, Engie, Eni, Siram, Terna).
- 7 Research Institutions and Universities (CNR, ENEA, Ispra, Rome Botanical Garden, La Sapienza University, Tor Vergata University, Roma Tre University).
- 1 Public Administration body operating in the health sector (ASL 1 Rome).
- 4 Foundations (Banco dell'Energia, Bioparco di Roma, Marevivo, MAXXI).
- 4 Credit Institutes (Banca Etica, BCC di Roma, Istituto per il Credito Sportivo, Unicredit)
- 1 Business Association (Unindustria)
- 28 among private companies, enterprises and cooperatives operating in different sectors (ABB, Aeroporti di Roma, Aisfor, Almaviva, Angelini Real Estate, AzzeroCO2, Basf Italia, Birra Peroni, Biscotti P. Gentilini, CER Confartigianato Lazio, Coopservice, Elettronica, Envision, Fassa, Hotel Eden, Ikea Italia, Intecs Solutions, Maire, Netgroup, NH collections Hotel, Radio Rock, Sensoworks, Servier Italia, Teicos, Toyota Motor Italia, Triumph Italy, UrbanV., Wind Tre),
- 7 Third Sector organisations and Associations (A Sud, Greenpeace Italy, Green Building Council Italy, Kyoto Club, Rete Assist, Save the Children, WWF Italy)
- 2 'extraterritorial' organisations: FAO (the Rome-based Food and Agriculture Organisation of the United Nations) and Fabbrica San Pietro (Institution of the Vatican City State).

*Figure 4. CCC Stakeholders by category*



External stakeholders - i.e. all stakeholders outside the Roma Capitale administration - submitted a total of **705 action cards** that were then merged into 493 actions: 113 for energy efficiency renovation of civil buildings and 7 for energy renovation of industrial plants, 55 renewable energy plant projects for a total of 65 MWp of installations (of which about 27 MWp already installed), 98 for training and awareness-raising in different fields, 47 for energy management and implementation of management systems, 20 for green energy purchase, 43 for sustainable/soft mobility, 43 of efficiency upgrading and/or electrification of public (including LPT) and private vehicle fleets, 13 of energy efficiency upgrading of industrial plants and processes, 12 of upgrading and efficiency upgrading of electricity infrastructures, 29 of waste reduction and waste-to-energy measures, 18 of green infrastructure measures, 15 of wastewater treatment measures and 10 of climate adaptation.

*Figure 5. Stakeholder actions by type of intervention*




# 3 Climate neutrality actions and investments

The structure of the emission reduction scenario in Rome took the emissions baseline in the year 2019 as a reference and, through a process of co-creation which involved the various departments of the administration and stakeholders, traced the articulated portfolio of interventions carried out since the baseline year, those in progress and those planned with funding from Roma Capitale and stakeholders.

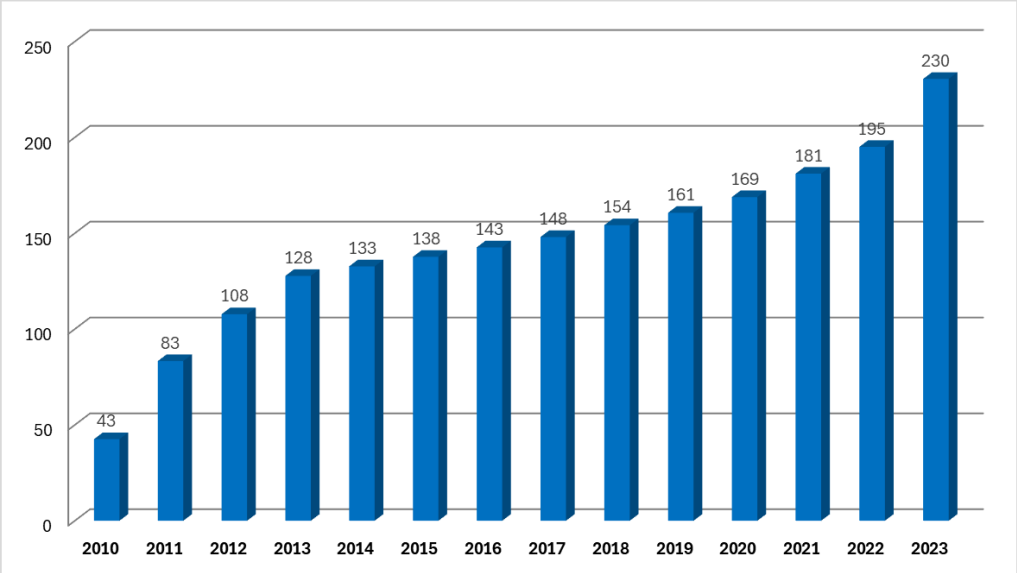
**Rome is currently undergoing unprecedented investments in the direction of the overall decarbonisation and redevelopment of the city** that will have a structural impact on the reduction of emissions related to the consumption of buildings, mobility, and waste management, with actions that will result in far-reaching innovation in the various sectors, made possible by the resources allocated through the Recovery Plan, those related to the organisation of the 2025 Jubilee of the Catholic Church, European, national, and regional funding, the administration's budget, and public-private partnerships.

*Table 1. Ongoing investments by sectors*

| Sector | Investments |
|---|---|
| Energy efficiency and building upgrading | € 650,148,387 |
| Urban upgrading and regeneration | € 1,518,542,187 |
| Sustainable Mobility | € 9,184,238,257 |
| Circular Economy | € 1,195,395,445 |
| Green areas reforestation and redevelopment | € 283,334,826 |
| Water system and adaptation | € 1,367,268,797 |
| Digitisation | € 228,126,456 |
| Modernisation of the electricity grid | € 2,800,000,000 |
| Artistic Heritage Restoration | € 210,865,878 |
| **Total** | **€ 17,437,920,232** |

The table considers all ongoing and planned investments with specific funding such as: NRP funds, Jubilee 2025 funds of the Catholic Church, national, regional, structural, municipal funds and considers interventions managed by different public bodies. The investments cover a wide range of decarbonisation actions but also urban upgrading, forestation, digitisation, climate adaptation that contribute directly or indirectly to the ecological transition. Also included are the many interventions to restore the artistic heritage of a city whose presence and articulation of assets is unique in the world and at risk from growing climate impacts. Moreover, among these interventions, those considered most significant for the city's climate neutrality process were included in the Climate City Contract and their contribution in terms of $CO_2$eq emissions reduction was highlighted.

*Figure 6. Cumulative trend in installed photovoltaic power in Rome (MWp) (Source: GSE)*




As far as **renewable energy sources** are concerned, the growth in the installation of solar photovoltaic plants continues - at the end of 2023, 21,846 plants were installed in the Municipality of Rome for a power of more than 230 MW and a strong acceleration of installations in recent years -, in addition, the city can count on the contribution of hydroelectric plants, such as the barrage on the Tiber River at Castel Giubileo, with an installed power of 17 MW, as well as smaller plants installed on the aqueduct network. As far as buildings owned by the municipal administration are concerned, a total of 1.92 MW

of photovoltaic systems are currently installed on schools, offices and other facilities, for a total of 163 buildings. Projects underway thanks to the contribution of the NRP and European, regional and national resources will allow 10 MW to be installed by 2026, to which will be added Project Financing projects proposed by private actors on Roma Capitale facilities.

In Rome in recent years, several **energy requalification interventions of private residential buildings** have been carried out that have had access to state tax deductions. A specific study, carried out for the Climate City Contract by Enea, estimates that with the Superbonus incentive, energy requalification interventions have been carried out in the period 2021-2024 on 6,896 buildings, of which 2,522 condominiums, for a total investment of approximately EUR 3.55 billion and a reduction of at least two energy classes. In addition, 8,158 photovoltaic systems were installed as part of the Superbonus incentive, with a total capacity of 51.2 MWp. As far as the Ecobonus incentive is concerned, ENEA's estimate refers to about 156,700 energy efficiency interventions carried out in the 2020-2023 period, equal to over EUR 1.1 billion. Moreover, about 150 schools, and over 1,000 public social housing units, libraries, theatres, and museums are undergoing energy requalification interventions with resources from the Recovery Plan, state, regional, and municipal funds.

