Iceland Liechtenstein Norway grants

Norway grants

Developed within M100 HUB

CLIMATE CITY CONTRACT

CITY OF BRAȘOV

(MUNICIPIUL BRAȘOV)

M100 Mirror Mission Cities Hub Romania

Inspired by the EU Mission for Climate-Neutral and Smart Cities

Aligned with the NetZeroCities approach

2035

CLIMATE CITY CONTRACT

Municipiul Braşov

DISCLAIMER

This document, which was developed through the Mirror Mission Cities Hub Romania, draws inspiration, both in its structure and content, from the methodology developed by the European Commission for elaborating the documents pertaining to the Climate City Contracts (the Climate Neutrality Action Plan, Investment Plan and Commitments) for the 112 cities which officially participate in the EU Mission for Climate-Neutral and Smart Cities.

By aligning the M100 Climate City Contract with the model set forth by the European Commission, we aim to ensure that this document is in line with European strategic priorities and directives regarding the transition towards climate neutrality.

This document was elaborated with the support of the World Bank Group with DG Region funds, as part of the Functional Areas in the EU project (https://functionalareas.eu/).

CONTENT

FIGURES

TABLES

ACRONYMS

- **ABMEE (Local Energy Management and Environmental Protection Agency - ro: Agenţia pentru Managementul Energiei şi Protecţia Mediului)**
- **ADDJB (Braşov County`s Agency for Sustainable Development / ro: Agenţia de Dezvoltare Durabilă a Judeţului Braşov)**
- **AFOLU (Agriculture, forestry, and other land uses)**
- **BMA (Braşov Metropolitan Agency for Sustainable Development / ro: AMB - Agenţia Metropolitană pentru Dezvoltare Durabilă Braşov)**
- **BTA (Braşov Transport Association / ro: Asociaţia de Transport Braşov - ATBv)[1]**
- **NERA (National Energy Regulatory Authority / ro: Autoritatea Naţională de Reglementare în Domeniul Energiei – ANRE)**
- **AVL – Automatic Vehicle Location**
- **CO2 (Carbon dioxide)**
- **CRP (Central Regional Programme)**
- **CSR (Corporate social responsibility)**
- **E.G. (For example)**
- **EU (European Union)**
- **EV (Electric vehicle)**
- **(FOV) Green Cities Forum**
- **GDP (Gross domestic product)**

[1] Former AMDDTPBV – Asociaţia Metropolitană pentru Dezvoltare Durabilă a Transport Public Braşov

- GHG (Greenhouse gas)
- GUP (General Urban Plan)
- ITC (Information Technology and Communication)
- ITS (Intelligent Transportation System)
- IUDS (Integrated Urban Development Strategy)
- IPAQ (Integrated Air Quality Plan)
- IPPU (Industrial processes and product use)
- JASPERS (Joint Assistance to Support Projects in European Regions)
- KM (Kilometre)
- KV (Kilovolt)
- KWH/M2 (Kilowatt-hour per square meter)
- M100 (Mirror Mission Cities Hub Romania)
- MW (Milliwatt)
- NBS (Nature-based solutions)
- NRRP (National Recovery and Resilience Plan)
- NGO (Non-Governmental Organization)
- PJ (Petajoule)
- PPP (Public-private partnership)
- RATBV (Brașov's Autonomous Transport Administration - ro: Regia Autonomă de Transport Brașov)
- RD (Research and development)
- RDI (Research, development and innovation)
- RES (Renewable Energy Sources)
- SECAP (Sustainable Energy and Climate Action Plan)
- SEAP (Sustainable Energy Action Plan)
- SPLT (Brașov's Local Public Heating Service - ro:Serviciul Public Local de Termoficare Brașov)
- SUMP (Sustainable Urban Mobility Plan)
- VC (Venture Capital)
- ZUP (Zonal Urban Plan)
- UNITBV (Transilvania University of Brașov, ro: Universitatea Transilvania Brașov)
- WWF Romania (World Wide Fund for Nature Romania)
- °C (Degree Celsius)

I. COMMITMENTS

FORMAL AMBITION

Briefly present (in 2-3 pages) the following aspects:

- **The local climate neutrality context, highlighting the strategic directions adopted at the local level.**
- **The significance and / or opportunities associated with developing this Climate Neutrality Action Plan, particularly in relation to the relevant European strategic priorities.**
- **The vision (and / or goal and / or objectives) and targets officially endorsed by the Climate Neutrality Action Plan for achieving climate neutrality, highlighting the planned reductions in CO2 emissions.**
- **The key priorities delineated within the Climate Neutrality Action Plan.**
- **The overall direct impact expected from implementing the interventions outlined in the Action Plan, together with the total estimated budget.**
- **The local administrations should also commit to adhering to high architectural standards for the public projects, particularly for those with significant community or environmental impact.**

LOCAL CLIMATE NEUTRALITY CONTEXT

For the last decade and even more, Brașov has been a frontrunner among Romanian cities in terms of sustainable development. Proof of this is the **"Green Capital"** title awarded by the Ministry of Environment and Forests in 2011 and the two qualifications within the **European Green Capital** award (2023 and 2024).

Brașov's journey towards sustainability and climate-neutrality began as a response to environmental challenges. Facing penalties from the European Commission due to low air quality in 2009, Brașov embarked on a significant transformation. Through concerted efforts by the Municipality, businesses, and the community, Brașov not only addressed these challenges but also surpassed targets set by the Covenant of Mayors.

Achieving a remarkable 35% reduction in greenhouse gas emissions by 2020, Brașov solidified its position as a leader in environmental and climate responsibility.

A large variety of key stakeholders already embarked on the way towards climate neutrality and already took action by either reducing their carbon footprint, by participating in specific research activities or by simply being part of the larger planning process of the municipality. The M100 initiative is thus merely an opportunity to strengthen the ties at local level and find a framework to generate synergy within the collaboration for the common goal, a climate neutral Brașov. Moreover, Brașov is teaming up with along with other key European stakeholders in the effort to make the European Union the world's first "climate neutral continent"[2]. Brașov is therefore a signatory of the EU Mission Adaptation to Climate Change Charter, part of the The Milan Urban Food Policy Pact, and was the host of the Green Cities Forum[3].

In terms of planning for climate neutrality, Brașov pioneered the establishment of an Energy Manager Unit already in 2008, being the country's first city with a large pedestrian area in the city centre that is continuously expanding. Additionally, Brașov was amongst the first cities in Romania to develop sectorial strategies supporting the wider aim of climate neutrality such as: Green Infrastructure Strategy, Velo Masterplan but also more common planning instruments such as the Integrated Air Quality Plan, Noise Map, District Heating Strategy and the Sustainable Urban Mobility Plan.

[2] Main target of the EU Green Deal.
[3] An international event bringing together key stakeholders and local community representatives to debate and accelerate the progress towards climate neutrality.

Brașov is also naturally among the greenest cities in Romania and Europe, with 83% of its territory covered by forests, parks, green areas, or greenery. Recognized by Booking.com users, Brașov ranks among the Top 10 Nature Destinations in Europe. Still, there is room for improvement, especially when it comes to the availability of public green spaces inside the city[4] and the establishment of a blue-green[5] network at municipal but also metropolitan level. The Green Infrastructure Strategy[6] thus envisions an inclusive and interconnected green space network, planned and maintained in a sustainable manner that consolidates Brașov's Green Capital identity. While already more than 72% of the public transport fleet operating only within the city is electric[7].

Public transport ridership surged from 34 to 44 million journeys between 2020 - 2023. By 2035, we aim for 75% of daily commutes to be by public transport, walking, or biking, supported by an ambitious mobility package. This will notably curb NO2 emissions, the city's only major air pollution source.

Additionally, our thorough €1.3 billion Climate Neutrality Action Plan will guide our path towards a carbon-free city by 2035.

Central to Brașov's sustainability drive is its commitment to social inclusivity, fostering open community engagement, and encouraging active stakeholder participation.

Regular citizen debates tackle concerns such as air quality, urban planning, public transport extension, sanitation, and introducing organic food in schools. Factoring citizen feedback, we have continuously expanded the public transport system, ensuring 99% of the population lives within a 10-minute walk from a stop, with 88% within 5 minutes.

[4] If forests are not taken into calculation, there are less than 5 ha of public green spaces per inhabitant.
[5] The two main rivers Graft and Timiș are still mostly covered by concrete slabs and hidden from the public.
[6] Integrated part of the Climate City Contract.
[7] 50% if metropolitan routes are considered that are getting closer to the city

Under the theme "Brașov, a mountain of possibilities", we embrace various shades of green, symbolizing our commitment to a cleaner environment. This is not just about infrastructure and technology; it's about us, the people of Brașov. We actively participate in this journey, embodying environmental consciousness.

Vision

Braşov, a mountain of possibilities

Braşov, a breath of mountain air

"Braşov, a mountain of possibilities / a breath of fresh air" expresses an urban model that optimizes resources, reduces pressure on the environment and increases the quality of life at the local and metropolitan level, leading to a 80.21% reduction in CO_2 emissions by 2035 compared to 2021.

In **2035** Braşov is a **green**, **resilient** and **competitive** city, defined by sustainable mobility, high energy efficiency, regeneration and expansion of green infrastructure, as well as the modernization of the built environment—a functional urban system that constantly generates emission reductions and improves environmental quality. Moreover, Braşov acts as a European benchmark in the integrated implementation of climate neutrality policies, demonstrating how a city can achieve high standards of sustainability through the cooperation of the administration, the economic environment, institutions and the community. The transformation is a systemic one, in which residents, institutions and economic actors are actively involved in the transition to climate neutrality.

Through our Climate Neutrality Action Plan, targeting an 80,21% reduction in Braşov's CO2 emissions by 2035 compared to 2021, we aim to inspire other cities across Europe and the globe in embracing sustainability and achieving climate neutrality.

Priorities

The Climate Neutrality Action Plan (or CCC) is a statement that Braşov is willing to accelerate its transition towards a sustainable, inclusive and smart city

- Establish a coherent network of blue-green spaces connecting all neighbourhoods to the mountain area
- Greatly improve conditions for active mobility and increase the attractivity of public transport
- Support the sustainable rehabilitation of built environment
- Increase the availability of green energy
- Improve quality of live in residential neighbourhoods make use of sustainable solutions
- Make local community an integral part of Braşov's path towards climate neutrality

GUIDING PRINCIPLES

Provide a brief overview (1 page) of the principles that directed the Climate Neutrality Action Plan's design process, as well as those that will guide its implementation and monitoring within the designated time frame.

PRINCIPLES THAT INFORMED THE FORMULATION OF THE CLIMATE NEUTRALITY ACTION PLAN

The drafting process of the Climate Neutrality Action Plan was guided by principles aimed at fostering a participatory, inclusive, and coherent transformation, benefiting all local stakeholders while also incorporating a metropolitan perspective. These principles are aligned with European, national, and local objectives and guiding directions. Furthermore, it aligns with the guidance provided by the EU Mission for Climate-Neutral and Smart Cities, by closely adhering to its standards for achieving climate-neutral goals. As such, the Climate Neutrality Action Plan is strategically designed to embrace principles that promote collaboration, equity, and efficacy. By adhering to the following guiding principles, the Plan also ensures alignment with other local objectives and strategies, while prioritising inclusive decision-making and fostering positive outcomes across diverse sectors and communities:

1. **Collaborative development principle:** Engaging all stakeholders through input, feedback collection, and integration into the final document, ensuring alignment with their needs and priorities.
2. **Climate justice principle:** Ensuring equal opportunities and addressing climate injustice, especially for the existing marginalised communities.
3. **Integration and responsiveness principle:** Ensuring integration of the Climate Neutrality Action Plan into municipal systems, while respecting citizen and local stakeholder needs and priorities.
4. **Evidence-based principle:** The content draws from existing data found in other strategic documents, analyses, studies, territorial and sectoral reports, together with official statistics.
5. **Holistic planning principle:** The actions outlined in this Plan are cohesive, harmonious, and avoid creating disparities among targeted emission domains, stakeholder groups, and community types.
6. **Convergence principle:** Promoting climate neutrality achievement while mitigating potential disparities between the Municipality and other administrative-territorial units within the metropolitan area.
7. **Coordination principle:** The Climate Neutrality Action Plan synchronises with other local strategic and sectoral documents, such as the Urban Development Strategy of the Brașov Metropolitan Area, the Sustainable Development Strategy of Brașov Municipality, the Sustainable Energy and Climate Action Plan, and the Climate Change Adaptation Plan.
8. **Vertical alignment principle:** Aligning the Climate Neutrality Plan's vision and actions with priorities targeted by relevant regional, national, and European strategic documents.
9. **Horizontal alignment principle:** Connecting emission domains with specific sectors and addressing inter-jurisdictional dimensions through integrated interventions, while also considering metropolitan-level benefits.

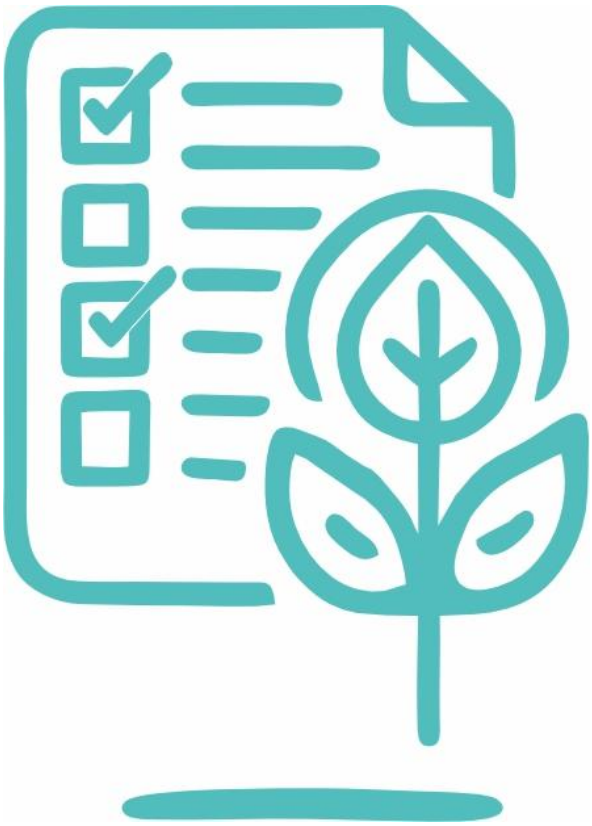
10. **Action prioritisation principle:** The criteria for prioritising proposed actions include their direct contribution to climate neutrality objectives, potential co-benefits, responsiveness to local climate challenges and identified beneficiary needs, maturity, alignment with European and national climate neutrality priorities, and availability of funding sources for implementation.
11. **Yielding co-benefits principle:** The proposed actions aim to reduce local CO2 emissions while also generating a range of social, health, economic, and ecological co-benefits.

PRINCIPLES THAT WILL GUIDE THE IMPLEMENTATION AND MONITORING OF THE CLIMATE NEUTRALITY ACTION PLAN

The implementation and monitoring phases prioritise generating benefits at both the city and metropolitan levels. Coordinating principles are guided by an open and transparent participatory framework, involving both the community and the local ecosystem. These principles are in harmony with European, national, and local regulations, while also reflecting the guidance and standards of the EU Mission for Climate-Neutral and Smart Cities. As such, the following principles set to guide the Municipality in implementing, evaluating, and monitoring the Action Plan are:

- ☐ **Responsibility principle:** Ensuring accountability among all parties to fulfil commitments and achieve emission reduction objectives while mitigating climate change impacts.
- ☐ **Multi-stakeholder collaboration principle:** Engaging all stakeholders in implementing and monitoring proposed actions, to actively involve them in the envisioned change, rather than solely as beneficiaries. This process entails fostering partnerships with public institutions, civil society, academia, and the private sector, in order to mobilise resources and expertise toward climate neutrality goals.
- ☐ **Openness principle:** Ensuring easy access and effective communication of the relevant information to the public, stakeholders, and other external relevant actors.
- ☐ **Novelty and innovation principle:** Embracing innovation to explore and adopt solutions, technologies, and methodologies that could enhance the effectiveness of climate actions. Additionally, allocating resources to support relevant research and development projects and activities.
- ☐ **Collaborative monitoring and knowledge exchange principle:** Regularly evaluating and monitoring the implementation of the Climate Neutrality Action Plan and sharing findings with stakeholders to refine and improve the process:
- ☐ Evaluation conducted systematically and impartially;
- ☐ Monitoring data and outcomes, utilising standardised assessments from credible sources;
- ☐ Periodic improvements driven by evaluation and monitoring results to support responsive actions;
- ☐ Dissemination of knowledge, for ensuring that information and expertise reach diverse stakeholders.
- ☐ **Fairness in climate action principle:** Upholding principles of climate justice, the Climate Neutrality Action Plan ensures no individual is overlooked in the journey toward a carbon-neutral city. Facilitating inclusive decision-making and offering targeted support to underprivileged groups ensures a just climate neutrality transition, leaving no one behind.