In the area of mobility, interventions to strengthen the public transport offer and zero-emission mobility systems are underway or planned with access to specific financing for a total of EUR 9.18 billion. In particular, plans include the expansion of the metro and tram network and the gradual electrification of road transport, through funding for the completion of the Metro C line (the new Porta Metronia and Colosseo stations will be opened in 2025, and the extension to Farnesina is being financed), the construction of four new tram lines (Palmiro Togliatti, Verano-Stazione Tiburtina, Termini-Vatican-Aurelio, Roma Termini-Tor Vergata, for a total of 32 kilometres), the purchase of 411 electric buses, 110 hybrids, 244 methane-powered buses, 121 tram trains, and 40 metro trains. In addition, construction sites are underway for the realisation of 130 new kilometres of bicycle paths, which will expand on the existing 320 kilometres. To curb atmospheric pollution and car circulation, the city has approved a ‘Green Area’ limited traffic zone, with restrictions on the circulation of the most polluting vehicles, to be monitored through an electronic system with video cameras at 154 entrances and verification of vehicle pollution classes. RFI is in the process of upgrading stations and programmes on the Rome railway node, some of which are of great importance, such as the closure of the railway ring, the construction of the new Pigneto station and interchange node, and the upgrading of railway lines used by commuters. In addition, substantial infrastructural upgrading and the purchase of trains are planned on the two Rome-Ostia Lido and Rome-Viterbo urban railway lines managed by ASTRAL and owned by the Region.

Rome’s **urban upgrading and suburbs regeneration** will allow to reduce energy consumption in residential units and climate-altering emissions and increase the quality and identity of urban spaces through functions and services. Some of the city's suburbs (Corviale, Tor Bella Monaca, Santa Maria della Pietà) affected by major degradation are being addressed through Recovery Plan resources, to achieve a significant reduction in energy consumption by installing photovoltaic solar systems, creating energy communities, and upgrading social and cultural spaces. In addition, interventions are being carried out in each of the city's districts to redesign neighbourhoods on the basis of the ‘15-minute city’ concept, so that all services essential for a good quality of life are within a 15-minute walking distance from one's home.

In the **waste** sector, a radical transformation of the waste management system is taking place toward greater and more capillary differentiated waste collection, higher and higher valorisation of waste, through recovery and reuse, and by building the necessary facilities within the municipal territory. Among the interventions currently being implemented in the Municipality territory are two anaerobic bio-digestion plants with an annual capacity of 100thousand tonnes for the organic waste fraction to produce bio-methane and digestate; two plants with an annual capacity of 100thousand tonnes each for sorting paper and cardboard and plastic; 30 collection centres distributed in the various districts; a 600thousand tonne/year waste-to-energy plant for treating the unsorted waste fraction with electricity and heat

production, and a plant for the recovery and recycling of ash for the production of building materials, and a pilot project for $CO_2$ capture and storage. The two bio-digestion plants referred to above will allow AMA (the waste collection and management company of Roma Capitale) to entirely replace diesel with bio-methane. The final design of a bio-gas plant to be realised by 2030 in the former Malagrotta landfill was also approved.

To upgrade electricity grids and get them ready for the new climate scenario, investments are being made by electricity distribution and transmission grid operators. ARETI's business plan envisages investments of EUR 2.3 billion to strengthen the resilience of the distribution grid to the new climate change mitigation and adaptation scenario. Terna plans interventions to increase the efficiency and safety of the service through the construction of new power lines, the burying of some existing ones in urban areas, and the decommissioning of obsolete ones, with investments of approximately EUR 500 million to reorganise the Capital's electricity grid.

Moreover, the stakeholder engagement process allowed us to map the 493 actions of the city's stakeholders carried out since 2019, in progress or planned, excluding those financed with funds already included in Table 1, and estimate a total investment value of approximately EUR 1.983 billion.

*Table 2 Ongoing and planned investments by CCC stakeholders*

| Category | Value of the investment (€) |
|---|---|
| RES Plants | € 93,056,712 |
| Electricity infrastructure upgrading and/or efficiency | € 37,501,798 |
| Purchase of green electricity | € 17,547,036 |
| Civil building upgrading/efficiency | € 1,274,096,585 |
| Industrial building upgrading/efficiency | € 203,630,000 |
| Energy efficiency of industrial plants and processes | € 17,463,255 |
| Electrification and/or vehicle fleet efficiency | € 32,326,200 |
| Sustainable Mobility | € 19,550,847 |
| Water/waste Treatment | € 244,270,000 |
| Waste Reduction | € 769,200 |
| Green Infrastructures | € 844,161 |
| Energy Management/Management Systems | € 3,213,583 |
| Training/Awareness-raising | € 38,820,703 |
| **Total** | **€ 1,983,090,080** |

# 4 The Climate City Contract's 2030 decarbonisation target

To achieve the 2030 target, an articulated framework of actions and strategies has been identified to accelerate the path to climate neutrality in different sectors. The scope of the Climate City Contract is comprised of the entire territory of Roma Capitale, with the exclusion of the Vatican City, and takes into consideration all sectors, as per the city's application to the Mission. Rome is the largest of all Italian municipalities (1,287 square kilometres) and the one with the largest population (over 2.8 million inhabitants).

The graph shows the different levers foreseen to achieve climate neutrality: interventions envisaged by sector plans and the Climate City Contract, innovation in governance, revision of the regulatory framework, new intervention models with the involvement of public and private resources, stakeholder involvement and citizen participation.

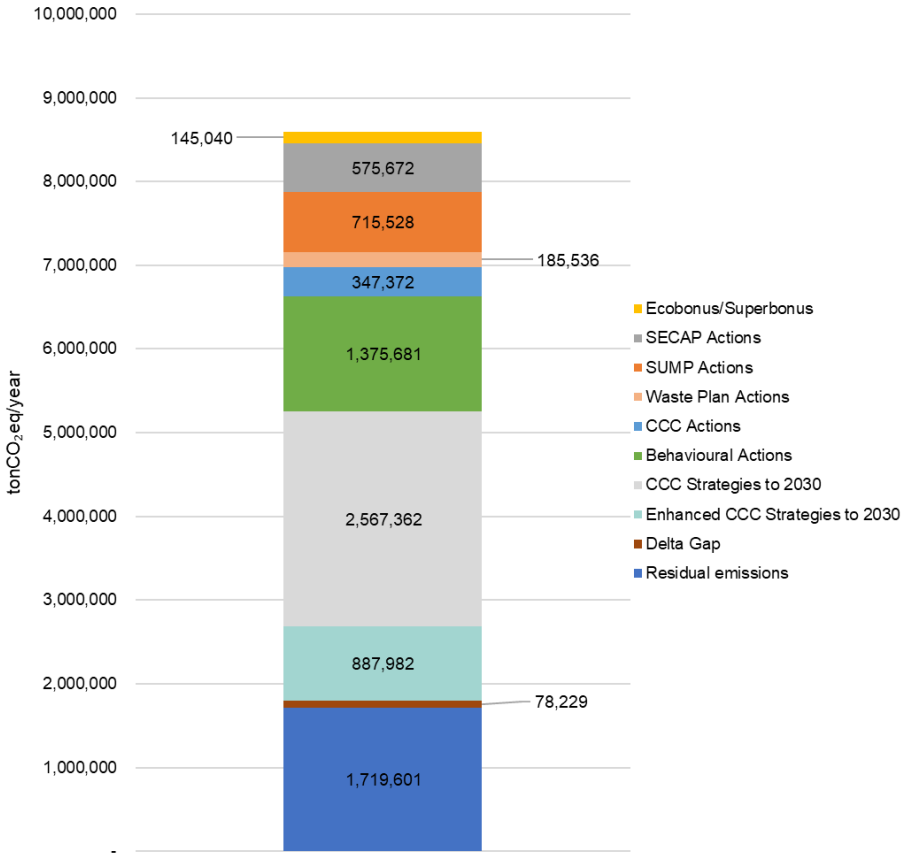



*Figure 7. Emission reduction contributions by type of action and strategy*

The Climate City Contract's work has shown that Rome has the potential to move from 8.598 million tCO2eq emissions in 2019 to 1.798 million $tCO_2eq$ in 2030, with a reduction in per capita emissions from 3.0 $tCO_2eq$/inhabitant to 0.63 $tCO_2eq$/inhabitant. The graph is designed considering the achieved results from 2019 in terms of emission reductions, and those that can be achieved with the actions underway and foreseen by the different plans in force, those foreseen by the stakeholders involved in the CCC, and the behavioural ones. The strategies of the Climate City Contract, i.e. the new intervention models in the different sectors and the actions to be financed, are broken down into two categories. The first

one with the strategies in line with the work of the SECAP 2023, integrated with the new actions and the acceleration of processes in the different sectors. The second one considers building a more ambitious decarbonisation path shared between the different government levels to accelerate investments and actions in Rome, which would bring the reduction to -79.1% compared to 2019 emissions and -86% compared to 2003. As envisaged by Net Zero City, an estimated 20% of residual emissions in the path to climate neutrality are estimated in 'hard to abate' areas, i.e. where zero emissions are difficult to achieve with today's technologies, for example: in a part of the built-up area, where the elimination of gas systems is more complex and costly (especially in historical buildings), in a portion of the private vehicle fleet and for commercial use, in some production processes and waste management. In fact, the calculations only consider types of intervention and technologies that are widespread and available, while the possibility of including the contribution that may come from the drive for innovation and experimentation that will be triggered by European climate policies, the international research and development context and competition on green products is postponed to the periodic monitoring and updating of the CCC.

The methodology proposed by Net Zero City made it possible to analyse the different actions in terms of co-benefits generated and link them with one or more systemic levers, which are gathered in figure 8 and table 3.

*Figure 8. Systemic levers adopted to identify co-benefits*

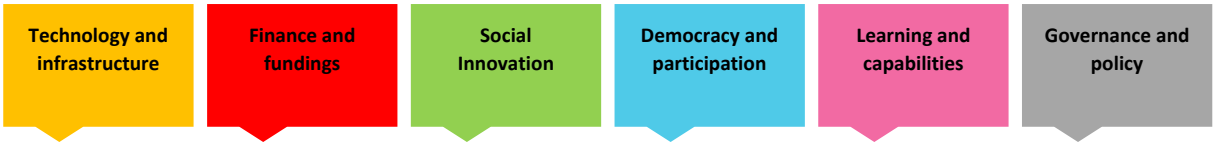



*Table 3 Co-benefits of actions*

| CO-BENEFITS |
|---|
| Increase in technological competitiveness |
| Increase in circular economy practices |
| Job creation |
| Increase in territorial synergies |
| Improvement of air quality |
| Improvement of indoor comfort |
| Reduction of dependence on fossil fuels |
| Involvement in and awareness of new sustainable practices |
| Improvement of health through physical activity |
| Increase in overall property value |
| Digitisation of services |
| Reduction of perceived noise |
| Mitigation of heat waves |
| Improvement of city liveability |
| Increase in employee awareness in the workplace |

# 5 Strategic Priorities

The decarbonisation process affects multiple aspects of the city organisation and activities. For its acceleration, the Climate City Contract identifies a number of strategic priorities capable of influencing the direction of climate neutrality and innovating specific sectors, while at the same time producing transversal results ranging from the reduction of greenhouse gas emissions and pollution to the increased liveability of urban spaces and generating positive spillovers in terms of industrial innovations and the creation of new activities, jobs and opportunities. The Rome Climate City Contract strategies cover seven priority areas.

## 5.1 Growth in renewable energy production

The strategy to 2030 aims at a strong growth in the installation of solar photovoltaic systems, favoured by the great potential of the Roma Capitale territory, as regards both irradiation and the availability of covered areas, of parking areas where photovoltaic shelters can be realised, and for an extensive farmland, where it is possible to integrate agrivoltaic systems. The goal is to valorise the different configurations of installations that are competitive today: in self-consumption to serve activities and households, for sale to the grid or (for large plants) through Power Purchase Agreement models; in shared energy configurations, such as Energy Communities (with respect to which a specific regulation has been approved for promotion) and Collective Self-consumption. In 2024, Roma Capitale approved a regulation for the creation of Solidarity Energy Communities on plants and roofs owned by the Municipality for Third Sector entities and a simplification for the installation of solar energy on roofs in the Technical Implementation Regulations of the Town Planning Regulations. Roma Capitale is preparing an amendment to the urban planning regulations to clarify and simplify the installation of roof-top solar systems.

**A specific study**, prepared for the Climate City Contract by AESS, **identified the potential of solar photovoltaic systems that could be installed in the territory of the Municipality of Rome.** In particular, the study considered installations on the roofs of civil and industrial buildings, roof-mounted systems covering the largest parking areas and agrivoltaic projects that could be implemented in some agricultural areas of the city. The estimated potential for roof-mounted photovoltaic installation on buildings is about 3.4 GW, while in the case of roof-mounted photovoltaic potential on the cover of the largest car parks, the study reported a cumulative installable power of approximately 101 MWp. Finally, the installation of agrivoltaic plants in agricultural areas of the municipality was assessed, for a total power of about 1 GW.

The study used a precautionary approach, which excludes the installation of plants within the UNESCO Perimeter and, to a limited extent, in the buildings of the areas included in the Quality Charter. Moreover, it only accounts for the most extensive parking areas and considers a maximum of 1.2% of Rome's area occupied by agrivoltaic plants.

## 5.2 Residential building efficiency and electrification of thermal systems

The 2030 strategy for the decarbonisation of buildings focuses on different and integrated interventions concerning: the efficiency of building envelopes, the electrification of heating systems, the implementation of energy consumption management systems, and the installation of renewable energy systems. These processes, now underway for some time and increasingly widespread, will play a strategic role given that the largest share of the capital's emissions comes from this sector. The emission reduction estimate elaborated with the CCC took into account the electrification of heating and hot water production systems, with the exclusion of the historic building stock and part of the condos, and a share of about 20% of overall energy redevelopment of buildings, using as parameters the savings quantified by Enea in the Superbonus interventions.

The objective is to ensure NZEB (Near Zero Energy building) or ZEB (Zero energy building) performance in urban regeneration processes, pursuant to the new European Directive on Energy Efficiency in Buildings (EPBD), while at the same time accelerating the energy redevelopment of public and private building stock, with well-defined performance targets to be achieved in reducing consumption and emissions. The Municipality's Building Regulations are being revised to accelerate and incentivise climate mitigation and adaptation measures. The aim is to progressively eliminate the use of fossil fuels for domestic heating (starting with the most energy-intensive buildings and where it is technically feasible), replacing them with integrated systems consisting of heat pumps or other efficient heating systems, low-enthalpy geothermal systems and photovoltaic systems for self-consumption or within energy communities.

As far as the buildings owned by Roma Capitale are concerned, the objective is to achieve the progressive decarbonisation of the entire heritage, using intervention models involving public-private partnerships for the implementation of energy upgrading and management through EPCs (Energy Performance Contracts), the electrification of heating systems, self-production through photovoltaic systems integrated, wherever possible, with geothermal systems, and the purchase of electricity from renewable sources with a guarantee of origin.

As regards, on the other hand, the energy efficiency of buildings in the tertiary sector and industrial plants, an estimate was made starting from the forecasts of changes in energy consumption to 2030 reported in the Lazio Regional Energy Plan.

## 5.2 Integrated and zero-emission mobility

The strategy to 2030 focuses on an increasingly integrated, electric, sustainable mobility offer, furthering the direction set by the PUMS (the Urban Sustainable Mobility Plan approved in 2022), which envisages strengthening the public rail transport system through planned interventions (the construction of the D line the technological upgrading and extension of the A and B lines, the construction of 7 new tram lines for a total of 37.5 kilometres), the progressive electrification of all public road transport and the use of zero-emission systems, the extension of the network of cycle paths, pedestrian areas and 30 kilometre per hour zones. The city sharing mobility offer of bicycles, scooters, electric cars, the presence of charging stations for electric vehicles and the integrated mobility offer through the digitisation of data related to the different transportation means, as envisaged by the MaaS project, will be extended to the entire inhabited area. The strategies also considered the contribution to reducing emissions linked to the increase in registrations of zero-emission vehicles (Battery Electric Vehicles) or near-zero-emission vehicles (Plug-in Hybrid Electric Vehicles), with a penetration of electric vehicles of around 17% for passenger cars and 10% for commercial vehicles, based on the PNIEC 2024 estimates, and that linked to smart working.