Therefore, all signatory stakeholders collectively embrace the local ambition to transition toward climate neutrality. Joint endeavours highlight the shared commitment to actively contribute to Braşov's path toward becoming a climate-neutral and smart city, while focusing on generating metropolitan-level benefits.



II. ACTION PLAN

INTRODUCTION

Briefly describe (1-2 pages) the local context within which the Action Plan is being formulated and outline the general gap it aims to address, by taking into account relevant local strategies and policies, socio-economic development factors, environmental conditions and climate considerations etc.

The formulation of the Climate Neutrality Action Plan for Brașov Municipality is driven by the long-lasting commitment to advancing environmental sustainability and quality of life. While having one of Europe's lowest greenhouse gas emissions per capita, Brașov is committed to achieving climate neutrality by 2030. Significant progress has been made at various levels, particularly in terms of green space accessibility, biodiversity protection, sustainable mobility, air quality, and renewable energy production. Brașov was among the pioneering Signatories of the Covenant of Mayors, joining in 2008's first wave. This commitment led to the development of a Sustainable Energy Action Plan (SEAP). Despite a minimum CO2 reduction target of 20%, Brașov identified a potential reduction of 32% through its plan compared to 2008. Since setting up an energy and GHG emissions baseline in 2008, the local Energy Management Unit has monitored the Municipality's performance, resulting in an even higher reduction in GHG emissions by 2020, of 35%.

Located in the heart of Romania and surrounded by the Carpathian Mountains, Brașov integrates green spaces into its urban fabric. 43.78% of its land is represented by public green areas, with 23.99% within the inner city. Brașov has the huge advantage of being surrounded by forests, which, in correlation with the public green spaces, leads to a high percentage of tree canopy cover. Additionally, 20.58% of the territory is used for agricultural purposes, blending forested patches with open grasslands. As such, each citizen benefits from 119.5 m2 of inner-city green space and forests. In addition, the city has developed a **Green Infrastructure Strategy** that targets the protection and expansion of public green spaces, improvement of private green areas, and preservation of natural habitats and biodiversity. Several brownfield sites, of former industrial enterprises, as well as former landfills, offer opportunities for reconversion into green areas, along with other green infrastructure planned to ensure easy access for all residents. The goal is for every citizen to be within a 5-minute walk of a green/blue space by 2035. Currently, 74% are within this proximity, and 92% are within a 10-minute walk.

As transportation represents the main source of GHG emission increases and air pollution, the city has formulated an ambitious package of projects in its Sustainable Urban Mobility Plan. These include the establishment of a metropolitan train system comprising four lines, transitioning the entire bus fleet to 100% electric by 2027 for inner-city public transport, expanding bus lanes by over 20 km by 2027 (with more than 10 km currently under construction), and developing an extensive cycling network spanning 80 km by 2026. Furthermore, the public transport system will be enhanced with the introduction of tram services, a trolleybus system and various boulevard pedestrianisation projects will be initiated. The development of a Park & Ride system across five locations is in line with the city's **Parking Policy**, aimed at reducing car traffic within the city, and integrated with a Mobility as a Service (MAAS) app and platform. Our city administration is also forging partnerships with major shopping malls to use their parking spaces as part of the Park & Ride system until additional public facilities are completed. We are the first city in Romania to establish a Low Emission Zone to alleviate congestion, curb air pollution, and safeguard the cultural heritage of Brașov's

Historic Centre. Notably, Brașov is also the first city in Romania to design and implement a comprehensive **Velo Masterplan**, with 10 km currently under construction, 70 km equipped with technical designs nearing completion and ready for tender, and another 25 km in the preparatory stage of feasibility studies. Additionally, two cycling training schools will be established, complemented by cycling facilities such as bicycle racks, garages, and bike-sharing stations.

At the same time, the city also faces the challenge of balancing urban development with environmental preservation. To this end, the General Urban Plan (GUP), Zoning Urban Plans (ZUP), guide spatial development and support the sustainable development of the city. The city has experienced a 9% population decrease from 1992 to 2021, alongside a significant expansion of the urbanised area by 360%. Despite the decrease in population density, urban sprawl and the associated increase in built-up areas present challenges for sustainable land use and reducing carbon emissions within the city and in its metropolitan area. To counter this trend, we will focus on improving the attractiveness of the urban core, by continuing urban regeneration of neighbourhoods across the city and energy renovation of multi-apartment buildings, further reducing CO2 emissions.

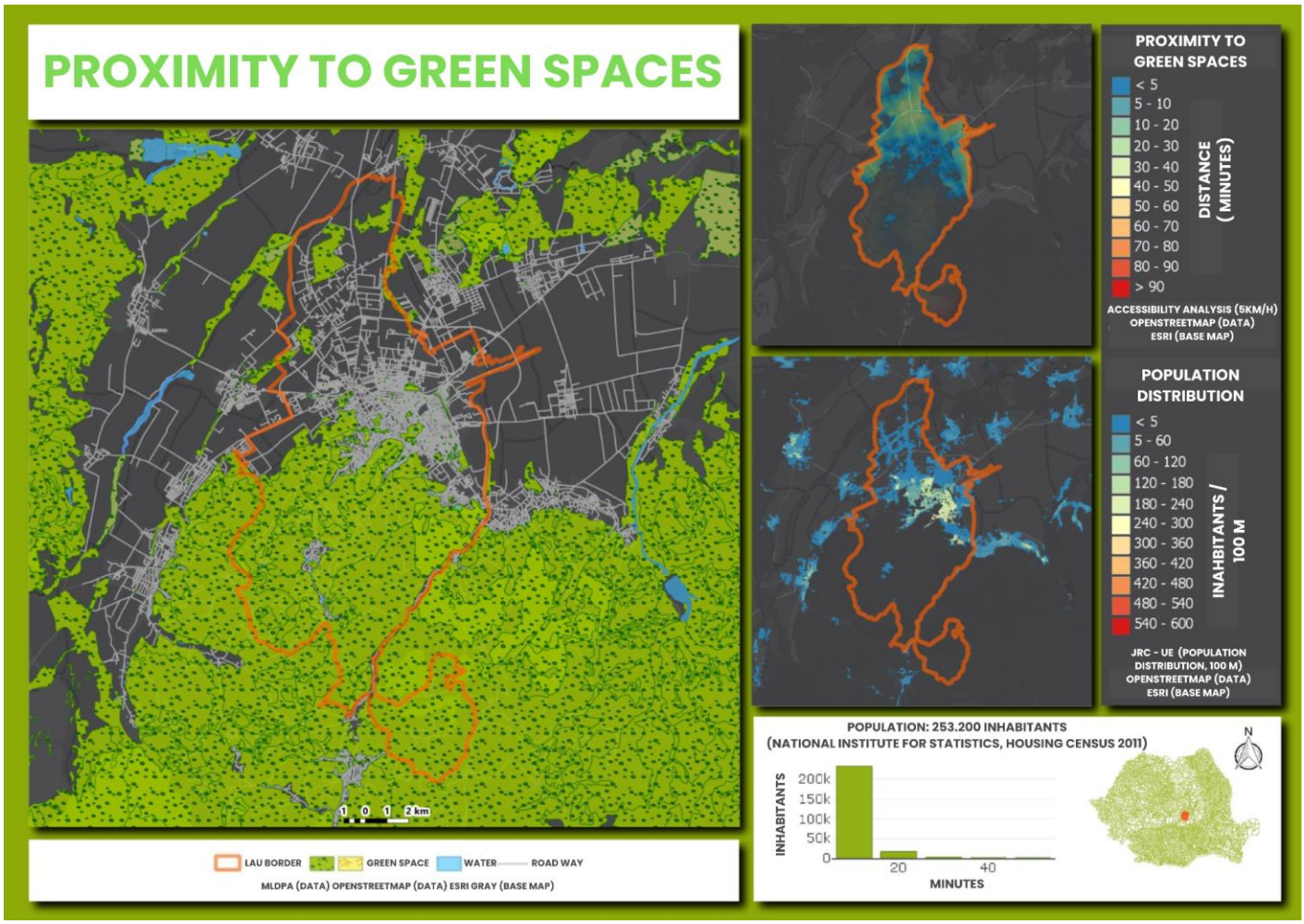
With regards to the built environment, we implemented directives to reduce carbon emissions in new urban projects through the local Urban Planning Technical Commission. This is done mainly by mandating the use of alternative energy solutions, such as efficient heating, LED lighting, and water-saving fixtures. For instance, the new developments are required to use district heating systems and heat pumps instead of traditional boilers, with plans to integrate these micro-networks into a centralised municipal grid by 2050. Moreover, since 2022, the building permits require energy studies aligned with NZEB standards and we also support the integration of photovoltaic / solar panels into new constructions, in line with the goals of the European Solar Rooftops Initiative. Moreover, new residential constructions will incorporate high-efficiency cogeneration systems.

Given the city's energetic mix (electricity - 12%, natural gas - 69%, and fossil fuels - 18%), we aim to create the largest municipal self-consumption park in Romania. In 2021, Brașov reached a significant milestone by transitioning to 100% green energy consumption for all publicly owned facilities. The new energy park will ensure energy independence for public buildings, street lighting and artificial snow production during winter. The investment totals €15 million and has a capacity of 20 MWp, reducing CO2 emissions by 5.000 tons per year. Ongoing dialogue with specialised firms are also underway regarding geothermal energy extraction, following the primary simulations conducted by the National Institute of Geology, reducing dependence on natural gas.

In this context, the Action Plan details the key interventions to bridge the gap between current conditions and achieving climate neutrality, with a 2035 time horizon. These plan's fields of action are Sustainable Mobility, Green infrastructure and nature-based solutions, Waste and circular economy, Built environment (energy renovation of p public and residential buildings), Energy systems (rehabilitation of district heating system, RES generation, fast charging stations for electric vehicles, public lighting), Governance innovation (policies, incentives and punitive measures), and Social innovation (citizen

involvement). By addressing these areas, the Action Plan leverages the city's current advancements, aligning with local, national and EU strategies to accelerate the transition to climate neutrality.

Figure 4. Proximity To Green Spaces



WORK PROCESS

Within the overarching context of the city's journey toward climate neutrality, outline the working steps involved in preparing the Action Plan, including both the completed stages and the future anticipated ones.

- ➔ **Additionally, delineate the timeline and key milestones (including the ones regarding the quality assurance - e.g., foreseen design competitions) for the forthcoming iterations in the Action Plan's development.**

A comprehensive process has been initiated to develop the Action Plan. The development of the Action Plan has been a collaborative effort involving stakeholders from the local ecosystem. This collaborative approach is not confined to the initial phase but is envisioned to continue throughout the Action Plan implementation, monitoring, evaluation and update. It underscores the commitment to inclusivity and ensures that the Plan reflects the collective vision and aspirations of the community towards climate neutrality. By maintaining this ongoing dialogue and engagement with stakeholders, the Action Plan remains responsive to evolving needs and priorities, fostering a sense of ownership and shared responsibility in realising the Municipality's climate goals.

ACTION PLAN DEVELOPMENT STAGES

Aligning with the European, national, and regional context: a comprehensive examination

At the outset, the Municipality conducted a thorough analysis of European, national, and regional strategic priorities regarding climate neutrality. By analysing existing strategies, plans, programs, and regulations, the Action Plan was developed to harmonise with the overarching climate-neutrality framework. This approach ensured coherence with broader objectives, optimising synergies, and enhancing effectiveness in addressing the imperative of climate neutrality. Consequently, it provided a clearer understanding of the landscape and informed future directions.

An essential component of developing the Action Plan involved the thorough review and integration of the methodology established by the European Commission for documents related to Climate City Contracts. The aim was to comprehend and internalise the European model, with the goal of seamlessly adapting it to the local context. This process enabled effective incorporation of the model's principles into the Municipality's strategies, ensuring alignment with its unique characteristics and circumstances.

To gain a comprehensive understanding of the national context, key documents were examined, including the Country Climate and Development Report for Romania and the Romanian National Urban Policy. Additionally, an extensive examination of the local context involved delving into historical data, identifying local barriers, needs, and challenges, and assessing both existing and projected budgets. This evaluation ran parallel to the baseline assessment of greenhouse gas inventories, utilising data sourced from previously endorsed local strategic documents, alongside various analyses, studies, and reports. Official statistics from national and international sources were also incorporated. Furthermore, an in-depth analysis of several policies and strategies, elaborated further in the policies and strategies section, was undertaken. These

included the Integrated Urban Development Strategy of the Braşov Metropolitan Area, the Sustainable Development Strategy of Braşov Municipality, the Sustainable Energy and Climate Action Plan, and the Climate Change Adaptation Plan.

Charting the Action Plan: vision, challenges, and actions

The journey progressed with a pivotal milestone: defining a clear vision for the transition to climate neutrality, informed by insights obtained from the preceding phase. Drawing on structured information from earlier endeavours, a vision tailored to the unique context was formulated, laying the foundation for coordinated and effective action toward climate neutrality objectives. Next, the focus shifted to proposing interventions necessary for achieving climate neutrality, organising them into actionable items based on emission domains and areas of focus. This phase also entailed aligning these actions with priorities, objectives, and projects outlined in other local strategic documents.

In the subsequent step, the specifics of the outlined actions were delved into by:

- ☐ Establishing targeted levels, direct CO2 reduction impacts, co-benefits, and climate and financial indicators.
- ☐ Calculating individual and cumulative budgets;
- ☐ Identifying sources and forms of financing;
- ☐ Mapping relevant stakeholders;
- ☐ Addressing associated risks and developing corresponding mitigation strategies.

Following this, attention was turned to identifying solutions for compensating residual CO2 emissions. Additionally, both current and forthcoming opportunities to enhance the Action Plan were identified, recognizing the assistance required for refining and optimising its effectiveness.

Incorporating public input: engaging in participatory consultations prior to plan approval

Prior to finalising the Action Plan, public consultations were conducted to engage both the community and the stakeholders' ecosystem. Feedback gathered during this process was carefully considered and integrated into the final version of the climate neutrality documentation. Subsequently, upon completion of the Climate Neutrality Action Plan, it is expected to undergo an official approval process at the local level, with the ultimate decision resting with the Local Council.

Enhancing Action Plan effectiveness: monitoring, evaluation, and continuous learning for implementation improvement

The execution of the Action Plan will see Braşov City Hall taking the lead role. However, this process will be conducted in collaboration with identified stakeholders, and in line with the Framework for citizen involvement and long-term support of citizen-driven action (see the Stakeholders sub-chapter), to ensure comprehensive and equitable engagement at the local level.