## 5.3 Power grid adaptation and resilience

A priority strategy to enable climate neutrality concerns the retrofitting of the electricity grid to new adaptation and mitigation scenarios. In fact, on the one hand there is an increase in the frequency and intensity of the impacts of heat waves and heavy rainfall on the grid and the risk of blackouts. Yet, on the other hand, the progressive electrification of building and vehicle heating systems will lead to an increased demand for energy from the grid and flexibility, as the deployment of renewable energy plants and storage systems increases. To this end, Areti's business plan envisages strengthening its resilience with investments in the electricity distribution network, the installation of storage systems and the replacement of ageing lines.

## 5.4 Energy and social regeneration of urban areas

The Climate City Contract is intended to pursue the ongoing process of urban regeneration made possible by Recovery Plan resources, with the aim of reducing energy consumption in homes and climate-changing emissions, increasing the quality and identity of urban spaces, the presence of services for citizens and social and cultural activities, working from the suburbs that are most prone to social and environmental problems, with the goal of tackling growing energy poverty. The aim is to pursue these projects in neighbourhoods based on the concept of the '15-minute city' concept, so that all services essential for a good quality of life are located close to homes. The focus on the quality of public spaces and their liveability will be linked to the goal of climate adaptation of public spaces and housing, rethinking them to reduce the impact of heat waves and extreme phenomena on people's lives, enhancing the presence of green spaces, water, materials with a greater albedo effect, and improving the management of rainwater to enhance its recovery and reuse, while reducing the impact of heavy rains. These interventions in peripheral urban areas are intended to demonstrate that climate transition can change life for the better for all citizens in every neighbourhood.

## 5.5 Sustainable waste and material management

The Climate City Contract aims to strengthen and complete the full redesign of the waste management system put in place in recent years, to overcome a system that strongly affects air pollution and greenhouse gas emissions, as it hinges on the transport of all categories of waste outside the municipality, leaving no plant capacity within the municipality. The goal is to give continuity to the interventions currently underway, with a strategy to 2030 that focuses on strongly reducing the production of the unsorted fraction - through industrial agreements, eco-design, information campaigns directed at citizens - and pushing for recovery on an increasingly articulated range of reuse and recycling supply chains, to be directed towards plants which will be built and integrated in the metropolitan area's production districts. The municipal administration and the system of participated companies will adopt Green Public Procurement models for all tenders with criteria that privilege materials from recovery, reuse and recycling. With the planned increase in separate waste collection in the coming years, a further increase in the amount of organic waste to be treated can be expected, and so the possibility of building more bio-methane plants.

## 5.6 Green Procurement

A further strategy implemented in the Climate City Contract concerns green energy and green public procurement. The dialogue process with stakeholders made it possible to highlight the many actions planned to purchase green energy with a Guarantee of Origin to cover part of the electricity consumption of the tertiary sector and companies. The intention is to support this path on the part of companies and the public administration, with Roma Capitale's commitment to expand the minimum environmental

criteria provided by Italian law and Green Public Procurement in all tenders and also in the purchase of electricity from the grid.

# 6 Principles at the heart of the path to climate neutrality

## 6.1 Climate Governance Innovation

Climate neutrality is a goal that engages every sector of the administration across the board and affects every programming and planning tool, as well as the relationship with European, national and regional institutions, with the Metropolitan City and municipal structures, and with stakeholders. The collaboration between the structures of the Municipality, the Metropolitan City, the Region and the Ministries, that with the various bodies involved in the process, the identification of shared objectives and courses of action, the comparison of choices with all economic and social actors, and the continuous and transparent monitoring of results all represent decisive factors for effective governance and the achievement of climate neutrality targets. Work will be carried out on this point, reaffirming the central role of the Climate Office and the Transition Team in a co-designing and listening logic established at the beginning of the pathway to neutrality.

## 6.2 Integrated Approach to Climate Mitigation and Adaptation Policies

The climate crisis acceleration is manifesting its effects in Rome, as in every part of the world, with increasingly evident economic, social and health consequences. The Adaptation Strategy approved by Roma Capitale following a process of stakeholder engagement highlights the growing risks and impacts in a 2050 scenario, identifying priorities for action and measures. Within urban areas, only an integrated approach to climate adaptation and mitigation can address complex problems and achieve co-benefits from interventions. In **neighbourhoods**, this includes integrated design to reduce the impact of heat waves, enhancing the contribution of greenery, water, shade and wind to the microclimate and thus reducing cooling needs. In strengthening the resilience of energy, rail, road and water **networks** that are indispensable for both adaptation and climate mitigation. In **urban forestation processes**, where the city's plan to plant more than 650,000 trees by 2026 and to reach one million by 2030, it aims to produce results in terms of reducing heat in the city and capturing $CO_2$ through careful selection of the areas where the urban heat island effect is most significant, planting the most suitable species and also increasing shading. In the **production districts**, starting with those of Santa Palomba and the Tiburtina Valley, the aim is to promote, in cooperation with the business system, innovation in the management of energy and water networks, reduction of consumption, self-production of energy from renewable sources, efficiency and integration of management systems, recovery and reuse of natural resources. In strengthening the **agricultural system** in a city unique in Europe where half of the land is cultivated, the aim is to push for crops and management models capable of adapting the land to scenarios of prolonged heat waves and drought, and of recovering and reusing meteoric water, but also to promote the spread of renewables and their careful integration to support farms and the network of urban gardens.

## 6.3 An Inclusive Transformation of the City

The transition to a zero-emission energy model must concern all citizens and every part of the city. For this reason, transformation projects of neighbourhoods and buildings, public spaces and infrastructures for the climate transition will place people and communities at the centre, starting with the most fragile segments. Rome is a city with a huge territory but with a strong neighbourhood dimension, with a widespread fabric of associations and a protagonist of multiple cultural and social activities, which

manage green and cultural spaces, urban gardens that are crucial to involve in the journey of energy transition. Today, new opportunities can be found in the sharing of energy produced by solar plants in neighbourhoods, with plants capable of directly producing energy for households and activities and of exchanging that in access with others living in the same neighbourhood or urban area. The municipality is working on **Energy Communities** precisely in this direction with the approval of a new regulation that promotes a vision in which energy sharing becomes an opportunity to realise environmental and social projects, supporting households in energy poverty. The Climate Adaptation Strategy has identified the neighbourhoods where the most critical issues with respect to heat wave impacts, through epidemiological studies and the integration of data on the social situation, average age, and the deteriorating condition of buildings. This is where it will be a priority to intervene and where, moreover, any intervention to reduce energy bills generates the greatest benefits, affecting distressed households. At the same time, it is necessary to promote adaptation and mitigation projects that improve the liveability of squares, parks, and streets. In recent years, Rome has already seen a separation between the economic growth curve and the $CO_2$ emission curve. Since 2003, emissions have been reduced by 34.8% against a 29.5% increase in GDP. At present, the challenge is to ensure that not only do these two curves move further apart, but that this change allows inequalities to be overcome and helps precisely those families who are struggling the most to reduce their energy expenditure. An inclusive approach in which no one is left behind is the most effective in forging acceptance of the energy transition, making people understand its economic and social as well as environmental benefits.

The methodology used for citizen pathways during the drafting and sharing of the Adaptation Strategy will be the chosen methodology to implement present and future social innovation and governance pathways also within the CCC and towards climate neutrality to 2030. **Such an ambitious, articulated and complex process requires a strong involvement of social and economic actors.** To accompany and support the choices made and the planned mitigation and adaptation actions, to broaden participation to other economic, industrial and social actors. The discussion on the strategies and actions envisaged by the Climate City Contract will be organised in **working groups** and will allow the feasibility to be verified and proposals to be accepted, and opportunities to improve the effectiveness of the envisaged policies to be explored in the various areas and sectors. The processes of stakeholder **engagement** will be increasingly cross-referenced and intertwined, due to the added value that an integrated approach can bring in addressing the problems and needs of neighbourhoods where the impact of heat waves and flooding is getting more and more relevant, involving and sharing with the city's actors the path undertaken and improving its effectiveness.

# 7 The process towards climate neutrality

The Climate City Contract's work has shown that in a city like Rome it is possible to achieve ambitious climate neutrality targets. As we should emphasise, the planned interventions are all verified and with widespread technologies, technically feasible as well as the strategies identified to accelerate the processes. The challenge is to make sure that this horizon of acceleration towards decarbonisation and change in the city is really possible and that the planned choices do not encounter obstacles along the way, that costs and benefits and barriers to be overcome are clear. That intense cooperation between all the institutions and bodies involved be initiated, so as to guarantee adequate resources for investment, support for the structures involved, and the dissemination and sharing of experiences with the many municipalities that would now like to accelerate in this direction.

Decarbonisation is a process of city innovation and change that will involve periodic verification of results, annual monitoring of emissions trends, updating and integration of actions on the basis of new opportunities that may open up to accompany the acceleration of emissions reduction.

Such ambitious and cross-sectoral work inevitably requires **new studies and in-depth investigations to identify more effective solutions and opportunities, in a path of continuous improvement and learning.** For what has been done with the Climate City Contact in terms of analysis and intervention scenarios should not end with the approval of the tool if the targets set are to be reached. It will in fact be necessary in the coming years to deepen, for example, intervention scenarios and partnership models for financing that will help overcome the limits of the funding available for the planned interventions. Moreover, simulations of the impact that the dissemination of certain technologies could have in strategic sectors, such as construction and production from renewable sources, mobility, management of the electricity distribution network and storage systems, and the possible contribution of $CO_2$ absorption from forestation measures, will be indispensable.

To complement the CCC the following is planned:

- The presentation in 2025 of a study by Enea on the decarbonisation potential of Rome's building stock in the scenario set by the European EPBD;
- The submission in 2025 of a study by AESS on the penetration potential of photovoltaic solar energy on roofs, parking lots and agricultural areas;
- The presentation in 2025 of a study on green jobs in Rome and the potential in the Climate City Contract scenario, with the aim also of identifying training needs.
- The launch of a study on the decarbonisation potential of Rome's industrial districts, with a view to innovation in the management of electricity and water networks and the efficient use of recovery, reuse and sharing systems.
- The launch of a study together with the Metropolitan City of Rome Capital on the role of green assets and the ecological network for climate change adaptation and mitigation;
- The promotion of a study, in collaboration with Unindustria, on the innovation potential of Rome's production districts on energy and water to reduce consumption, strengthen recovery and reuse, and network integration.
- The opening of an expression of interest for research and application projects on the potential of low-enthalpy geothermal energy for the thermal needs of residential areas and production activities.

Each study and proposal will be discussed among the city, interested stakeholders and the research community, as in the case of the Climate Adaptation Strategy.

# 8 Barriers and challenges for the implementation of the Climate City Contract

Such an innovative process inevitably faces **barriers** in its path that must be overcome in order to avoid delays in implementing such an important and strategic perspective and that must turn into **challenges** for the work of the Climate City Contract in the coming years. Decarbonising a city like Rome will depend first and foremost on the ambition and effectiveness of the Municipality's programmes and actions, yet these are framed within **an articulated system of powers and competences.** In Italy, the regulatory powers necessary to have a regulatory framework projected towards decarbonisation are in the hands of the State and the Regions, while funding is also in the hands of the State, primarily, and in part of the Regions.

## 8.1 Resources to finance decarbonisation

The achievement of the Climate City Contract objectives requires significant investments in the sectors involved, with different specificities and features as, depending on the actors involved (public or private), the technologies and incentives available, they will allow a return on investments with different timeframes through management savings. Part of the interventions will need direct state and European non-repayable resources for public interventions, or incentives for private individuals, while others with no incentives will already be competitive but will require credit access mechanisms for investments.

### *Renewable Sources*

The distribution of photovoltaic plants in the territory has gone from 13,007 plants installed at the end of 2019, the year of the baseline inventory, to 21,846 in December 2023 (GSE data). Despite the considerable growth in recent years, also shown by the data described above, the potential for the installation of photovoltaic systems in the municipal area, especially on buildings, is still significant.

For the installation of solar power on the roofs of buildings in Rome, on the shelters of the largest car parks and for a share of agrivoltaic plants according to the maximum potential covered by the study carried out for the Climate City Contract, the total estimated investment is about 5.5 billion euros (Ref. Investment Plan).

The incentive system currently in force allows investments by households and businesses to be financed up to 50%, through tax deductions, and provides incentives for energy communities and collective self-consumption configurations in line with the European Directive 2018/2001.

Additionally, **the barriers** to RES plant development concern low-income households, which cannot benefit from incentives due to the absence of income to be deducted, and more generally in the access to credit, which finds issues compared to the guarantees required for investments in the direction of decarbonisation. Large-scale agrivoltaic and photovoltaic plants to cover parking lots, on the other hand, are now in a grid parity in terms of price-production, so most frequent barriers they face are related to authorizations and access to credit.

To make the 2030 objectives concrete, it is important to give continuity and effectiveness to incentives, simplify procedures, solve issues for ineligible families and introduce a fund for access to credit at subsidized rates for this type of intervention.

The knowledge of the photovoltaic potential, both in terms of kWp and related to the most suitable places for installations, is a great opportunity for greater development of this renewable source in the territory.

RES installation is associated with the development of the CACER (called CERC – Capitoline Renewable Energy Communities in Rome) which put in place the first concrete steps just as this plan was being written. The development of Renewable Energy Communities is an effective solution to reduce energy poverty and fight inequalities, and a concrete response to the energy prices' fluctuations which imply higher bills.

**Authorization** barriers are also an issue face by the Capitoline Municipality. The installation procedures are often complex due to the national superintendence which defines limitations and to the legislation on suitable areas which presents strong critical issues for the development of photovoltaics and agrivoltaics systems. The Municipality will simplify the procedures for installing solar panels on the roofs of buildings, as required by Resolution No. 402 approved in December 2022, implementing a national law approved in 2022, in order to reduce one of the main barriers to access in a city where there is a widespread stratification of limitations.

Strong opportunities are given by new technologies (e.g. vertical and/or chromatic panels) and by the increasing development of innovative projects. An example of this is the San Giovanni Addolorata hospital in Rome with its flagship project, also presented on various national working tables, for the installation of a photovoltaic system located on buildings subject to specific limitations.

### *Energy efficiency of the private building stock*

The planned energy requalification objectives for the building stock - private residential buildings, public social housing blocks, tertiary and industrial buildings, and public buildings - can be estimated at a total expenditure of about EUR 19.17 billion, which concern efficiency upgrades on the building envelope, the reduction of transmittances, and the efficiency/electrification of thermal systems; as far as the tertiary and industrial sectors are concerned, the interventions envisage the reduction of methane, fuel oil and diesel oil consumption in the sector through interventions on the building envelope, systems, and the electrification of overall consumption.
**Barriers** to the speeding up of interventions are to be found in the incentive systems in force, currently being reviewed by the government, which cover a share of the investment for private interventions but do not reward separately the performance achieved in terms of $CO_2$ and are inaccessible to low-income households (the individuals with insufficient earnings or 'incapienti' who have no income to declare). As with photovoltaics, households and companies face problems in accessing credit for financing this type of intervention.
As regards the assets of Roma Capitale, it can be estimated that more than half of the buildings (starting with schools, offices, social housing) could be upgraded with the incentive systems in force (including the thermal account, which covers 65% of the expenditure of efficiency-enhancing interventions) and through public-private partnerships for upgrading and management through tenders and Energy Performance Contracts. For the remainder, the structures' static and decay problems are such that state resources are needed to enable the interventions. A system of access to credit at subsidised rates must also be introduced for the financing of energy efficiency measures.
To realise the 2030 targets, it is necessary to introduce, within the framework of the National Plan for the Renovation of Buildings, provided for by the Energy Performance of Buildings Directive (EPBD), a system of incentives that transparently and progressively rewards the reduction of emissions over a multi-year horizon, and a fund for access to credit at subsidised rates for this type of intervention.
To ease the existing barriers, given not only by the economic difficulty and access to incentives for citizens but also by a need for cultural change that can facilitate the electrification of consumption in private households, Roma Capitale is moving towards several parallel directions while also creating opportunities: thanks to ENEA, a study was carried out on the incentives and tax breaks related to energy efficiency in the area. These results show the extent to which the measures are being implemented and serve as a starting point for future projections and scenarios in the private housing sector.