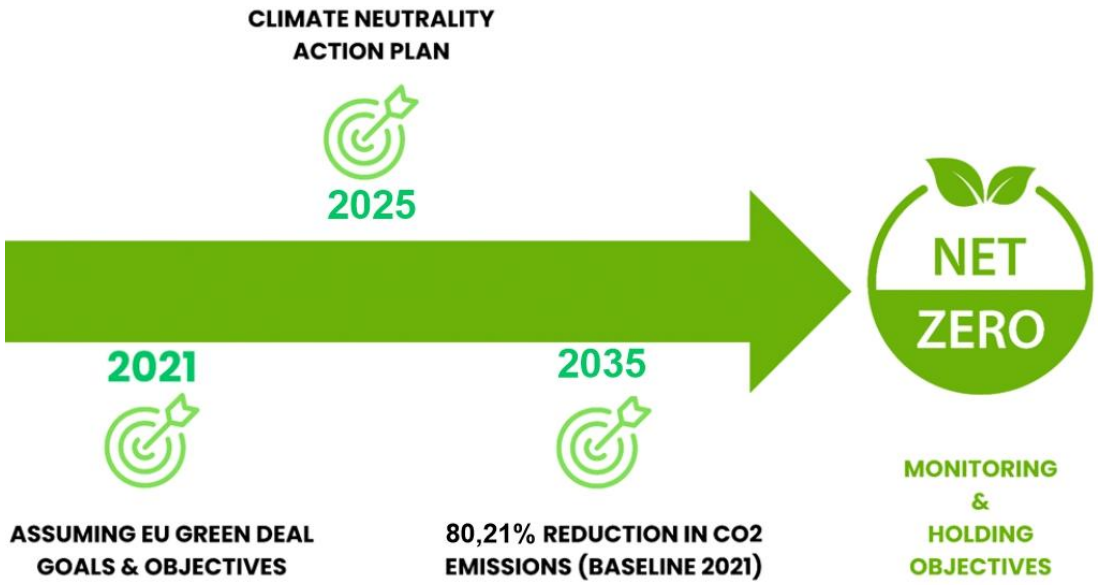
The monitoring and assessment of this Action Plan will be overseen by the Braşov City Hall in partnership with AMB and ATBV, under the coordination of the Energy Management Unit and with support from the Net

Zero Local Coalition. As such, community engagement, encompassing the private sector and civil society, will be a central component, reflecting the methodology employed in monitoring the Integrated Urban Development Strategy of the Brașov Metropolitan Area. Collaboratively, they will handle data coordination, centralization, and dissemination, while also implementing necessary corrective or enhancement measures.

The forthcoming monitoring of CO2 reduction results will be overseen jointly by the City Hall and Energy Manager. The Energy Management Unit will be developed and consolidated[8], and will continue its monitoring work, incorporating broader metrics and more regular evaluations, including the annual assessments stipulated in the Climate Neutrality Action Plan. Moreover, the collaboration with the Net Zero Local Coalition will enhance the appraisal of the local efforts and the reporting of locally identified issues.

All in all, the Climate Neutrality Action Plan will undergo annual monitoring. Each year, an interim assessment will evaluate progress toward achieving goals and implementing planned actions. Citizens and stakeholders will also actively participate in monitoring, tracking progress, and providing feedback to the Municipality for integration, under the Net Zero Local Coalition. Additionally, expertise and technologies of Action Plan signatories will enhance monitoring capacity. Moreover, the document will undergo updates every 2 years, based on evaluations and monitoring from the preceding period. These updates will incorporate completed actions, newly identified interventions, and emerging contextual factors such as needs, challenges, opportunities, and risks. They will address necessary adjustments based on the evolving local context and upcoming European and national directives on climate neutrality. Additional sessions may be convened as needed to promptly address emerging situations. Updates will be conducted by the Brașov City Hall, pending its approval.

Figure 6. Key Climate Neutrality Steps



[8] At the time of preparing this Action Plan, the Energy Management Unit was undergoing restructuring, with the energy management function being internalised by the Municipality, which was in the process of contracting an Energy Manager, setting the stage for the development of an internal Energy Management Unit.

GREENHOUSE GAS EMISSIONS BASELINE INVENTORY

Describe and elaborate on the most recent greenhouse gas (GHG) inventory conducted by the city, in order to establish the baseline emissions and also to identify the emissions gap towards achieving climate neutrality by 2035.

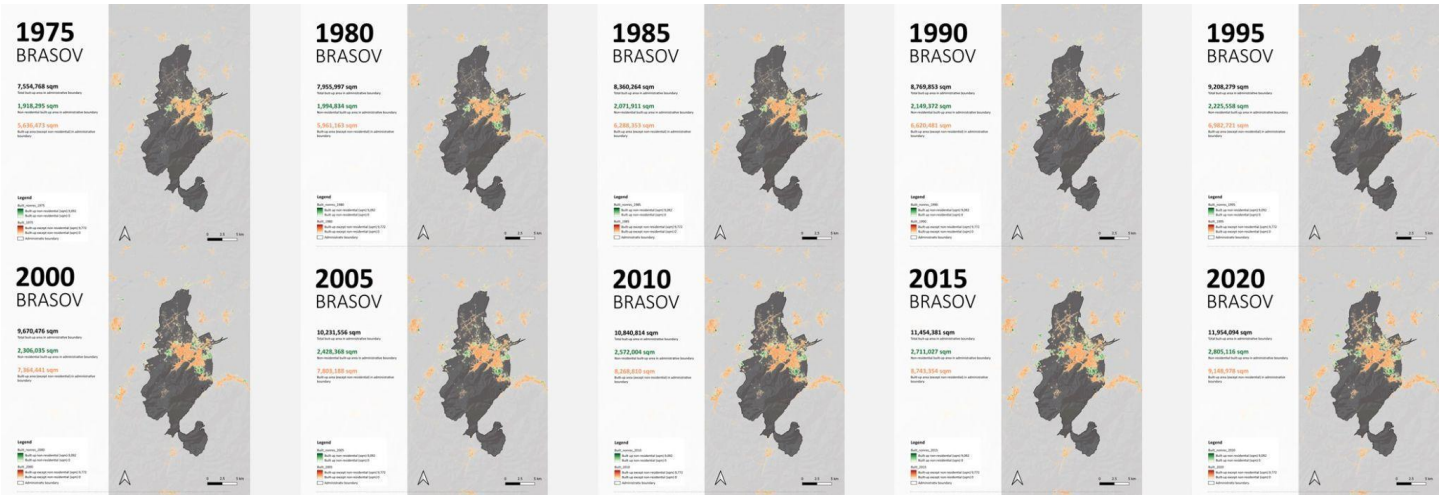
- ➔ **Make sure to also assess the greenhouse gas (GHG) baseline inventory - you can refer to: the sources of data collection and their rationale, the baseline emission conversion factors used, proposed measures for improving future data collection processes etc.**

Data for the baseline comes from Brașov's attempt to update the SECAP in 2021 with some minor revisions made by the authors. This baseline and action plan might encounter small improvements given the fact that an updated SECAP version for 2025 is being prepared.

BUILDINGS 2021 - 1,663,749.34 MWh energy | 391,262.68 tons CO2

The total built-up environment grew 58% in 2020 compared to 1975, registering a total of 2,805,116 sqm for non-residential built-up and 9,148,978 sqm for residential built-up.

Figure 1 Urban Expansion Patterns 1975-2020



Residential Buildings 2021

Energy requirements for residential buildings in 2021 are estimated to be around 183,774 MWh of electrical energy, 1,158,659 MWh of natural gas, and 24,307 MWh of thermal energy derived from district heating.

Public Buildings 2021

SECAP, on page 55, records that public buildings in 2021 needed 12,004 MWh of electrical energy, 1,947 MWh of natural gas, and 50,761 MWh of thermal energy.

Tertiary Buildings 2021

The energy needs for tertiary buildings were calculated In the SECAP by deducting the energy requirements for IPPU and AFOLU from the overall estimates, resulting in approximately 40,580.28 MWh of electrical energy and 297,592.28 MWh of natural gas.

TRANSPORT 2021 - 453,627.00 MWh energy | 129,508.04 tons CO2

Public lighting energy requirements for the year 2021 can be found on page 72 of the SECAP and account for a total of 13,019 MWh electrical energy. Page 87 of the same document estimates energy requirements for private and commercial transport at 148 MWh electrical energy, 7,813 MWh GPL, 210,966 MWh diesel, 136,737 MWh gasoline and 27,347 MWh biofuel. Public transport was estimated to have required in 2021 a total of 4,780 MWh electrical energy, 44,092 MWh diesel and 2,370 MWh biofuel. Municipal transport required in the same year a total of 9,092 MWh diesel and 635 MWh diesel.

IPPU 2021 - 94,232.33 | 22,385.54 tons CO2

Energy requirements from Industrial Processes and Product Use are around 10,009.33 MWh of electrical energy and 84,223.00 MWh of natural gas.

AFOLU 2021 - 32,726.67 MWh | 7,843.34 tons CO2

Energy requirements from Agriculture, Forestry, and Other Land Use are around 480.91 MWh of electrical energy and 32,245 MWh of natural gas.

WASTE 2021 - 8,854.97 MWh | 2,203.40 tons CO2

No energy requirement data related to waste management was identified in the strategic documents reviewed. However, according to the Brașov County Waste Management Plan, each person generated 402 kg of waste in 2019. With a population of 237,589 in Brașov in 2021 (as per the census), this amounts to 95,510.78 tons of waste. The same plan estimates the total municipal waste in urban areas of the Brașov metropolitan area at approximately 117,527 tons, of which 81.27% or 147,036.55 tons are attributed to Brașov.

For collection, it is assumed that vehicles use 42.5 liters of diesel per 100 kilometers, collect 10 tons per trip, and make a 30 km round trip, resulting in an energy use of 2,009.69 MWh of diesel (considering 10.72 kWh per liter). For sorting, processing, and related activities in the waste sector, the estimated energy usage for Brașov, based on its population relative to other Romanian cities, is set at 1% of the total energy consumption for electricity and 0.3% for natural gas. This totals approximately 2,666.19 MWh of electrical energy and 4,645.5 MWh of natural gas.

Figure 2 Energy requirements (MWh/year) – 2021 (left) / % of total (right)

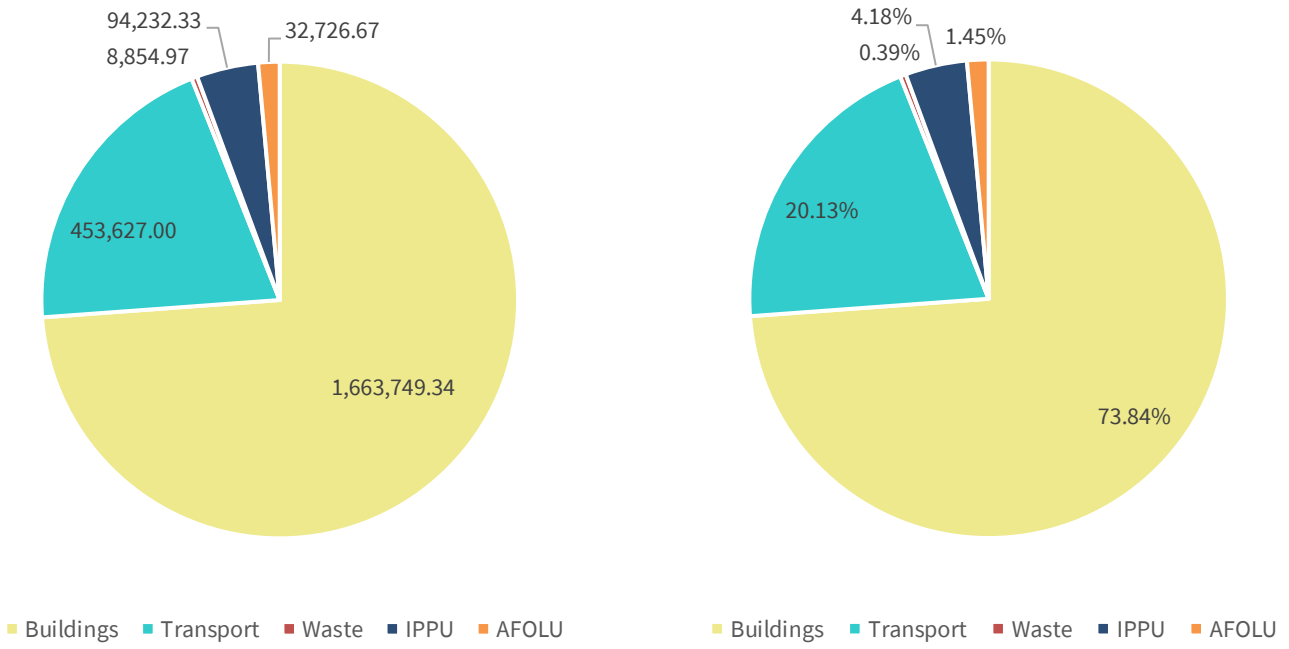
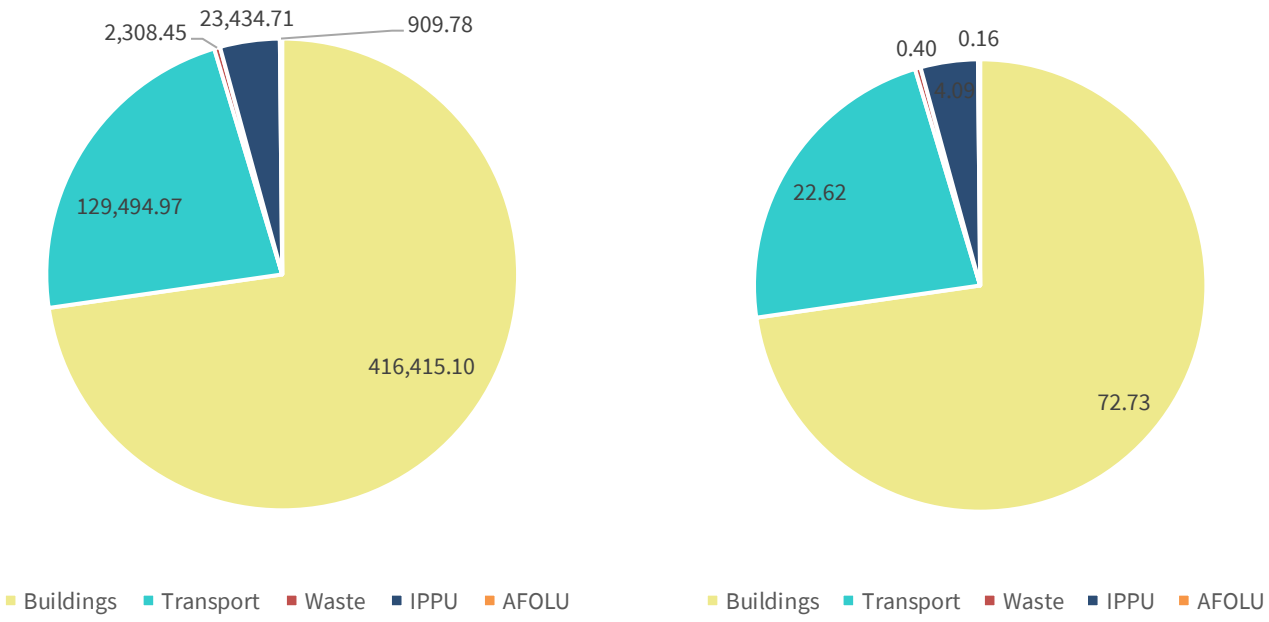


Figure 3 CO2 Emissions (tons/year) – 2020 (left), % of total (right)



Data source: PACED 2021

FINAL ENERGY USE BY SOURCE SECTORS

- ☐ Indicate the base year: 2021
- ☐ Indicate the used unit: MWh/year

Table 1 Final Energy Use

	SCOPE 1	SCOPE 2	SCOPE 3	TOTAL
BUILDINGS				
FUEL TYPE / ENERGY USED	FUEL TYPE / ENERGY USED	Thermal energy: 75,068.00	Electrical energy: 236,358.28 Natural gas: 1,458,198.28	-
TRANSPORT	-	456,999.00	-	456,999.00
FUEL TYPE / ENERGY USED	-	Electrical energy: 17,947.00 GPL: 7,813.00 Diesel: 264,150.00 Gasoline: 136,737.00 Biofuel: 30,352.00	-	-
WASTE	-	9,321.38	-	9,321.38
FUEL TYPE / ENERGY USED	-	Electrical energy: 2,666.19 Natural gas: 4,645.50 Diesel: 2,009.69	-	-
INDUSTRIAL PROCESS AND PRODUCT USE (IPPU)	-	98,780.59	-	98,780.59
FUEL TYPE / ENERGY USED	-	Electrical energy: 11,853.55 Natural gas: 86,927.05	-	-
AGRICULTURAL, FORESTRY, AND LAND USE (AFOLU)	-	3,834.86	-	3,834.86
FUEL TYPE / ENERGY USED	-	Electrical energy: 460.18 Natural gas: 3,374.68	-	-

EMISSION FACTOR APPLIED

- **Indicate the primary energy type and greenhouse gas (GHG) emission factor in accordance with the methodology used:** (tons CO2/year per MWh/year energy)
- **Indicate the used method, e.g., GPC, IPCC, CRF, national etc.:** (IPCC)

PRIMARY ENERGY/ ENERGY SOURCE	CARBON DIOXIDE (CO_2)	METHANE (CH_4)	NITROUS OXIDE (N_2O)	F-GASES (HYDROFLUOROCARBONS AND PERFLUOROCARBONS)	SULPHUR HEXAFLUORIDE (SF_6)	NITROGEN TRIFLUORIDE (NF_3)
ELECTRICAL ENERGY	0.217					
NATURAL GAS	0.24					
DIESEL	0.306					
GASOLINE	0.314					
GPL	0.231					
BIOFUEL	0.001					
RENEWABLE ENERGY	0.2024					
ELECTRICAL ENERGY	0.176					

SECAP (page 86) offers information regarding the emission factors applied for calculating CO2 emissions depending on energy requirements.
*COUNTRY SPECIFIC ELECTRICITY GRID GREENHOUSE GAS EMISSION FACTORS - CARBON FOOTPRINT
** FACTOR DETERMINED AFTER REVIEWING INVESTMENTS MADE IN THE THERMAL ENERGY SYSTEM

GHG EMISSIONS BY SOURCE SECTORS

- **Indicate the base year:** (2021)
- **Indicate the unit:** (tons CO2/year)

	SCOPE 1	SCOPE 2	SCOPE 3*	TOTAL
BUILDINGS	20,644.40	370,618.28	-	391,262.68
TRANSPORT	-	129,494.97	-	129,508.04
WASTE	-	2,308.45	-	2,203.40
INDUSTRIAL PROCESS AND PRODUCT USE (IPPU)	-	23,434.71	-	22,385.54
AGRICULTURAL, FORESTRY AND LAND USE (AFOLU)	-	7,843.34	-	7,843.34
TOTAL	**20,644.40**	**532,558.61**	**-**	**553,203.01**

PLANNED ACTIONS BY SOURCE SECTORS

The table categorises emission reductions from each action, based on the scope they affect. For instance, if the covered actions aim to decrease CO2 emissions linked to grid-supplied electricity, values will be assigned to Scope 2.

➔ If the activities are intended to be finalised by 2035, the base year should be adjusted accordingly to 2035.

BASE YEAR: (2021)	**SCOPE 1**	**SCOPE 2**	**SCOPE 3**
BUILDINGS	(insert total CO2 reduction)	(insert total CO2 reduction)	(insert total CO2 reduction)
IV.1. Energy renovation of public buildings	9,865.88		
IV.2. Energy renovation of residential buildings		57,592.05	
IV.3. New NZEB+ public buildings	9,865.88		
V.1. Rehabilitation of the district heating system		66,194.59	
V.2. Development of new RES generation capacities		90,023.42	
VI.1. Package of policies, incentives and punitive measures to incentivize households to switch to green energy sources.		26,838.04	
VI.2. Package of policies, incentives and punitive measures to incentivize the tertiary and industrial sector to switch to green energy sources.		7,858.72	
VII.1. Citizen involvement initiatives for increased sustainability		17,144.98	
II.1. Extension and rehabilitation of green areas, including through the reconversion of brownfield areas		10,741.26	
TRANSPORT	(insert total CO2 reduction)	(insert total CO2 reduction)	(insert total CO2 reduction)
I.1. Increasing the		49,443.32	

attractiveness and use of public transport			
I.2. Encouraging non-motorized trips around the 15-minute neighbourhood concept		44,141.98	
I.3. Encouraging the use of EV		30,661.13	
II.2. Consolidation of green-blue corridors at city and metropolitan level		5,560.65	
V.4. Climate-proofing of public lighting system		1,029.92	
WASTE	(insert total CO2 reduction)	(insert total CO2 reduction)	(insert total CO2 reduction)
III.1. Enhancing the integrated management of municipal waste and circular economy		993.42	
V.2. Development of new RES generation capacities		271.34	
INDUSTRIAL PROCESS AND PRODUCT USE (IPPU)	(insert total CO2 reduction)	(insert total CO2 reduction)	(insert total CO2 reduction)
II.1. Extension and rehabilitation of green areas, including through the reconversion of brownfield areas		2,234.86	
V.2. Development of new RES generation capacities		5,053.38	
VI.2. Package of policies, incentives and punitive measures to incentivize the tertiary and industrial sector to switch to green energy sources.		6,175.75	
AGRICULTURAL, FORESTRY AND LAND USE (AFOLU)	(insert total CO2 reduction)	(insert total CO2 reduction)	(insert total CO2 reduction)
II.1. Extension and rehabilitation of green areas, including through the reconversion of brownfield areas		97.95	
V.2. Development of new RES generation capacities		1,934.75	

EMISSIONS GAP

	BASELINE EMISSIONS (PERCENTAGE)[1]		BASELINE EMISSIONS REDUCTION TARGET 80% by 2035[2]		EMISSIONS ADDRESSED BY ACTION PLAN[3]		REMAINING RESIDUAL EMISSIONS[4]		EXCEEDING TARGET AMOUNT[5]
	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)
BUILDINGS	**391,262.68**	70.73%	**313,010.14**	70.73%	**296,124.82**	66.74%	**95,137.86**	86.90%	-16,885.32
TRANSPORT	**129,508.04**	23.41%	**103,606.43**	23.41%	**130,836.99**	29.49%	**-1,328.95**	-1.21%	27,230.56
WASTE	**2,203.40**	0.40%	**1,762.72**	0.40%	**1,264.76**	0.29%	**938.64**	0.86%	-497.96
INDUSTRIAL PROCESSES AND PRODUCT USE (IPPU)	**22,385.54**	4.05%	**17,908.44**	4.05%	**13,463.98**	3.03%	**8,921.56**	8.15%	-497.96
AGRICULTURAL, FORESTRY AND LAND USE (AFOLU)	**7,843.34**	1.42%	**6,274.67**	1.42%	**2,032.70**	0.46%	**5,810.64**	5.31%	-4,241.97
TOTAL	**553,203.01**	**100.00 %**	**442,562.40**	**100.00 %**	**443,723.25**	**100.00 %**	**109,479.75**	**100.00 %**	**1,160.85**

After implementing the actions proposed in this plan, the following conclusions can be drawn:

- ☐ BUILDINGS: the total reduction is slightly lower than the 80% target given the complexity of the problem (a large amount of housing stock with low energy performance) and the limited available resources. This results in **16,885 tons CO2 residual emissions** for this sector
- ☐ TRANSPORT: the total reduction exceeds the 80% target by 12,070.23 tons CO2, **resulting in a reserve of 27,230.56 tons CO2** residual emissions for this sector.
- ☐ WASTE: the total reduction falls short from the 80% target by 497.96 tons CO2, resulting in **497 tons CO2 residual emissions** for this sector.
- ☐ IPPU: the total reduction falls short from the 80% target by 4,444.45 tons CO2, resulting in **4,444 tons CO2 residual emissions for this sector**.
- ☐ AFOLU: the total reduction falls short from the 80% target by 497.57 tons CO2, resulting in **4,241** tons CO2 residual emissions for this sector.

Overall, all actions combined achieve the 80% target with a small reserve of 1,160 tons CO2 that while 109,479 tons of CO2 represent the gap towards climate neutrality.

PRIMĂRIA MUNICIPIULUI BRAȘOV

CURRENT POLICIES AND STRATEGIES

Provide a short contextual presentation and assessment of the policies, strategies, initiatives, and / or regulations at the local, regional and national levels which are relevant to the city's transition towards climate neutrality.

RELEVANT POLICIES, STRATEGIES, INITIATIVES, REGULATIONS

TYPE	LEVEL	TITLE	DESCRIPTION	RELEVANCE	NEED FOR ACTION
Strategy	Local	**INTEGRATED URBAN DEVELOPMENT STRATEGY OF THE BRAȘOV METROPOLITAN AREA (IUDS) 2021-2030**	The Integrated Urban Development Strategy (IUDS) guides the city and its metropolitan area's development towards 2030. Its vision for 2030 is to become a dynamic, strong community in economic and social partnerships, with a high capacity to adapt to global changes, offering an attractive lifestyle, and development and innovation opportunities.	The IUDS highlights the necessity for **prioritising emission reductions and climate change adaptation** in the Brașov Metropolitan Area, prompted by the forecasted temperature increases (between 0.5-2.5 in 2021-2050, compared to 1961-1990) and their potential impacts. The main strategic objectives that focus on reducing GHG emissions are **Connectivity and mobility,** as well as **Quality and lifestyle** (including measures for access to utility services, increasing the quality of residential buildings).	
Plan	Local	**GENERAL URBAN DEVELOPMENT PLAN**	The General Urban Plan is a superior rank planning documentation, and the main operational tool with normative character, forming the basis of urban planning. The GUP is currently undergoing updating, including preliminary studies focusing on environmental protection, risk assessment, demographics, urban development.	The GUP of Brașov includes **urban indicators** such as the permitted functions of constructions, the land occupancy percentage, the land use coefficient, the maximum and minimum height of constructions, their appearance, the minimum area of green spaces. At the time of preparing this Action Plan, the GUP is under revision.	
Plan	Local	**SUSTAINABLE ENERGY**	The SECAP is the primary strategic	The Sustainable Energy and Climate	

		AND CLIMATE ACTION PLAN (SECAP) 2020-2030	document aimed at reducing GHG emissions at the local level, prepared following the methodology for developing a SECAP formulated by the Joint Research Centre. It encompasses a baseline inventory of emissions for Brașov, a detailed action plan of necessary measures and monitoring indicators.	Action Plan includes a series of concrete measures and strategies in key sectors such as buildings, transport, energy, urban planning, public procurement, community involvement, and waste management. The aim of the plan is to reduce CO2 emissions and promote the use of renewable energy resources. The SECAP commits to a **reduction of local CO2 emissions by 55% by 2030**, compared to the 2008 baseline.	
Plan	Local	**CLIMATE CHANGE ADAPTATION PLAN**	The Climate Change Adaptation Plan was developed to enhance economic, technical, and social capacity to adapt to climate change. It analyses hazards, vulnerability, risk and effects and offers adaptation solutions for each sector analysed.	The plan identifies five vulnerable sectors: **infrastructure and urbanism, public health, biodiversity, tourism and recreational activities, education, information, and awareness**. Each sector has general and specific objectives defined, followed by concrete measures to achieve them, with a short- and long-term horizon for implementation (2020, 2050).	
Strategy	Local	**GREEN INFRASTRUCTURE STRATEGY 2024-2043**	The Green Infrastructure Strategy elaborates on the information on green areas' surfaces outlined in the General Urban Plan (GUP). It serves as a strategic planning tool aimed at developing, expanding, and conserving/protecting the urban green system over a 20-year timeframe.	The strategy envisions the creation of **an inclusive, interconnected green network**, planned and managed in a sustainable manner from an economic and ecologic point of view, further strengthening the city's identity. The strategy outlines key policies, regulations and programmes to achieve its objectives (conservation of natural heritage, creating new ecological corridors accessible for residents and tourists)	

Plan	Local	**INTEGRATED AIR QUALITY PLAN 2023-2027**	The Integrated Air Quality Plan for the Brașov Municipality analyses the levels of PM10, nitrogen dioxide (NO2) and nitrogen oxides (NOx) and projections for the period 2023-2027, using 2019 as a reference year.	The plan focuses on **emissions from the transport sector**. It includes measures related to increasing the use of public transport, electric vehicles, introducing regulations for banning vehicles with low pollution standards, intermodal terminals, traffic management, cycling infrastructure, park & ride facilities, parking regulations, and metropolitan railway transport. All measures include an implementation schedule, spatial scale, estimated implementation costs, potential sources of funding, indicators for monitoring progress and quantification modes.	
Plan	Local	**SUSTAINABLE URBAN MOBILITY PLAN (SUMP 1.0) 2016-2030**	The SUMP of Brașov ensures the implementation of European planning and management concepts for sustainable urban mobility, adapted to the specific conditions of the city and its surrounding municipalities, and includes a list of measures to improve mobility in the short, medium, and long term.	The second of the total five objectives of the SUMP is **reducing air, water, soil pollution, noise pollution, greenhouse gas emissions, and energy consumption**. The operational objectives regard the reduction of emissions of CO, NOx, VOCs, PM10, and CO2, noise and vibration levels, preservation and enhancement of biodiversity, reduction of water and soil pollution risk, reduction of material consumption and waste production, and increase in the percentage of eco-friendly vehicles.	
Plan	Local	**SUSTAINABLE URBAN MOBILITY PLAN (SUMP 2.0) 2035**	The updated SUMP keeps Brasov's trajectory towards a sustainable, smart and inclusive transport system. The action plan builds on the already implemented actions from SUMP 1.0 and tries to further	All projects are designed to reduce CO2 emissions and increase the modal share of sustainable transport modes. The extensive project portfolio will be integrated in the CCC.	

			accelerate the uptake of public transport and active mobility.		
Study	Local	**STUDY FOR THE LOCAL PARKING POLICY**	The study complements the SUMP, and offers the foundation for developing a parking policy in Brașov. The city is one of the few cities in Romania to develop such a policy.	The study is based on three key premises: **parking is not free, it is not a fundamental right and is a generator of traffic.** Therefore, the measures proposed are highly relevant for reducing CO2 emissions. It formulates four objectives: an efficient and integrated management of the existing parking stock, digitised parking service, meeting parking needs while minimising urban space consumption, and a coherent network of transfer parking facilities to reduce traffic flows towards the central area.	
Plan	Local	**VELO MASTERPLAN**	The Velo Masterplan for the Municipality of Brașov is a strategic document with an operational component, aimed at providing optimal conditions for cycling. This document elaborates on the Sustainable Urban Mobility Plan 2021-2027, focusing on the cycling component.	The masterplan goes beyond the planning of cycling infrastructure, providing a model for redesigning streets following the '**complete streets**' concept, which ensures a balanced allocation of space among all traffic participants, from different modes of transportation to various categories of users. The plan sets the objective of **over 15% of total trips to be made by bicycle** and become the Velo Capital of Romania.	
Strategy	Local	**LOCAL STRATEGY FOR DISTRICT HEATING SERVICE FOR THE**	The purpose of the Local Strategy for District Heating is to provide a set of short, medium, and long-term objectives and actions in the management of the public	The objectives of the strategy are to ensure the continuity, quality, and safety of thermal energy supply to the population, **increase efficiency in**	

		POPULATION IN BRAȘOV MUNICIPALITY 2023-2033	heating service in the Municipality of Brașov.	**thermal energy supply**, modernise and expand the District Heating System (SACET), **decarbonize the heating/cooling system to reduce greenhouse gas emissions** in the Municipality of Brașov, promote the use of renewable energy resources, and encourage investments in the District Heating System.	
Plan	Local	**LIGHTING MASTERPLAN FOR THE HISTORIC CENTRE OF BRASOV**	The lighting master plan for the historic centre of the city aims to develop an attractive urban environment during night time. It ensures that lighting interventions are coordinated and cohesive across the public and private sectors.	The key objectives contributing to climate neutrality included in the masterplan are promoting the **principles of circular economy and sustainability, as well as reducing light pollution.** Other objectives of the master plan for public lighting include economic development and branding (developing night-time economy and promoting the city identity); valorising built heritage; promoting collaboration between institutions, with the private sectors and other stakeholders.	
Plan	Local	**NOISE ACTION PLAN 2027**	The Noise Action Plan includes a list of streets where the noise levels exceed the maximum limits and the number of persons exposed to noise pollution. The main source of noise identified is road traffic. The plan also includes a prognosis for 2027, as a result of its implementation.	The plan highlights ongoing measures to reduce noise pollution and identifies additional ones. These measures refer to **increasing the use of electric and hybrid means of transport, increasing the use of public transport,** as well as the installation of sound-absorbing panels.	To reduce noise caused by motorised traffic, the Climate Neutrality Action Plan places a strong emphasis on improving the use of transport alternatives (public transport, walking, cycling) and the use of electric vehicles**.**
Regulation	Local	**LEGAL AND TECHNICAL REGULATIONS**	The aim of the regulations is to halt the irresponsible consumption of existing landscape resources by proposing a control	The regulations have a positive impact on **preventing chaotic urban development** which contributes to	The Climate Neutrality Action Plan prioritises compact, sustainable urban development, aiming to