The Italian Government is in the process of updating the National Integrated Energy and Climate Plan. This represents an occasion for the entire country but also for Roma Capitale which, together with the other 8 Italian 'Mission Cities', has presented specific observations and suggestions addressed to private citizens and the entire urban ecosystem.

### *ERP Energy Requalification*

The stock of public housing managed by the Municipality and Ater will be the priority in the redevelopment interventions for both social and energy reasons, given the current condition of abandon which characterize the structures. Today there is no incentive system that can accelerate these interventions, after the weakening of the Superbonus and given the shortcoming of the Thermal Account. To make these interventions possible, a guarantee fund is needed to access the credit at subsidized rates for the energy redevelopment of buildings, the installation of solar panels and the creation of energy communities, which would allow interventions to be carried out in neighbourhoods and buildings where low-income families live.

The social housing heritage of Rome is extensive with about 25,000 dwellings owned by the municipality by itself, to which are included those owned by the Lazio Region and the housing of individual citizens who have purchased ownership over the years. The large number of dwellings and the plurality of subjects involved does not facilitate the decision-making process necessary to put into practice efficiency and energy saving measures.

Another barrier is the **lack of knowledge** of consumption and the state of the social housing units. An opportunity, however, is drawing by the study which is currently carried out for the Municipality of Rome Capitale on the mapping of social housing buildings. The outputs will give a more detailed picture about the structures and detailed information necessary to carry out future project of renovation on energy saving and RES production.

A further opportunity is given by the increasing access to PPP – Public-Private Partnership contracts which, if applied to social housing buildings' renovations, could lead to a boost towards the energy requalification of this complex category of real estate assets.

The energy redevelopment of public housing assets has been identified as one of the priority strategies for Rome Capitale.

### *Sustainable Mobility*

For the implementation of the interventions planned by the Sustainable Urban Mobility Plan of Rome - i.e. the construction of line D, the extensions of lines A and B, the construction of the seven tram lines and the adjustments of the existing lines - it is estimated that there will be a need for about 15 billion in investments in the coming years.
Specific and additional resources should be allocated to strengthen the current inadequate public transport service that are made available through the National Transport Fund (which allocates 40% less per capita allocations than in Milan), in order to increase the frequency of subways, buses and trams in circulation: the estimation for the city of Rome requires almost 160 million euros per year by the Ministry of Transport as part of the national transport fund.
For what concern the private vehicle fleet, the replacement included in the CCC's actions and strategies are related to the renovation of private cars and commercial vehicles with electric vehicles which leads to an estimated cost of 13.6 billion euros.

### *Electricity distribution grids*

The electricity distribution grid operator Areti, estimates a need for additional investments over and above those currently envisaged in the business plan of EUR 3.8 billion up to 2030 to ensure the resilience of the network to increasing climate impacts, through interventions to recover the obsolescence of the network, the replacement of the oldest parts, and EUR 1 billion for the introduction of storage systems for peak electricity demand, necessary to ensure the flexibility of an increasingly distributed and articulated system in terms of production, storage, consumption.

### *Benefits for citizens and businesses thanks to decarbonization*

Considering the whole range of buildings, the public and private ones, the institutional ones, the tertiary and the industrials - the energy efficiency measures presented in the Climate City Contract would lead to a significant reduction in **gas consumption**, with savings in bills estimated at current prices of about **600 million euros** per year.
On the other hand, it is necessary to consider an increase in consumption due to the **electrification** of heating systems and the production of domestic hot water equal to **6%** for an expense of about **120 million euros**.
At the same time, developing the potential of solar photovoltaic that can be installed in Rome generates direct benefits in self-consumption, sharing in energy communities, and selling to the grid. At current market prices, the valorisation of **electricity production from photovoltaics** (savings in bills from self-consumption and transfer of excess energy to the grid) can generate an estimated economic value of around **€600 million** per year.
**Overall, it can be estimated a reduction in energy expenditure of around 1 billion euros for the citizens and businesses of Rome** who, moreover, would no longer be subject to the fluctuations in gas prices on the international market. It should also be considered that the investment expenditure is calculated on the current data available about technologies' prices which are constantly uncertain and on the prospects of increases in efficiency for solar panels, storage systems, heat pumps.

## 8.2 Ancient Rome, the archaeological finds

Rome, the Eternal City, is famous for its rich history and cultural heritage. However, this same historical richness implies unique challenges on the path to climate neutrality, especially for the transport sector.

During construction and infrastructure development work, important archaeological finds are often discovered which cause delays in construction projects and create barriers to mobility.

For example, during the works for the construction of the new Piazza Pia, archaeological finds were found that required a delay in the project timeframe[1]. In another case, during excavations for the new water system in the Appio Latino district, three mausoleums were discovered along the ancient Via Latina. Despite these challenges, Rome is trying to find a balance between infrastructural development and the preservation of historical heritage. For example, the city is working to integrate archaeological finds into urban design and to use innovative technologies to reduce the impact of development projects on historical heritage.

Furthermore, a key point for Rome would be to act directly in these cases which are currently mainly linked to the Ministry of Culture which has direct responsibility and decision-making power over the protection, enhancement and enjoyment of the national cultural heritage.

[1] Also in order to comply with the construction deadlines dictated by the funding received.

In conclusion, Rome's path towards environmental sustainability is a complex and challenging journey, but also full of opportunities. Each archaeological discovery represents a window into the city's past, enriching the urban development with new historical and cultural connections.

## 8.3 Building strong institutional cooperation

A further barrier/challenge is related to the definition of a strong institutional cooperation which brings cities at the centre of the debate. The Climate City Contract is the tool that can make it possible and can accelerate the achievement of the objectives of the European Green Deal starting from the cities through a strong and virtuous integration with national policies. In fact, the urban areas are responsible of the highest demand for energy, transport and materials and it is where integrated interventions can be carried out to enhance and multiply the contribution of renewable sources and energy efficiency, in neighbourhoods and buildings where ambitious results in terms of climate mitigation and adaptation can be achieved. In Italy, reasoning of this type is especially valid if it refers to Rome, the municipality with the largest population, the largest number of private and public buildings and by far the largest territory of a unique Municipality in the whole country.

To become credible, this hypothesis requires that cities, and in particular the larger ones, are involved in the definition of policies and plans through a co-design of priorities and actions, in order to make the results more effective. The State and partly the Regions have still the competence on financing the energy transition, as well as the regulatory power to simplify the approval procedures for projects concerning energy efficiency and renewable energy plants. In addition, an important part of Rome'**s public heritage is owned by the State** (Ministries, Public Bodies, military headquarters) **and a part by the Lazio Region** (ASL, over 50 thousand public housing units) so it will be important to share the energy redevelopment objectives. An involvement of cities and collaboration between different institutional levels will be essential for the achievement of the objectives of the Climate City Contract. About the **PNIEC (**Integrated National Energy and Climate Plan) it is worthy to remember that while during the drafting and approval there was not the involvement of the cities, in its implementation phase it is desirable a strong collaboration if the European targets have to be achieved. In Rome, more than 60% of greenhouse gas emissions come from buildings, so an important area of institutional cooperation will have to concern the drafting by 2026, as required by the EPBD (Energy Performance of Buildings Directive), of the **National Plan for the Renovation of Buildings** (both residential and non-residential and public and private) to identify priority interventions in terms of energy consumption and issues of households, in order to achieve the decarbonisation by 2050. Furthermore, since cities are carrying out a just transition in to order to face the greatest social and economic issues, it is necessary a debate on the National Plan that the Italian government should approve to carry out the measures and invest the resources of the **Social Climate Fund** to lower energy poverty and the strengthening sustainable mobility for the benefit of the poorest subjects,  and which must involve indeed the suburbs of large Italian urban areas.