		REGARDING THE DEVELOPMENT OF PLANNING DOCUMENTS FOR BUILDING ON SLOPING LANDS	mechanism for local landscape transformation.	increased GHG emissions. The document states minimum requirements and rules regarding construction regulations on sloping lands.	increase the attractivity of the urban core through interventions for the renovation and rehabilitation of residential buildings, mobility corridors and green areas, contributing to a higher quality of life.
Plan	Local	**INTEGRATED WASTE MANAGEMENT PLAN - BRAȘOV COUNTY 2020-2025**	The Integrated Waste Management Plan covers the period 2020-2025, with 2019 as the reference year. All municipalities in Brașov County are part of the Intercommunity Development Association 'ISO Environment', established in 2011 in the field of waste management, ensuring an integrated approach.	The plan analyses data on non-hazardous and hazardous **municipal waste** (household and similar waste from commerce, industry, and institutions), including used cooking oils and packaging waste, electrical and electronic equipment waste, as well as **construction and demolition waste and sludge from wastewater treatment.** It also includes a **prognosis for waste generation** for municipal waste and packaging waste.	Waste is a critical sector for reducing GHG emissions. The action plan includes various initiatives to address waste management and accelerate the transition to a circular economy. This encompasses establishing voluntary separate waste collection centres and developing rainwater collection and filtering systems.
Plan	Regional	**REGIONAL MASTER PLAN FOR WATER AND WASTEWATER**	The purpose of the Water and Wastewater masterplan is to identify investment priorities necessary for compliance with EU directives in the water and wastewater sectors, during the period 2013 – 2042. All municipalities in Brașov county are part of the Intercommunity Development Association in the Water Sector. The Association was established in 2007 and aims to implement joint regional development projects in the field of drinking water and wastewater.	The Water and Wastewater masterplan analyses the **rates of connection of households to water and wastewater services and environmental risks**, and includes necessary measures to achieve full compliance.	Climate Neutrality Action Plan, developed at municipal level, complements the interventions planned in the regional master plan for water and wastewater. It includes sustainable interventions for flood prevention and mitigation, as well as greening interventions of riverfronts in the metropolitan area and the development of a rainwater collection and filtering system.
Strategy	National	**NATIONAL INTEGRATED PLAN FOR ENERGY AND**	The National Plan for Energy and Climate Change was adopted in 2019 and was	According to the Plan, Romania aims to **increase its share of energy from**	The Climate Neutrality Action Plan is aligned with the objectives of the

		CLIMATE CHANGE 2021 – 2030 (NIPECC)	formulated in accordance with the EU energy policy framework, detailing the main objectives for 2030.	**renewable sources in the total energy consumption by 2030** by increasing the installed capacity of wind and photovoltaic plants (additional capacities of 6.9 GW from renewable sources compared to 2015), as well as by increasing the number of prosumers.	NIPECC in terms of reducing GHG emissions and increasing the capacity of renewable energy generation, accelerating the process of achieving the national targets.
Policy	National	**ROMANIA URBAN POLICY 2022-2035 (RUP)**	The first Urban Policy of Romania was adopted in 2021, transposing the new Leipzig Charter through its four objectives (green & resilient, just & inclusive, competitive & productive & well governed cities).	The second priority of the RUP is '**Creating liveable and climate- smart cities, by developing green-blue infrastructure to mitigate and adapt to urban risks**'. The RUP includes a variety of measures related to the climate adaptation and mitigation, reducing air pollution and improving sustainable urban Mobility, with a 2035 target.	Interventions included in the Action Plan for the transition to climate neutrality are aligned with the objectives and priorities of the Urban Policy of Romania.

ACTION PORTOFOLIO

For each action aimed at achieving climate neutrality as outlined in this Plan, fill out a sheet using the template provided below.

➔ **Make sure to also include, within this section, the actions pertaining to Organisational and Governance Innovation, as well as the actions related to Social and Other Innovation fields.**

INDIVIDUAL ACTIONS

A1. INCREASING THE ATTRACTIVENESS AND USE OF PUBLIC TRANSPORT

ACTION TITLE	**INCREASING THE ATTRACTIVENESS AND USE OF PUBLIC TRANSPORT**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Metropolitan area
FIELD OF ACTION	Sustainable urban mobility
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Transport
COVERED INTERVENTIONS	• Metropolitan train (phase 1) • Purchase of new electric buses • Modernisation and expansion of the ITS system in the city and metropolitan area • Modernisation and expansion of trolleybus infrastructure • Park & Ride facilities (Municipal, Noua, Calea Feldioarei) and capacity increases in Triaj, Poienelor and Rulmentul • Construction of a new depot • Extension of dedicated bus lanes (phase 2)
BRIEF DESCRIPTION	This action continues the fleet renewal and electrification of the public transport system in order to greatly increase comfort and capacity while reaching the target of a 100% electric fleet. Funding for 88 – 10m electric buses is secured under the NRRP while 30 articulated busses (hybrid and euro 6) are part of a operational leasing contract. There is a need for at least 60 additional 18-24m electric buses and 20 trolleybuses[9]. A new depot is needed to accommodate the extension of the metropolitan public transport fleet. A key component of the decarbonisation of the public transport system is the modernisation and

[9] 34 of these would replace actual Menarinibus – Citymood 18 buses (Euro 6) – fabricated in 2019. Depending on the resources available for extending the trolleybus network, some of the planned 60 articulated buses might be in fact trolleybuses.

	extension of the trolleybus network. The whole existing system urgently needs to be modernised (especially the links to Valea Cetății) while extensions are needed between Camera de Comerț and Livada Poștei, Triaj and Zaharia Stancu / Independenței street as well as Tineretului and Municipal are needed to increase the operational capacity of the network. A second phase of extensions would include main high-capacity corridors that are in present operated by diesel and electric buses: Lungă street and Calea București. Additionally, to increase the operational speed, the network of dedicated bus lanes has to be extended to key high-capacity corridors such as Saturn boulevard, Zizin street, 13 Decembrie street[10] and the inner ring: Gării boulevard and A. Vlahuță boulevard (8.6 km). To further increase reliability and attractivity of the metropolitan public transport system the first 3 lines of the metropolitan train would be developed connecting Bod and Stupini to Brașov (M1)[11], Codlea to Brașov-Ghimbav International Airport – Brașov and Sfântu Gheorghe (M2) while also improving conditions on the Brașov – Zărnești line, with an extension towards Dârste (M3). This network is directly connected to the high-capacity public transport network of the city. To reduce the high volumes of motorised traffic and ensure a lean transfer to the municipal public transport system a network of P&R facilities is needed (coordinated with a citywide parking policy). This would include the construction of at least 3 new parking facilities at key entrances (Municipal – in construction, Noua – planning phase, and Stupini) and an increase in capacity for existing terminals (Hărmanului, Poienelor and Rulmentul). A new and extended e-ticketing service is needed to increase the number of validations an provide seamless access to the metropolitan public transport system. This includes software, ticket validators as well as ticket machines.
OUTCOME	• 45% reduction of trips made by private car in favour of walking, cycling or public transport (baseline 2023 – 46% of all trips in the city are made by private car) • 20% increase in trips made by public transport (baseline 2023 – 43 mil. trips) • 100% electric public transport fleet • 10% less cars entering the city (transfer to metropolitan public transport or P&R)[12]
RESPONSIBLE ENTITY / BODY / PERSON	Brașov City Hall, BTA, RATBv
INVOLVED STAKEHOLDERS	Brașov County Council, CFR - National Railway Company, Management Authority from the Ministry Transport, JASPERS.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	49,443.32 tons CO2/year
% OF TOTAL CO2 REDUCTION	11.14%
GENERATED RENEWABLE ENERGY	N/A (the new garage should have solar panels – to be validated)

[10] Due to a very-high pressure on this artery (the most congested transport corridor) additional connectivity projects are needed before one general traffic lane can be removed.
[11] As part of a larger feasibility study the possibility to further extend this line will also be analysed.
[12] Taking into account that the metropolitan area is expected to grow in terms of population, + 15% by 2035.

(IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• -4,600.00 MWh/year electrical energy (electrical energy requirements for the city will increase after the implementation of this action) • 2,539.80 MWh/year GPL • 105,055.20 MWh/year diesel • 55,099.35 MWh/year gasoline • 11,050.20 MWh/ year biofuel
TIMELINE (START AND END)	2025-2030 Metropolitan train phase 1 2025-2028 P&R Facilities 2025-2026 Extension and modernisation of ITS 2025-2027 Modernisation and extension of trolleybus network (2028-2035 phase 2) 2025-2027 Purchase of new public transport vehicles 2025-2028 Core cycling network 2028-2035 Secondary and metropolitan cycling network 2027-2030 Extension of dedicated bus lanes phase 2

A2. ENCOURAGING NON-MOTORIZED TRIPS AROUND THE 15-MINUTE NEIGHBOURHOOD CONCEPT

ACTION TITLE	**ENCOURAGING NON-MOTORIZED TRIPS AROUND THE 15-MINUTE NEIGHBOURHOOD CONCEPT**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Metropolitan area
FIELD OF ACTION	Sustainable urban mobility
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Transport
COVERED INTERVENTIONS	• Calea Verde[13] (Braşov Green Way) – core cycling network • Extension of the core cycling network • Rehabilitation of key pedestrian areas and square (Valea Cetății, Piața Sfatului, Curtea Bisericii Negre) • Development of pedestrian areas residential neighbourhoods • Extension of pedestrian areas in the historical centre – phase 2 - Modarom • Pedestrianisation of the historical centre – phase 3 – Poarta Schei • Residential parking facilities for bicycles • Rehabilitation of underground pedestrian passages (including new passages)

[13] The project also includes dedicated bus lanes on Zizin street and Saturn boulevard.

	• Development of a Municipal bike sharing system and a network of shared mobility hubs (or, at least services) • Extension of cycling parking facilities
BRIEF DESCRIPTION	This action aims at greatly increasing active mobility by developing the core and partially secondary cycling network of the city and expanding the network o pedestrian priority areas to residential neighbourhoods. The aim is to create a network of secondary and tertiary city cores complementing the 3 central cores of the city that are well connected by active mobility infrastructure and facilities. Each neighbourhood should have a pedestrian friendly neighbourhood centre (see map Annex 2 – The Timiș canal and the 15 minute city). Neighbourhoods like Bartolomeu Nord, Tractorul, Blumăna / Cetate, Astra or Hărmanului – Florilor, Craiter and Triaj are in need of pedestrian friendly centres. Additionally, important public spaces such as Piața Sfatului, Valea Cetății or Curtea Bisericii Negre (Black Church Courtyard) are in urgent need of rehabilitation / modernisation. Due to large transport corridors crossing the city, pedestrian connectivity is often an important issue. Pedestrian passages in the Civic centre have to be modernised urgently and made accessible for persons in wheelchairs while additional pedestrian crossings are needed across the railway (ex. Micșunica, Fartec etc.). The core network of cycling lanes consists of approximatively 80[14] km of mostly segregated cycling lanes. More than 80% of citizens live within 250m of this core network. Given the complexity of the project, this network will be developed in a two-stage approach. The first stage links main cores of the city while the second stage provides connections to more peripheric neighbourhoods such as Dârste, Triaj, Stupini, Institutului or Carierei. If there is additional funding available, the secondary and tertiary cycling lane networks can be developed (additional 25km). To make the best of the planned cycling network, additional facilities are needed such as a bike sharing system (approx. 40 stations), secured parking facilities as well as tailored training sessions for residents. To have a complete approach on the 15-minute city concept, new neighbourhoods will be equipped with relevant facilities such as education, culture that are not directly part of this plan, as well as facilities such as parks / green spaces that are included in other actions (Ax. Extension and rehabilitation of green areas, including through the reconversion of brownfield areas, Ay Consolidation of green-blue corridors at city and metropolitan level)
OUTCOME	• 35% reduction from energy from all the transport sector as walking and cycling will be encouraged • 38% of all trips are mad by walking or cycling (up from 24% in 2023)
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality
INVOLVED STAKEHOLDERS	BTA, BMA, OAR, local NGOs active in the field of citizen involvement, active citizenship, community initiatives
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	44,141.98 tons CO2/year
% OF TOTAL CO2 REDUCTION	9.95%
GENERATED	N/A

[14] 8 km are already operational

RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• 51.80 MWh/year electrical energy • 2,734.55 MWh/year GPL • 92,452.50 MWh/year diesel • 47,857.95 MWh/year gasoline • 10,623.20 MWh/year biofuel
TIMELINE (START AND END)	2025-2035

A3. ENCOURAGING THE USE OF EV

ACTION TITLE	**ENCOURAGING THE USE OF EV**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	All citizens within Brașov
FIELD OF ACTION	Sustainable urban mobility
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Transport
COVERED INTERVENTIONS	• Updated parking policy to decrease use of fossil fuel motorised vehicles and encourage the use of EV • Voucher scheme for scrapping old fossil fuel vehicles • Tax increase for fossil fuel cars and 0 taxes for electric vehicles. • Zero emission zones to discourage motorised traffic and incentivize the use of EV • Development of 218 EV charging stations
BRIEF DESCRIPTION	This action aims to boost the adoption of electric vehicles while reducing pressure on vulnerable areas such as the historical centre or the Schei neighbourhood. This should be achieved through several interventions: • an updated parking policy will discourage the fossil fuel vehicle usage and reduce the pressure on already congested areas. This policy will be synchronised with the development of P&R facilities thus encouraging commuters to leave their cars at the outskirts of the city and continue by public transport or bike. Income from the parking taxes will be available for the implementation of other sustainable urban mobility projects. • Subsidies for EV acquisition (at national level – can be continued at local level if needed) and for scrapping old vehicles. • Low / Zero emission zones will be established to discourage the motorized traffic, especially polluting vehicles thereby reducing pollution and emissions and greatly improving quality of life. Regulations will be developed in such a manner that vulnerable users won't be

	affected by restrictions[15]. • The development of 218 electric vehicle charging stations will provide the infrastructure needed to support the growing EV market, making it more convenient for people to choose EVs over traditional fossil fuel-powered cars. Additional to these stations that already have funding secured, most likely private EV charging stations will also appear further increasing the availability of such facilities of EV owners/users.
OUTCOME	• At least 35% of private cars will be electric
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality
INVOLVED STAKEHOLDERS	BTA, BMA, OAR, local NGOs active in the field of citizen involvement, active citizenship, community initiatives
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	30,661.13 tons CO2/year
% OF TOTAL CO2 REDUCTION	6.91%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	N/A
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• -17,592.34 MWh/year electrical energy (electrical energy requirements for the city will increase after the implementation of this action) • 70,036.80 MWh/year diesel • 36,732.90 MWh/year gasoline
TIMELINE (START AND END)	2025-2035

A4. EXTENSION AND REHABILITATION OF GREEN AREAS, INCLUDING THROUGH THE RECONVERSION OF BROWNFIELD AREAS

ACTION TITLE	**EXTENSION AND REHABILITATION OF GREEN AREAS, INCLUDING THROUGH THE RECONVERSION OF BROWNFIELD AREAS**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	All citizens within Brașov
FIELD OF ACTION	Green infrastructure and nature-based solutions

[15] Brașov already created and even approved the regulations for a Low Emission Zone in the historical centre in 2024. Because at national level the application rules for these kind of regulation have been withdrawn from public consultation, also at local level, Brașov had to repeal the local council decision.

SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Buildings | IPPU | AFOLU
COVERED INTERVENTIONS	• New parks in Bartolomeu North (Lânii and Avantgarden) • New park around the new Sports Hall / Bartolomeu quarry (approx. 2.2 ha) • Cetăţuia Park • FARTEC Skate Park • Urban forest covering the former city landfill (20 ha) • New parks in residential neighbourhoods: Florilor, Astra, Dârste, Scriitorilor and Tractorul (approx. 5 ha – exact locations to be identified) • Urban reconversion of Rulmentul Industrial Area into green facilities • Reconversion of the former Răcădău-Dealul Melcilor stone quarry into a green and recreational area (approx. 6ha) • Rehabilitation of Civic Center Park • Ecologization of two former landfills and reconversion into green areas for recreational purpose (approx. 20 ha) • Multi-annual tree planting program (along railway lines and to complete street vegetation) • Green roofs programme
BRIEF DESCRIPTION	This action aims to expand and rehabilitate the local green areas through multiple interventions, including the reconversion of disused areas. The foreseen interventions cover the establishment of new parks in several areas such as Bartolomeu (Lânii) and (Avantgarden), Cetăţuia, Florilor-Astra-Scriitorilor, Tractorul, which will offer more green spaces for leisure and recreation for the residents. In addition, the development of FARTEC Skate Park will meet the recreational needs of skateboard enthusiasts. The former industrial sites, such as Rulmentul Industrial Area and the former Răcădău - Dealul Melcilor stone quarry as well as the former landfill (Narciselor street) will be transformed into green developments (more than 30 ha of green spaces), promoting environmental sustainability through the revitalization of the existing unused spaces. In addition, a multi-year tree planting program will be implemented, in order to increase the greenery and biodiversity within the city. To further reduce, correlated with urban regeneration projects and energy renovation of collective housing units a city wide green roof program will be launched.
OUTCOME	• 20% reduction from electrical energy from all buildings due to mitigation of the heat island effect, 10% decrease from IPPU for the same reason and 1% decrease from AFOLU due more efficient management • Public green areas open and accessible to all citizens within 15 minutes of walking from their residence.
RESPONSIBLE ENTITY / BODY / PERSON	Braşov Municipality
INVOLVED STAKEHOLDERS	AMB, OAR, local NGOs active in the field of environmental protection and urban development (ex. Greenpeace).

GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 10,741.26 CO2/year from Buildings • 2,234.86 tons CO2/year from IPPU • 97.95 tons CO2/year from AFOLU
% OF TOTAL CO2 REDUCTION	2.95%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	N/A
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	☐ Buildings: • 45,674.34 MWh/year electrical energy ☐ IPPU: • 1,000.93 MWh/year electrical energy • 8,422.30 MWh/year natural gas ☐ AFOLU: • 4.81 MWh/year electrical energy • 322.46 MWh/year natural gas
TIMELINE (START AND END)	2025-2027 Cetățuia park, FARTEC Skate Park, Lânii & Avantgarden parks, Sports Hall Bartolomeu 2027 - 2035 Răcădău-Dealul Melcilor quarry, Rulmentul urban reconversion, Urban forest/park on the former landfill and new parks in residential neighbourhoods. 2027-2035 Green roofs programme 2025-2035 Multiannual tree planting program

A5. CONSOLIDATION OF GREEN-BLUE CORRIDORS AT CITY AND METROPOLITAN LEVEL

ACTION TITLE	**CONSOLIDATION OF GREEN-BLUE CORRIDORS AT CITY AND METROPOLITAN LEVEL**
TYPE OF ACTION	Nature-based solution
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Brașov Metropolitan Area – Especially Brașov and Sânpetru
FIELD OF ACTION	Green infrastructure and nature-based solutions
SYSTEMIC LEVER	Transport
EMISSION DOMAIN(S)	Buildings | IPPU | AFOLU
COVERED INTERVENTIONS	• Greening interventions for Timișul Sec River • Timiș blue-green corridor • Flood prevention arrangements in the Schei neighbourhood
BRIEF DESCRIPTION	Unlike other many cities (Cluj-Napoca, Iași, Timișoara, Sibiu etc.) Brașov does not have an important river crossing the densely populated areas that can act as a natural backbone. The specificity of Brașov are small rivers that collect water from the mountain slopes and cross the city, mostly without

	being visible. The first river uncovered was the Graft (behind the historical fortress walls), a place that is nowadays one of Brașov's main touristic areas. The Timiș canal also crosses the city from south to north but is either covered by concrete slabs or hidden in the forest. Therefore, one of the priorities of Brașov Municipality lies in gradually uncovering the river, by removing the concrete slabs (ex. Enupărului street), making it more accessible to locals (ex. K. Lehmann Street or Stupini neighbourhood) and include small greening actions along with NBS interventions, in order to create a new active mobility corridor that also consolidates neighbourhood centres (ex. Kaufland area on Enupărului street). While this specific project may not include major greening interventions in the first phase (and subsequent a strong reduction in ghg emissions) it's most important contribution is to bring citizens closer to the water and act as a community link. The Timișul Sec river is located at the periphery of the city, near the beltway, but can act as an important natural corridor in the newer developed areas. The segment with the highest potential is between Sânpetru train station, the Rulmentul industrial site and the former landfill on Narciselor street. Both the industrial site and the landfill are going trough complex regeneration project and will be an integral part of Brașov's future green space system. In this context, the Timișul Sec river can act as the backbone of an extended urban regeneration project. Future extensions towards Sânpetru – Lempeș hill and Dârste / Dâmbul Morii neighbourhoods can transform it into an important blue-green corridor. Brașov has two neighbourhoods that are vulnerable to flooding, Schei and Stupini. For the Stupini neighbourhood a project envisaging the damming and regulation of the Ghimbășel river is already been implemented. The Schei neighbourhood, being surrounded by steep slopes with forests is often affected small streams that flow into the Oabăn stream. Recent residential developments gradually removed former green spaces[16], thus destabilized the slopes and made the area vulnerable to floods and landslides. With the help of the CARMINE project the Brașov Municipality is looking to develop sustainable and nature-based solutions such as: anti-erosion curtains, road embankment rehabilitation works, stone gabion works and wet gardens. These works have to be synchronised with complex works regarding the upgrade and extension of the sewage system in the neighbourhood.
OUTCOME	• 5% reduction in private and commercial transport • 20 km of waterfront accessible to citizen (attractive public space) • Citizens are aware of the value of Brașov's waterfront[17]
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality
INVOLVED STAKEHOLDERS	BTA, BMA, OAR, local NGOs active in the field of citizen involvement, active citizenship, community initiatives.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	5,560.65 tons CO2/year
% OF TOTAL CO2 REDUCTION	1.25%
GENERATED	N/A

[16] Even if on private lands.
[17] While this seems to be a

RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• 282.20 MWh/year GPL • 11,672.80 MWh/year diesel • 6,122.15 MWh/year gasoline • 1,227.80 MWh/year biofuel
TIMELINE (START AND END)	2025-2027 Timiș Canal – Enupărului street, Stupini and Karl Lehman / Dealul Melcilor segments, Timișul Sec Sânpetru – Rulmentul – Narciselor landfill and simple flood prevention interventions in the Schei neighbourhood. 2026 – 2035 Timișul Sec – metropolitan scale, Timiș Canal – more complex segments Carpaților / Dârste and more complex flood prevention interventions in the Schei neighbourhood.

A6. ENHANCING THE INTEGRATED MANAGEMENT OF MUNICIPAL WASTE AND CIRCULAR ECONOMY

ACTION TITLE	**ENHANCING THE INTEGRATED MANAGEMENT OF MUNICIPAL WASTE AND CIRCULAR ECONOMY**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Residential districts and areas
FIELD OF ACTION	Waste and circular economy
SYSTEMIC LEVER	Technology / Infrastructure
EMISSION DOMAIN(S)	Waste
COVERED INTERVENTIONS	• Digitised ecological islands for separate waste collection • Voluntary separate waste collection centres
BRIEF DESCRIPTION	This action involves implementing digitized ecological islands, establishing voluntary waste collection centres. This is a continuation of the first network of smart waste collection islands, called "Petrică", where people could exchange plastic, aluminium or glass bottles for bus tickets (50 bottles = 1 ticket)[18]. The scheme was discontinued after the Returning and Warranty System "Sistemului Garanție-Returnare (SGR)" was developed at national level that provides a financial reward for each bottle collected at commercial stores. Still, garbage collection units in residential neighbourhoods need to be upgraded in order to provide better conditions for selective collection of waste. For this, the Brașov city hall already secured funding from the NRRP for 368 digitized ecological islands that would securely store garbage, separated by fractions.
OUTCOME	• 60% reduction in all energy associated with processing waste
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality

[18] 4.3 milion bottles have been collected in the first 13 months of use.

INVOLVED STAKEHOLDERS	Brașov Waste Operators: BRAI-CATA and COMPREST, Association of property owners, local NGOs active in the field of environmental protection and the urban sector, private sector.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	993 tons CO2/year
% OF TOTAL CO2 REDUCTION	0.22%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	0.20%
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• 1,400.54 MWh/year electrical energy • 2,713.40 MWh/year natural gas
TIMELINE (START AND END)	2026-2030

A7. ENERGY RENOVATION OF PUBLIC BUILDINGS

ACTION TITLE	**ENERGY RENOVATION OF PUBLIC BUILDINGS**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Public Buildings from Brașov Municipality
FIELD OF ACTION	Built environment
SYSTEMIC LEVER	Technology / Infrastructure
EMISSION DOMAIN(S)	Governance & Policy
COVERED INTERVENTIONS	• Energy renovation of Astra Food Market • Energy renovation of Star Food Market • Energy renovation of Postăvarilor Bastion (part of general rehabilitation) • Energy renovation of heritage buildings (Brașov Citadel) • Energy renovation of cultural buildings (Opera House, Theatre, Orthodox Synagogue) • Energy renovation of educational buildings
BRIEF DESCRIPTION	This action takes the shape of a multiannual renovation programme of public buildings that is in most cases part of the general rehabilitation of these selected buildings. involves comprehensive energy renovations across multiple public buildings, including the Astra and Star Food Markets, converting the former thermal points into community centres, renovating the

	Postăvarilor Bastion for increased efficiency and functionality, updating heritage sites like Braşov Citadel to preserve history while improving energy performance, and refurbishing cultural landmarks such as the Opera House, Theatre[19], and Orthodox Synagogue to reduce the energy usage and the implicit environmental impact. Additionally, educational buildings will also undergo energy renovations, in order to foster more sustainable and comfortable learning spaces.
OUTCOME	• 47% reduction in all energy related to public buildings
RESPONSIBLE ENTITY / BODY / PERSON	Braşov Municipality, Energy Manager
INVOLVED STAKEHOLDERS	Public Entities based in targeted public buildings, the Public Heating Society Braşov.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	9,865.88 tons CO2/year
% OF TOTAL CO2 REDUCTION	2.22%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	0.20%
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• 6,324.32 MWh/year electrical energy • 915.09 MWh/year natural gas • 36,920.38 MWh/year thermal energy
TIMELINE (START AND END)	2026-2035

A8. ENERGY RENOVATION OF RESIDENTIAL BUILDINGS

ACTION TITLE	**ENERGY RENOVATION OF RESIDENTIAL BUILDINGS**
TYPE OF ACTION	Technical intervention
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Collective housing units (flats) in Braşov – built before 1990.
FIELD OF ACTION	Built environment
SYSTEMIC LEVER	Technology / Infrastructure Finance & funding
EMISSION DOMAIN(S)	Buildings

[19] People's Cinema or Apollonia Cultural Centre have been already rehabilitated.

COVERED INTERVENTIONS	• Energy renovation of multi-apartment buildings (including private co-financing of owners)
BRIEF DESCRIPTION	This action covers the renovation of collective housing units, in order to boost the energy efficiency and sustainability. At the moment, approximatively 40% of collective housing units (flats) have gone through energy renovation, partially by using governmental funds (2009-2019 – 99 buildings[20]) or by private investments made by tenants. Considering that these interventions often used low quality materials an upgrade is needed in the near future, while the rest (non-insulated buildings) also have to undergo treatment. The target would be to manage to insulate approximatively 400 buildings by using a mix of levers: a) accessing available EU funding - 10 buildings already have funding from the NRRP and national funds – OUG 18/2009, while other technical documents are being prepared for other 42 buildings, b) Incentives for owners to invest in thermic insulation of their apartments (only for the whole building). Incentives could be provided by the municipality but also by partnership with private entities (banks, construction companies etc.). In some cases, incentives can also be process related, for example assistance in preparing technical documentation. c) Need driven interventions – given the fact that the facades of buildings from the 60-80' are rapidly degrading and will need interventions, even if budgeted directly by the owners. Works typically involve enhancing insulation, installing energy-efficient windows and doors, upgrading the heating and cooling systems, and incorporating renewable energy sources, such as the solar panels and will be coordinated with larger urban regeneration projects. These works will lead to lower energy bills, heightened comfort, and less environmental impact for residents. Moreover, the action enhances the urban environment and fosters community engagement in the sustainable development process.
OUTCOME	• 18% reduction in all energy related to public buildings[21]
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Energy Manager
INVOLVED STAKEHOLDERS	Public Entities based in targeted public buildings, private sector (eventual co-funding) and ABMEE / ADDJB (guidance for residents in developing energy renovation projects) and UNITBV - Pro-nZEB Cluster (research and pilot projects for improved technical solutions).
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	57,592.05 tons CO2/year
% OF TOTAL CO2 REDUCTION	12.98%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• *27,678.06* MWh/year electrical energy • *208,744.26* MWh/year natural gas

[20] 65 of those buildings have been dormitories for disatvantaged people.
[21] Calculations based on national estimations from similar projects – 47% reduction of energy consumption for a properly insulated building.

	• *4,454.36*MWh/year thermal energy
TIMELINE (START AND END)	2026-2035

A9. NEW NZEB PUBLIC BUILDINGS

ACTION TITLE	**NEW NZEB PUBLIC BUILDINGS**
TYPE OF ACTION	Built environment
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Technology / Infrastructure Governance & Policy
FIELD OF ACTION	Governance & Policy
SYSTEMIC LEVER	Technology / Infrastructure Finance & funding
EMISSION DOMAIN(S)	Buildings
COVERED INTERVENTIONS	• New public buildings (nurseries, kindergartens, schools, social centres)
BRIEF DESCRIPTION	This action involves the construction of new public buildings (nurseries, kindergartens, schools, and social centres), which will be designed as near-zero energy buildings (NZEBs). As NZEBs feature highly efficient structures that reduce energy usage and carbon emissions, employing advanced insulation, efficient heating and cooling systems, and renewable energy integration, these buildings will advance the environmental sustainability and climate neutrality, while offering vital community amenities.
OUTCOME	• 47% reduction in all energy associated with public buildings
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Energy Manager
INVOLVED STAKEHOLDERS	Public Entities based in targeted public buildings, private sector (eventual co-funding) and ABMEE / ADDJB (guidance for residents in developing energy renovation projects) and UNITBV - Pro-nZEB Cluster (research and pilot projects for improved technical solutions).
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	9,865.88 tons CO2/year
% OF TOTAL CO2 REDUCTION	2.22 %
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED /	• *6,324.32* MWh/year electrical energy

SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• *915.09 MWh/year natural gas* • *36,920.38* MWh/year thermal energy
TIMELINE (START AND END)	2026-2035

A10. REHABILITATION OF THE DISTRICT HEATING SYSTEM

ACTION TITLE	**REHABILITATION OF THE DISTRICT HEATING SYSTEM**
TYPE OF ACTION	Technical interventions
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Districts (the ones supplied with heating)
FIELD OF ACTION	Energy systems
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Buildings
COVERED INTERVENTIONS	• Rehabilitation of heating transport and supply network
BRIEF DESCRIPTION	The central heating system of Brașov has already undergone several upgrades, mainly regarding thermic energy production. Main investments have been directed into creating a co-generation facility so that nowadays more than 89% of thermic energy is produced in co-generation. This action focuses on rehabilitating the thermal energy transport and supply network, primarily the local heating system. The proposed interventions aim to modernize and enhance its efficiency, mainly by repairing / replacing old pipes, improving insulation, optimizing heat distribution, and integrating renewable energy sources. The goal of this action is to increase its reliability, curb the energy waste, and lessen its environmental impact. Additionally, the Local strategy for the thermal energy supply service 2023-2033 targets the extension of the service by attracting new users which would triple the demand for thermic energy. This demand would be secured by renewable energy sources generating approximatively 9,5000 MWh/year.
OUTCOME	• 20% decrease in natural gas for all buildings
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Public Heating Service Operator, Energy Manager
INVOLVED STAKEHOLDERS	Brașov Municipality, Local Public heating service Brașov BEPCO, Associations of homeowners from Brașov.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	275,810.80 tons CO2/year

% OF TOTAL CO2 REDUCTION	14.92%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• *275,810.80* MWh/year natural gas
TIMELINE (START AND END)	2026-2035

A11. DEVELOPMENT OF NEW RES GENERATION CAPACITIES

ACTION TITLE	**DEVELOPMENT OF NEW RES GENERATION CAPACITIES**
TYPE OF ACTION	Technical interventions
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Municipalities, Energy companies, Public Institutions, Public parking management
FIELD OF ACTION	Energy systems
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Buildings | IPPU | Waste | AFOLU
COVERED INTERVENTIONS	• Photovoltaic park for public electricity consumption • Photovoltaic panels for public buildings
BRIEF DESCRIPTION	This action includes the construction of a municipal photovoltaic park, which will be used to generate electricity for the public use. Close to 90% of energy used by public buildings (schools, kindergartens, city hall and other institutions) will be provided by this photovoltaic park which is nearly finished and is being connected to the national electricity grid. Additionally, all buildings that undergo renovation will (if possible) include solar photovoltaic panels while a city-wide program to equip all public schools with this technology will be rolled out. Projects for 12 out of 27 schools are already prepared while the new school from the Stupini neighbourhood will be built according to NZEB specifications. These interventions will expand the local renewable energy capacities, aiming to reduce the reliance on traditional sources, cut carbon emissions, and foster sustainability.
OUTCOME	• Generation of green energy and a 25% decrease in natural gas overall due to the increase use of green electrical energy
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Public Entities based in targeted public buildings, Energy Manager
INVOLVED STAKEHOLDERS	Brașov Municipality, the Brașov Metropolitan Area Intercommunity Development Association, the Brașov Environmental Protection Agency.

GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 82,743.24 tons CO2/year from Buildings • 5,053.38 tons CO2/year from IPPU • 271.34 tons CO2/year from Waste • 1,934.75 tons CO2/year from AFOLU
% OF TOTAL CO2 REDUCTION	21.92%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	30,957.00 MWh/year of green electrical energy (energy from solar source)
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	☐ Buildings: • 375,720.50 MWh/year natural gas • 30,957.00 generated renewable energy ☐ IPPU: 21,055.75 MWh/year natural gas ☐ Waste: • 1,130.59 MWh/year natural gas ☐ AFOLU • 8,061.44 MWh/year natural gas
TIMELINE (START AND END)	2023 - 2025 Photovoltaic Park 2025-2035 – Photovoltaic panels on public buildings – part of the multiannual rehabilitation programs

A12. CLIMATE-PROOFING OF PUBLIC LIGHTING SYSTEM

ACTION TITLE	**CLIMATE-PROOFING OF PUBLIC LIGHTING SYSTEM**
TYPE OF ACTION	Energy systems
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Technology / Infrastructure
FIELD OF ACTION	Transport
SYSTEMIC LEVER	Technology/Infrastructure
EMISSION DOMAIN(S)	Transport
COVERED INTERVENTIONS	• Modernization of public lighting system
BRIEF DESCRIPTION	The action of modernising the public lighting system involves the process of upgrading the existing lighting infrastructure, in order to improve energy efficiency, reduce carbon emissions and increase resilience to climate change. As such, the works will include replacing outdated light fixtures with energy-efficient LED technology, installing smart lighting controls to optimize energy use, and integrating renewable energy sources where possible. Main arteries have already been equipped with LED technology, only the historical centre, secondary streets and some peripheric neighbourhoods remain to be finished.

OUTCOME	• 70% reduction in energy need for public lighting due to LED technology
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Public Lighting Service Operator
INVOLVED STAKEHOLDERS	Energy Manager
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 1,029.92 tons CO2/year
% OF TOTAL CO2 REDUCTION	0.23%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	N/A
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	7,863.10 MWh/year electrical energy
TIMELINE (START AND END)	2024 - 2027

A13. PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE HOUSEHOLDS TO SWITCH TO GREEN ENERGY SOURCES.

ACTION TITLE	**PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE HOUSEHOLDS TO SWITCH TO GREEN ENERGY SOURCES.**
TYPE OF ACTION	Soft interventions
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Brașov Metropolitan Area
FIELD OF ACTION	Governance innovation
SYSTEMIC LEVER	governance & Policy
EMISSION DOMAIN(S)	Buildings
COVERED INTERVENTIONS	• Tax Credits: tax reductions or credits for the installation of renewable energy systems, such as solar panels or wind turbines. • Grants and Low-Interest Loans: upfront capital for the installation of renewable energy technologies for households or apartment blocks. • Carbon Pricing: carbon tax on households exceeding a certain threshold of non-renewable energy consumption.

	• Mandates for New Buildings: all new residential constructions to incorporate renewable energy systems, such as solar panels or geothermal heating systems.
BRIEF DESCRIPTION	This action involves implementing a package of policies, incentives and punitive measures to encourage households to switch to green energy sources. The key interventions include tax credits for installing renewable energy systems such as solar panels or wind turbines, grants and low-interest loans to make the transition more affordable, carbon pricing to discourage non-renewable energy consumption, and mandates for new residential construction to include renewable energy systems, such as solar panels or geothermal heating systems.
OUTCOME	• **10% reduction in natural gas for residential buildings, green electricity generated and increase in electrical energy required**
RESPONSIBLE ENTITY / BODY / PERSON	Brașov Municipality, Energy Manager
INVOLVED STAKEHOLDERS	All stakeholders foreseen for the Climate Neutrality Action Plan implementation
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 26,838.04 tons CO2/year from Buildings
% OF TOTAL CO2 REDUCTION	6.05%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	7,000 MWh/year electrical energy from solar
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	☐ Buildings: • -5,000.00 MWh/year electrical energy (electrical energy requirements for the city will increase after the implementation of this action) • 109,865.40 MWh/year natural gas • 7,000.00 MWh/year green electrical energy (energy generated from solar source)
TIMELINE (START AND END)	2024 - 2027

A14. PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES.

ACTION TITLE	**PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES.**
TYPE OF ACTION	Soft interventions
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Brașov Metropolitan Area
FIELD OF ACTION	Governance innovation

ACTION TITLE	**PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES.**
SYSTEMIC LEVER	Governance & Policy
EMISSION DOMAIN(S)	Buildings | IPPU
COVERED INTERVENTIONS	• Mandatory Renewable Energy Quotas: businesses required to source a certain percentage of their energy from renewable sources correlated with penalties if they fail to do so. • Tax Breaks for Green Investments: tax deductions or exemptions for investments in renewable energy technologies and energy efficiency measures. • Grants and Subsidies: Financial support in the form of a low interest loan for retrofitting old systems and for implementing new green technologies in factories and commercial buildings.
BRIEF DESCRIPTION	The interventions covered by this action form a comprehensive strategy to drive the tertiary and industrial sectors towards sustainable energy practices, combining regulatory requirements with financial incentives, in order to ensure compliance and encourage proactive investment in green energy solutions. • Mandatory renewable energy quotas will compel businesses to generate a part of their energy from renewable sources, with penalties for non-compliance. This intervention will drive up the renewable energy use in tertiary and industrial sectors, reducing the reliance on fossil fuels and cutting greenhouse gas emissions. • Tax breaks for green investments will offer companies tax exemptions / breaks when investing in renewable energy and energy efficiency. This incentive will contribute to reducing the overall cost of green investments, making them more appealing and encouraging the local businesses to adopt sustainable technologies, and implicitly accelerating the transition to a greener economy. • Grants and subsidies will provide financial aid, (e.g., low-interest loans) to be used for upgrading old systems and adopt new green technologies within factories and commercial buildings. These subsidies will offset the initial investments costs, making the energy-efficient and renewable technologies more accessible.
OUTCOME	• 10% reduction in natural gas from tertiary buildings, 20% reduction in natural gas from IPPU and green electrical energy generated but also increase in electrical energy required
RESPONSIBLE ENTITY / BODY / PERSON	All stakeholders foreseen for the Climate Neutrality Action Plan implementation
INVOLVED STAKEHOLDERS	All the stakeholders involved in implementing the Climate Neutrality Action Plan.
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 6,682.87 tons CO2/year from Buildings • 4,042.70 tons CO2/year from IPPU
% OF TOTAL CO2 REDUCTION	3.16%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	35,000 MWh/year electrical energy from solar
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	☐ Buildings: • -10,000.00 MWh/year electrical energy (electrical energy requirements for the city will increase after the implementation of this action) • 27,845.30 MWh/year natural gas • 10,000.00 MWh/year green electrical energy (energy generated from solar source) ☐ IPPU:

ACTION TITLE	**PACKAGE OF POLICIES, INCENTIVES AND MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES.**
	• -10,000.00 MWh/year electrical energy (electrical energy requirements for the IPPU sector will increase after the implementation of this action) • 16,844.60 MWh/year natural gas • 20,000.00 MWh/year green electrical energy (energy generated from solar source)
TIMELINE (START AND END)	2026-2035

A15. CITIZEN INVOLVEMENT INITIATIVES FOR INCREASED SUSTAINABILITY.

ACTION TITLE	**CITIZEN INVOLVEMENT INITIATIVES FOR INCREASED SUSTAINABILITY.**
TYPE OF ACTION	Other interventions
SCALE AND TARGET GROUP (ADDRESSED ENTITIES)	Brașov Metropolitan Area
FIELD OF ACTION	Social innovation
SYSTEMIC LEVER	Democracy/Participation
EMISSION DOMAIN(S)	Buildings
COVERED INTERVENTIONS	• Participatory budgeting for green projects • Digital platform where citizens can suggest, discuss, and develop sustainability initiatives. Platform also acts as a hub for organising carpooling, sharing tools and resources, or trading goods to reduce waste. • Workshops and courses on sustainable practices such as energy conservation techniques, benefits of electric vehicles, and ways to improve home energy efficiency. • Hackathons for local sustainable solutions • Competitions for sustainability: involve citizens in competitions to determine which community has the best urban garden or which apartment block requires the least amount of energy and incentivize them to follow sustainable practices. • Research projects that target citizen involvement in climate neutrality actions that include pilot projects such as: cooperative energy projects, community investment funds, gamification and behaviour change etc.
BRIEF DESCRIPTION	This action aims to enhance the citizens' participation in processes and projects that will facilitate Brașov's journey towards climate neutrality. Consequently, the proposed interventions cover a range of approaches designed to address various interconnected areas: financing, collaboration, engagement, awareness and education.
OUTCOME	• 5% reduction in natural gas from residential buildings • 1% reduction from natural gas from tertiary buildings

	• 5% reduction in electrical energy from tertiary buildings • 1% reduction in electrical energy from residential buildings
RESPONSIBLE ENTITY / BODY / PERSON	All stakeholders foreseen for the Climate Neutrality Action Plan implementation
INVOLVED STAKEHOLDERS	All the stakeholders involved in implementing the Climate Neutrality Action Plan
GHG EMISSIONS REDUCTION ESTIMATE (TOTAL) PER EMISSION SOURCE SECTOR	• 17,144.98 tons CO2/year
% OF TOTAL CO2 REDUCTION	3.86%
GENERATED RENEWABLE ENERGY (IF APPLICABLE)	
REMOVED / SUBSTITUTED ENERGY, VOLUME OR FUEL TYPE	• 2,635.11 MWh/year electrical energy • 68,855.35 MWh/year natural gas
TIMELINE (START AND END)	2026-2035

Present the targeted actions grouped together according to each field of action. Use one sheet for each distinct field of action, following the template provided below.

➔ **Make sure to also include within this section the actions pertaining to Organisational and Governance Innovation, as well as the actions related to Social and Other Innovation fields.**

PORTOFOLIO OF ACTIONS

FIELD OF ACTION	**SUSTAINABLE URBAN MOBILITY**
LIST OF COVERED ACTIONS	• Increasing the attractiveness and use of public transport • Encouraging non-motorized trips around the 15-minute neighbourhood concept • Encouraging the use of EV

FIELD OF ACTION	**GREEN INFRASTRUCTURE AND NATURE-BASED SOLUTIONS**
LIST OF COVERED ACTIONS	• Extension and rehabilitation of green areas, including through the reconversion of brownfield areas • Consolidation of green-blue corridors at city and metropolitan level

FIELD OF ACTION	**WASTE AND CIRCULAR ECONOMY**

LIST OF COVERED ACTIONS	• Enhancing the integrated management of municipal waste and circular economy

FIELD OF ACTION	**BUILT ENVIRONMENT**
LIST OF COVERED ACTIONS	• Energy renovation of public buildings • Energy renovation of residential buildings • New NZEB+ public buildings

FIELD OF ACTION	**ENERGY SYSTEMS**
LIST OF COVERED ACTIONS	• Rehabilitation of the district heating system • Development of new RES generation capacities • Climate-proofing of public lighting system

FIELD OF ACTION	**ORGANISATIONAL AND GOVERNANCE INNOVATION (CROSS-CUTTING)**
LIST OF COVERED ACTIONS	• Package of policies, incentives and punitive measures to incentivize households to switch to green energy sources. • Package of policies, incentives and punitive measures to incentivize the tertiary and industrial sector to switch to green energy sources.

FIELD OF ACTION	**SOCIAL AND OTHER INNOVATION (CROSS-CUTTING)**
LIST OF COVERED ACTIONS	• Citizen involvement initiatives for increased sustainability

IMPACT PATHWAYS

Provide a brief description of the theory of change you will use to achieve climate neutrality.

- ➔ **Use both textual and visual elements, as appropriate, to illustrate the impact pathways, which will be furtherly presented in the subsequent table.**
- ➔ **Make sure to also include within this section the actions pertaining to Organisational and Governance Innovation, as well as the actions related to Social and Other Innovation fields.**

(insert here: text + if necessary, relevant visuals - pictures, figures, charts)

IMPACT PATHWAYS

FIELDS OF ACTION	SYSTEMIC LEVERS	EARLY CHANGES (1-2 YEARS)	LATE OUTCOMES (3-4 YEARS)	DIRECT IMPACTS (EMISSION REDUCTIONS)	INDIRECT IMPACTS (CO-BENEFITS)
ENERGY SYSTEMS	Technology / Infrastructure	Energy-efficient district heating system, based on cogeneration, solar panels, rehabilitated heat transport network and distribution equipment, available to new consumers	Decarbonisation of district heating system, by replacing gas cogeneration with renewable sources (photovoltaic and solar panels, heat pumps, biomass); rehabilitation and extension of transport and supply network to reduce heat loss and connect new consumers	Reduce CO2 emissions by 69,993.52 tons over 2021	Improved air quality Lower energy supply costs Lower risk of energy poverty
	Technology / Infrastructure	90% of the public electricity consumption covered by own RES facilities (municipal solar park)	Public electricity consumption completely secured by municipal RES capacities and energy excedent traded at market prices for additional revenues	Reduce CO2 emissions by 100,243.53 tons over 2021	Lower energy supply costs Improved air quality Additional public revenues from energy trading
	Technology / Infrastructure	A territorial-balanced network of minimum		Reduce CO2 emissions by	Improved air quality