## 8.4 Training for green jobs

All the analyses confirm the significant potential for the creation of new jobs in Rome in the energy and mobility sector through interventions that aim to enhance the efficient use of energy for cooling and heating homes, self-production and sharing from renewable sources, the retrofit of buildings and the integrated management of plants and the territorial supply chains. The boost of the energy and digital transition, which are now deeply on-going, will depend on the ability to train workers with the technical skills required for the new professions that are taking hold in those sectors which are experiencing valuable and rapid transformation. To strengthen this perspective, it is necessary to put in place a strong institutional collaboration with the Lazio Region (which is entrusted with the competence in the field of

vocational training), the Ministry of Labour and other competent institutions, business and workers' associations in order to identify the gaps in terms of skills and competences to be filled, the interventions necessary to update, strengthen and improve the training offer.

# 9 Signatures

Stakeholder signatures are collected below as extracts from the first pages of the portfolio of actions. In fact, when they presented the actions cards, stakeholders signed directly and specified their own climate strategy to 2030. The contact details of the contact persons filling in the forms were blanked out for privacy reasons, as much as the information received in “confidential mode” from the stakeholders.

Prior the Mayor of Roma Capitale and the stakeholders’ signatures, a table representing stakeholders participating to Roma Capitale CCC is presented below.

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| A Sud Ecologia e Cooperazione O.d.V. | Non-profit, NGO and other associations | Ecological organization that deals with the environment, territorial development through training and information through programs to raise awareness of the districts and suburbs. |
| ABB S.p.a. | Private companies, enterprises, and cooperatives | World leader in the automation and electrification technology of engineering systems applied to industry. The company's 2030 strategy involves the Rome's headquarter with the aim of reducing Scope 1 and 2 emissions by 2030. |
| ACEA ATO 2 S.p.A. | Controlled or participated from the Municipality | Controlled by the ACEA SPA group (controlled by the Municipality of Rome), it manages the integrated water service combining quality of service, sustainable management of the water resource and respect for the environment. |
| Aeroporti di Roma S.p.A. | Private companies, enterprises, and cooperatives | Company that manages the Roman airports of Fiumicino and Ciampino with the goal of achieving net zero emissions of Scope 1 and 2 by 2030. |
| Agenzia del Demanio | Controlled or participated from the State and other Institutions | Public company that manages the real estate assets of the State. |
| Aisfor S.r.l. | Private companies, enterprises, and cooperatives | Agency for Innovation, Development and Training which operates in the field of training, innovation and business development through training projects aimed at local authorities and support for the establishment of REC. |
| Almaviva S.p.A. | Private companies, enterprises, and cooperatives | Leading company in ICT field and in the development of new integrated and sustainable business models, committed in the digitalization of public and private services. |
| Ama S.p.A. | Controlled or participated from the Municipality | The Municipality is the single member of the company which deals with the collection, transport, treatment, recycling and disposal of waste. |
| Angelini Real Estate S.p.A. | Private companies, enterprises, and cooperatives | Private company which deals with the real estate development and investments in the Real Estate sector in the territory of Rome. |
| Areti S.p.A.* | Controlled or participated from the Municipality | Subsidiary of the ACEA group which deals with energy distribution and control of electricity networks. |
| ASL Roma 1* | Public Administration | Public legal entity, created in 2016 according to the healthcare programs of the Lazio Region 2013-2015. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| ATAC S.p.A. - Azienda per la mobilità | Controlled or participated from the Municipality | The Municipality is the single member of the company which deals |
| Autostrade per l'Italia S.p.A. | Controlled or participated from the State and other Institutions | National controlled company since 2021 working with the concession of motorway sections, as well as the performance, the mainntainance and the development of the whole infrastructure. |
| AzzeroCO2 S.r.l. | Private companies, enterprises, and cooperatives | Founded by Legambiente and Kyoto Club, the company provides consultancy to companies to create shared well-being for local stakeholders, increase the value of their brand and reduce environmental impact. |
| Banca di Credito Cooperativo di Roma Soc. Coop. | Credit institutions | A local banking institution whose mission is to promote the sustainable growth of the territory and the well-being of the citizens and businesses. |
| Banca d'Italia | Controlled or participated from the State and other Institutions | Central Bank of the Italian Republic, established under public law regulated by national and European legislation commited in reducing its environmental and carbon footprint since 2008, with the Environmental Report updated annually. |
| Banca Popolare Etica S. Coop. p.A. | Credit institutions | A local bank whose founding principles include putting finance at the service of people, for the construction of a fair and inclusive society |
| BASF ITALIA S.p.A.* | Private companies, enterprises, and cooperatives | BASF is a global leader in the chemicals industry with operations in more than 50 countries worldwide and an headquarter of 45,000 meters square in Rome. |
| Birra Peroni S.r.l.* | Private companies, enterprises, and cooperatives | Italian beer company, controlled by the Japanese multinational Asahi Breweries since 2016. |
| Biscotti P.Gentilini S.r.l. | Private companies, enterprises, and cooperatives | Historical Italian brand for the production of biscuits and baked goods whose main production site is located in Rome. |
| Cassa Depositi e Prestiti S.p.A. | Controlled or participated from the State and other Institutions | Public controlled institution which support through financial tools the major structural project for the country and the local economic development. |
| Centro Agroalimentare Roma S. Coop. p.A. | Controlled or participated from the Municipality | 27.8% owned by Roma Capitale, it is one of the most important European structures for the marketing of fruit, vegetables and fish products |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| CER Confartigianato Lazio | Private companies, enterprises, and cooperatives | Association of artisans and small entrepreneurs that offers numerous services such as access to subsidized credit, training, registration in registers and roles, legal assistance, union representation and labor policies, environment and hygiene, safety and quality |
| Cinecittà S.p.A. | Controlled or participated from the State and other Institutions | Italian public company, with the unique shareholder as the Ministry of Economy and Finance, commited in the installation of RES systems and the renovation of buildings and in the more sustainable management of stage materials and circular products. |
| CNR - Consiglio Nazionale delle Ricerche* | Research institutions and Universities | Italian public research body which promotes scientific, technological, economic and social progress. |
| Coopservice S. Coop. p.A. | Private companies, enterprises, and cooperatives | The company deals with the management of facility services for offices, hospitals, schools, museums, airports, stations and shopping centres. |
| Edison Next Government S.r.l. | Energy sector operators | Italian company active in the sectors of electricity and gas supply and sales, controlled by the French group Electricitè de France. |
| Elettronica S.p.A. | Private companies, enterprises, and cooperatives | Company that operates in the defense sectors, particularly in electronic warfare systems; the main offices are located in Rome. |
| ENEA | Research institutions and Universities | National agency for new technologies, energy and sustainable development, it deals with research in the energy and environmental fields to support sustainable development and competitiveness. |
| Enel Sole S.r.l. | Energy sector operators | Company that operates on behalf of the Enel group in the public lighting sector which has been committed to using LED technology in public lighting since 2009. |
| Enel X Italia S.r.l. | Energy sector operators | Global business line of the Enel group which operates in the field of energy supply, energy management services and public and private electric mobility |
| Enel X Way Italia S.r.l. | Energy sector operators | Business line of the Enel group that promotes innovative solutions in the e-mobility sector |
| ENGIE Servizi S.p.A. | Energy sector operators | French multinational operating in the production and distribution of natural gas, renewable energy and services sectors. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| ENI S.p.A. | Energy sector operators | Company 30% owned by the State (through MEF and CDP), active in the sectors of oil, natural gas, chemistry, biochemistry, production and marketing of electricity from fossil fuels, cogeneration and renewable sources. |
| Envision S.r.l. | Private companies, enterprises, and cooperatives | ICT consulting company that designs, following a circular economy model, high value-added technological services. |
| Fabbrica San Pietro | External institutions | Company that deals with and manages the assets related to the Basilica of St. Peter for the conservation and decoration of the building. |
| FAO* | External institutions | United Nations agency responsible for ensuring the safety and sustainability of agri-food systems. |
| FASSA S.r.l (Fassa Bortolo) | Private companies, enterprises, and cooperatives | Italian company leader in the production of adhesives, sealants and other auxiliary products for the building industry. |
| Fondazione Banco dell'energia Ente Filantropico* | Foundations | Non-profit association created with the aim of supporting individuals and families who find themselves in economic and social issues. |
| Fondazione Bioparco di Roma | Foundations | Zoo for the care, protection and enhancement of species belonging to wild fauna and flora. |
| Fondazione Marevivo - ETS | Foundations | Environmentalist association that deals with the protection of marine biodiversity through awareness-raising actions and involvement of citizens and its members |
| Fondazione MAXXI | Foundations | National Museum of 21st Century Arts managed by the Ministry for Cultural Heritage and Activities. |
| Green Building Council Italia | Non-profit, NGO and other associations | Green Building Council Italia is a non-profit association whose members are the most competitive companies and the most qualified Italian professional associations and communities operating in the sustainable building field. |
| Greenpeace Onlus | Non-profit, NGO and other associations | Greenpeace is engaged in climate change activities, research and support through events and campaigns. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| Hotel Eden S.r.l. | Private companies, enterprises, and cooperatives | Hotel chain, active in Italy with around an hundred locations. |
| IKEA Italia S.r.l. | Private companies, enterprises, and cooperatives | Swedish multinational company specializing in the sale of furniture and furnishing accessories, active in Italy since 1989. |
| INPS - Istituto Nazionale della Previdenza Sociale | Controlled or participated from the State and other Institutions | Social security institution of the Italian public pension system. |
| Intecs Solutions S.p.A. | Private companies, enterprises, and cooperatives | Company that designs and develops software systems for the Automotive, Defense, Aerospace, Traffic Control, Railway, Finance sectors. |
| ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale | Research institutions and Universities | The Higher Institute for Environmental Protection and Research is a public research body controlled by the Ministry of the Environment |
| Istituto per il Credito Sportivo | Credit institutions | Bank for the promotion and development of Sport and Culture with the institutional mandate of promoting growth according to the principles of sustainability, social responsibility and intergenerational equity. |
| Istituto Poligrafico e Zecca dello Stato S.p.A. | Controlled or participated from the State and other Institutions | Italian State company that mainly deals with the publication documents, coinage and web-based products related. The new guidelines for the office management and the process production grant active policies for carbon neutrality. |
| Kyoto Club | Non-profit, NGO and other associations | Non-profit organization made up of companies, institutions, associations and local administrations, committed to achieving the objectives of reducing greenhouse gas emissions undertaken with the Kyoto Protocol, the Paris Agreement and the European Green Deal. |
| Leonardo S.p.A. | Controlled or participated from the State and other Institutions | Italian company active in the defence, aerospace and security sectors. Its largest shareholder is the Italian Ministry of Economy and Finance. |
| MAIRE S.p.A. | Private companies, enterprises, and cooperatives | Italian company leader in the engineering, technology and energy sector with specific skills in plant engineering, green chemistry and the development of technologies for the ecological transition. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| NETGROUP S.p.a. | Private companies, enterprises, and cooperatives | ICT company committed with the digitalization and development of the IT solutions for the public authorities. |
| NH Collection Hotels | Private companies, enterprises, and cooperatives | Spanish hotel chain, active in Italy with around a hundred locations. |
| Orto Botanico di Roma/Polo Museale* | Research institutions and Universities | The current Botanical Garden extends over 12 hectares and preserves naturalistic varieties from all over the world as well as centuries-old trees and greenhouses where unique species are preserved. |
| Poste Italiane S.p.A. | Controlled or participated from the State and other Institutions | Public company operating in the sectors of postal, insurance and financial services, telecommunications and telegraph services and recently also energy (electricity and gas). It is controlled by the Ministry of Finance and CDP which together hold 65% of the shares. The Group, in line with its adherence to the Paris Agreement and the New Green Deal. |
| Radio Rock - Q S.r.l. | Private companies, enterprises, and cooperatives | Active local radio station founded in 1985. |
| Rete Assist - ETS | Non-profit, NGO and other associations | The association is a point of reference at national level for all those involved in promoting the fair energy transition and in reducing energy poverty. |
| Rete Ferroviaria Italiana S.p.A. | Controlled or participated from the State and other Institutions | Group that manages the national railway infrastructure and define the development plan of the national mobility in agreement with the Ministery. |
| Risorse per Roma S.p.A. | Controlled or participated from the Municipality | 100% controlled by Roma Capitale, it supports the Capitoline Administration in the planning, territorial design and transformation sectors and in management support for the projects of the construction management of the urban planning department |
| SACE S.p.A. | Controlled or participated from the State and other Institutions | Italian insurance-financial group, directly controlled by the Ministry of Economy and Finance, specialized in supporting businesses and the national economic development. |
| Save the Children Italia - ETS | Non-profit, NGO and other associations | Independent international organization devotes to the promotion of childhood and adolescent rights and the promotion of sustainable development, in line with the objectives of the United Nations Agenda 2030 and the European Plan for Energy and Climate. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| Sensoworks S.r.l. | Private companies, enterprises, and cooperatives | IT company for software development and complex and integrated data management. |
| Servier Italia S.p.A. | Private companies, enterprises, and cooperatives | French pharmaceutical company established in Italy since 1982 with headquarters in Rome. |
| Siram S.p.A. | Energy sector operators | French multinational which operates in three main areas of services and utilities traditionally managed by public authorities: water management, waste management and energy services. |
| Sport e Salute S.p.A.* | Controlled or participated from the State and other Institutions | Italian public company that deals with the development of sport in Italy, producing and providing general services. Its unique shareholder is the Ministry of Economy and Finance. |
| Teicos UE S.r.l. | Private companies, enterprises, and cooperatives | Teicos carries out redevelopment interventions on existing buildings, on behalf of third parties and on its own initiative, with an engineering approach, oriented towards reducing times and costs also thanks to the use of innovative technologies and processes. |
| Terna S.p.A. | Energy sector operators | State-owned company (30% owned by CDP) operator in electricity transmission networks with the management of approximately 75,000 km of high voltage electricity lines |
| Toyota Motor Italia S.p.A. | Private companies, enterprises, and cooperatives | Japanese multinational automobile manufacturer. |
| Triumph Italy S.r.l. | Private companies, enterprises, and cooperatives | Communication and event organization company. |
| UniCredit S.p.A. | Credit institutions | International Italian banking group present in 18 countries worldwide. |
| Unindustria | Business associations | Unindustria promotes the development of businesses in the areas of Rome, Frosinone, Latina, Rieti and Viterbo as an hub for training, sharing and training of all the enterprises of the area |
| Università degli Studi "La Sapienza" | Research institutions and Universities | Public university with over 120,000 students and a building area of 439,000 m² just within the city. |

| Name of the signatory (organisation) | Sector/Category | Level of operation |
|---|---|---|
| Università degli Studi di Roma Tor Vergata | Research institutions and Universities | Third public university in the capital by number of students (32,000) with 13 departments in total, its own theatre and a sports stadium. |
| Università degli Studi Roma Tre | Research institutions and Universities | Public university whose main building is located in the district of the same name and occupies an area of approximately 500 hectares. |
| UrbanV S.p.A. | Private companies, enterprises, and cooperatives | The company designs and develops innovative urban mobility networks by leveraging its technical expertise and strong relationships with key stakeholders in the sector at national and European level. |
| Wind Tre S.p.A. | Private companies, enterprises, and cooperatives | Italian company operating in the telecommunications sector. |
| WWF Italia - ETS | Non-profit, NGO and other associations | International non-governmental organization for environmental protection and conservation |
| * awaiting for signature | | |