		218 public charging stations for EVs		10,932.32 tons over 2021	Additional public revenues from energy supply
	Technology / Infrastructure	70% of the municipal lighting system using energy-efficient (LED) technology and telemanagement	Municipal public lighting system fully equipped with LED bulbs using RES and telemanagement	Reduce CO2 emissions by 1,089.19 tons over 2021	Lower costs with the public lighting system Improved quality of public lighting Increased public safety
SUSTAINABLE URBAN MOBILITY	Technology / Infrastructure	Over 200 electric and hybrid public transport vehicles operating within the city boundaries and metropolitan area	Municipal and metropolitan public transport fleet fully electric/hybrid, using dedicated lanes, a modern ITS, a new bus garage, energy supply facilities; changes in the modal split favourable to public transportation	Reduce CO2 emissions by 54,111.81 tons over 2021	Improved air quality Reduce traffic congestion and noise pollution Decreasing number of car accidents Improved comfort for passengers
	Technology / Infrastructure	Extended network of bicycle lanes and pedestrian areas around the 15- minute city concept	Integrated network of bicycle lanes and pedestrian corridors at city and metropolitan level; higher modal share of non-motorized trips	Reduce CO2 emissions by 43,966.36 tons over 2021	Improved air quality Reduce traffic congestion and noise pollution Saving related to mobility costs
	Governance & Policy	Mix of local policies encouraging the purchase of electric vehicles (vouchers – ”Rabla Local”, cuts in parking fees and local taxes, dedicated parking lots etc.)	Public vehicle fleet fully electric/hybrid; minimum 50% of the private fleet electric/hybrid by 2035	Reduce CO2 emissions by 3,380.08 tons over 2021	Improved air quality
WASTE AND CIRCULAR ECONOMY	Technology / Infrastructure	Consolidation of the municipal infrastructure for separate waste collection (digitised	Higher share (60%) of solid municipal waste that is recycled and reused	Reduce CO2 emissions by 1,059.82 tons over 2021	Diminished olfactory pollution and costs associated with waste disposal

		ecological islands, centre for voluntary collection)			New business and job opportunities in the recycling sector
GREEN INFRASTRUCTURE AND NATURE BASED SOLUTIONS	Technology / Infrastructure	Modernization of existing green areas and creation of minimum 12 hectares of new parks	Public green areas open and accessible to all citizens within 15 minutes of walking from their residence	Abate 13,146.91 tons of CO2 emissions over 2021	Reduction of UHI effect Additional recreational opportunities Urban renewal of former brownfield areas Improved air quality
	Technology / Infrastructure	Development of green-blue corridors along the two most important rivers that cross the city	Integrated network of metropolitan green-blue corridors for multiple ecosystem functions (environmental, recreational, risk management etc.)	Abate 2,186.46 tons of CO2 emissions over 2021	Improved quality of life Urban cooling effect Improved air quality Additional recreational opportunities
BUILT ENVIRONMENT	Technology / Infrastructure	Energy renovation of minimum 30 public buildings	Energy renovation of all public buildings, including solar / photovoltaic panels, heat pumps, BMS etc.	Reduce CO2 emissions by 6,728.68 tons over 2021	Lower heating, cooling and maintenance public expense Improved air quality Better conditions for citizens and public servants Improved esthetics of public buildings
	Technology / Infrastructure	Energy renovation of minimum 100 multi-	Energy renovation of at least 80% of	Reduce CO2 emissions by	Improved quality of life

		apartment residential buildings	the multi-apartment residential buildings erected before 1990	152,881.69 tons over 2021	Improved air quality Urban renewal of disadvantaged neighbourhoods Limiting urban sprawl Lower energy poverty risk
	Technology / Infrastructure	Delivering at least 10 nZEB+ public buildings	All new public buildings compliant with nZEB+ standards	Reduce CO2 emissions by 6,728.68 tons over 2021	Lower heating, cooling and maintenance public expense Improved air quality Better conditions for citizens and public servants
SOFT INTERVENTIONS (GOVERNANCE INNOVATION AND SOCIAL INNOVATION)	Governance & Policy	At least 50 companies from a mix of local policies targeting the transition to green energy sources	Energy savings of at least 20% thanks to the mix of local policies for private companies	Reduce CO2 emissions by 14,648.66 tons over 2021	Mobilisation of private funding for achieving climate neutrality Better conditions for employees Improved competitiveness of local companies and compliance with ESG standards Improved air quality
	Democracy / participation	Calendar of citizen involvement opportunities cultivating behavioural changes favourable to climate neutrality	Establishment of an active community of citizens interested in promoting and adopting a set of measure to reduce	Reduce CO2 emissions by 18,356.21 tons over 2021	Enhanced civic innovation Broader local commitment for climate neutrality

			their individual carbon footprint		Increased visibility of the climate transition process Improved transparency of public policies

STRATEGY FOR RESIDUAL EMISSIONS

Describe your approach to managing residual emissions.

As mentioned earlier, following the implementation of all the interventions outlined in this Action Plan, there will be approximately 109,479.75 tons of CO2 remaining at the local level.

The strategy for these residual emissions envisages 3 main approaches:

1. Further greening action s that are at the moment uncertain due to land ownership. Therefore future new green spaces should be realised within planned residential development projects, or as greening initiatives of the city hall (ex. urban forest created around the CATTIA business center with the help of volunteers or a new park close to the Stupini train station). According to the Green Infrastructure Strategy, additional 110 ha of public green spaces could be unlocked but with a higher effort (expropriations needed).
2. Innovative solutions that are not yet mature in terms of technology or project development such as the CET Energy Hub with a new photovoltaic park (15 MW/year), hydrogen production and storage (incl. a possible acquisition of hydrogen buses), a wind turbine (3 MW/year), a combined cooling, heat and power (CCHP) and biomass combined heat and power (CHP) plant. The concept would also greatly support the connection to the municipal district heating system.
3. Metropolitan greening projects such as the extension of blue green corridors along the Timis Canal, or a metropolitan green belt. While the exact dimensions and configuration of these is still uncertain, the larger initiative is an important part of the Metropolitan Development Plan (PATZM) that is being prepared at the moment. Finalization of the plan is expected for the first part of 2026.

Furthermore, as presented in the Current Policies and Strategies section and showcased in the below table, the local, metropolitan, and county strategies, plans, and programs include additional measures to reduce emissions in all of the key emission domains, complementing the interventions covered by this Action Plan and partially closing the current emission gap. Additionally, the Integrated Urban Development Strategy of the Brașov Metropolitan Area, the Sustainable Development Strategy of the Brașov Municipality, the Sustainable Energy and Climate Action Plan, and the Climate Change Adaptation Plan also target these domains, through dedicated priorities, objectives and projects.

Given that residential heating remains the major source of greenhouse gas emissions (80%), additional measures at national level should support energy renovation of buildings, their general rehabilitation as well as connecting to them to efficient heating and cooling sources. Make use of such measures, with the help of guidance from local stakeholders, citizen could greatly decrease energy consumption for heating and cooling.

Table 2 Local Strategic Documents which (In)Directly Target CO2 Reductions

EMISSION DOMAIN	RESIDUAL EMISSIONS FOLLOWING THE IMPLEMENTATION OF THE PLANNED ACTIONS	OTHER LOCAL STRATEGIC DOCUMENTS AND PROGRAMS AIMED AT ADDRESSING EMISSIONS WITHIN THE EMISSION DOMAIN
BUILDINGS	19,897.59 CO2 tons	• STRATEGY FOR REHABILITATION OF RESIDENTIAL SECTOR • LOCAL STRATEGY FOR DISTRICT HEATING SERVICE FOR THE POPULATION IN BRAŞOV MUNICIPALITY
TRANSPORT	13,828.76 CO2 tons	• SUSTAINABLE URBAN MOBILITY PLAN (SUMP) • VELO MASTERPLAN • NOISE ACTION PLAN
WASTE	969.90 CO2 tons	• INTEGRATED WASTE MANAGEMENT PLAN - BRAŞOV COUNTY • REGIONAL MASTER PLAN FOR WATER AND WASTEWATER
INDUSTRIAL PROCESS AND PRODUCT USE (IPPU)	9,505.72 CO2 tons	• AIR QUALITY INTEGRATED PLAN 2023-2027
AGRICULTURAL, FORESTRY, AND LAND USE (AFOLU)	679.52 CO2 tons	• GENERAL URBAN DEVELOPMENT PLAN • GREEN INFRASTRUCTURE STRATEGY 2024-2043

SUBSIDIARY MEASURES

Regarding both the carbon reduction and its sequestration, we also note the upcoming projects that are presently unknown, as they could arise from potential invitations to be extended by various external partners for collaborative projects developed by international consortia, or from initiatives launched by the local ecosystem (especially considering the funding calls set to be launched in the coming years, both nationally and internationally).

Moreover, alongside the implementation of the interventions outlined in the Action Plan and the execution of the relevant measures covered by the other local strategic documents, **in the upcoming period the Municipality aims to explore the following solutions for managing the residual emissions remaining from the implementation of this Action Plan:**

- ☐ **EDUCATIONAL AND COMMUNITY INITIATIVES:** The Municipality aims to enhance its support for local educational institutions in integrating sustainability into their curricula, potentially through school initiatives and programs promoting sustainable practices. Moreover, it is interested in understanding how workshops, seminars, and green challenges could engage local young minds in real-world problem-solving processes related to environmental and climate issues. Additionally, the Municipality seeks to expand this educational framework in collaboration with local NGOs, possibly through community gardens and rooftop farms, which could offer hands-on learning experiences for pupils, serving dual purposes: reducing urban heat islands and acting as centers for community engagement and education on sustainable urban agriculture.
- ☐ **TECHNOLOGICAL ADVANCEMENTS:** The Municipality is interested in exploring collaborations with the local start-ups, academic institutions, and RDI centers, in order to leverage technology for advancing towards near-zero emissions. One area of particular interest involves the implementation of advanced data analytics and IoT solutions, in order to enhance the monitoring and management of the air quality and traffic conditions. This aims to optimize local traffic flows and reduce vehicle emissions. Furthermore, the Municipality aims to deploy IoT technologies, for streamlining the energy consumption in both private and public infrastructure and for ensuring that the lighting, traffic systems, and municipal services operate at peak efficiency, such as to minimize waste.
- ☐ **ENERGY AND WASTE MANAGEMENT:** In addition to the interventions outlined in this Action Plan, the Municipality aims to incorporate the development of advanced waste-to-energy technologies into its energy and waste management approach. These facilities would not only reduce landfill mass but also capture and convert waste into valuable electricity and heat, potentially offsetting the remaining carbon emissions associated with waste. Furthermore, the Municipality seeks to develop local composting programs in collaboration with the local NGOs, aiming to address the organic waste by exploring methods to convert the potential methane emissions into productive compost for agricultural and landscaping purposes.
- ☐ **URBAN INFRASTRUCTURE AND TOURISM:** Another area of interest for the Municipality refers to the investments in infrastructure such as green roofs, walls, and large-scale battery storage systems. These investments could significantly improve the energy efficiency, storage capabilities, and

overall resilience, allowing for an effective management of the renewable resources and also for the stabilization of the energy grid. The Municipality is particularly interested in exploring ways to further incentivize the installation of home battery systems, aiming to empower residents to directly contribute to the local energy efficiency efforts, such as storing the solar energy generated during peak hours for later uses. On the tourism front, the Municipality is already promoting eco-tourism and aims to encourage sustainability certifications among the local hotels and attractions in the future. These measures could not only reduce the emissions, but also enhance the Municipality's image as a Green Capital and a sustainable tourism destination.

- ☐ **RECYCLING AND REUSE:** Finally, the Municipality aims to advocate for and potentially support the development of local recycling facilities. Additionally, in line with the European circular economy recommendations, it aims to encourage the reuse and refurbishment of electronics and other items. This endeavours is driven by the potential benefits of expanding the local recycling capacity, which could reduce the local industry's reliance on new raw materials and consequently decrease the energy consumption and emissions linked to production and transportation.

Through these integrated approaches, the Municipality could create a robust framework for sustainability that would not only reduce the carbon footprint, but also enhance the quality of life for the residents, setting a benchmark for cities worldwide aiming for similar green objectives by 2035.

INDICATORS FOR MONITORING, EVALUATION AND LEARNING

MONITORING, EVALUATION AND LEARNING (MEL) FRAMEWORK

The main indicator for monitoring the CCC is the reduction of CO2 emissions (total and by sector) along with annual mean concentrations of PM 2.5, PM10 and NO2[22]. CO2 emissions will be monitored with the support of the SICAP and the Energy Manager Unit on a yearly basis with a more detailed overhaul after 5 years when the SICAP is being renewed. CO2 emission values are calibrated with yearly emissions data from Googles Environmental Insights Explorer and Climate Trace. Based on the network of air quality sensors[23] monitoring of PM 2.5, PM10 and NO2 is possible on a day-to-day basis, and for the purpose of the CCC on a yearly basis.
Direct monitoring of actions is ensured by a package of 15 indicators, either outcome or output (if no better option is available). Most of these, especially output indicators can be monitored on a yearly basis. Exceptions are those related to the modal share,
The monitoring of the CCC will be coordinated by the Energy Manager Unit, but with the support of the Municipality and BMA. The Energy Manager Unit will collaborate with other associations, agencies, city hall departments and service providers to update indicators on a yearly basis (excepting the modal split). Following entities shall provide data for monitoring:

- BTA – transport related indicators (I1, I2, I3)
- Brașov City Hall, Environmental Protection Compartment – environment related factors (I4 and I5)
- Brașov City Hall, Investment Department, Technical Department and Local Public Administration and Heritage Department – buildings related indicators (I7, I8, I9),
- Brașov City Hall, Local Public Service for District Heating Brașov[24] - responsible for district heating data (I10)
- Brașov City Hall, Technical Department, Service for Contract Oversight, Garbage collection, Snow Removal and Environmental Protection (I6)
- Brașov City Hall, Technical Department, Public lightning service – responsible for public lighting data (I12)
- Energy manager unit for community-oriented indicators and energy consumption / production data (I11, I13, I14, I15).

The list of responsible entities for monitoring is indicative and can be changed along with adaptations within the organisational structure of the city hall, based on the evolution of relations with external organisations (BMA, BTA etc.) or other factors.

[22] AQIA is still being updated. Therefore, PM 2.5, PM10 and NO2 targets for 2027, 2030, 2035 are to be aligned with the final version of the action plan.
[23] https://www.uradmonitor.com/ - to be extended for a better coverage.
[24] Serviciul Public Local de Termoficare Brașov (S.P.L.T. Brașov).

PORTOFOLIO OF INDICATORS

ACTION	OUTCOME / IMPACT ADDRESSED	INDICATOR TITLE	INDICATOR CODE	TARGET VALUES		
				2027	2030	2035
Increasing the attractiveness and use of public transport	**Trips made by public transport / year**	Public transport trips	BV-NZC-I1	48 mil	52 mil	55 mil
Encouraging non-motorized trips around the 15-minute neighbourhood concept	**Share of daily trips by non-motorised means (%)**	Modal share	BV-NZC-I2	23%	30%	38%
Encouraging the use of electric vehicles	**Share of electric vehicles out of total private and commercial fleet (%)**	Modal share	BV-NZC-I3	5%	15%	30%
Extension and rehabilitation of green areas, including through the reconversion of brownfield areas	**Hectares of green spaces created / rehabilitated**	Green spaces	BV-NZC-I4	12 ha	20 ha	40 ha
Consolidation of green-blue corridors at city and metropolitan level	**Km of waterfront open to public**	Waterfront	BV-NZC-I5	6 km	10 km	20 km
Enhancing the integrated management of municipal waste and circular economy	**Share of separate waste collection (%)**	Separate waste collection	BV-NZC-I6	30%	50%	60%
Energy renovation of public buildings	**Share of renovated municipal buildings (%)**	Public sector energy savings	BV-NZC-I7	70%	80%	90%
Energy renovation of residential buildings	**Share of renovated residential buildings (%)**	Private sector energy savings	BV-NZC-I8	*30%*	*40%*	*60%*
New NZEB public buildings	**Share of new NZEB public buildings (%)**	Public sector energy savings	B-NZC-I9	80%	100%	100%
Rehabilitation of the district heating system	**Percentage decrease in the district heating system losses (%)**	Public sector energy savings	BV-NZC-I10	16%	20%	35%

Development of new RES generation capacities	**Share of municipal electricity consumption supplied from own renewable sources (%)**	Renewable energy	BV-NZC-I11	100%	100%	100%
Climate-proofing of public lighting system	**Share of energy efficient bulbs for public lighting (%)**	Public sector energy savings	BV-NZC-I12	70%	90%	100%
Package of policies, incentives and punitive measures to incentivize households to switch to green energy sources.	**Share of households involved in sustainability programs (%)**	Green energy for households	BV-NZC-I13	10%	50%	80%
Package of policies, incentives and punitive measures to incentivize the tertiary and industrial sector to switch to green energy sources.	**Share of IPPU companies involved in sustainability programs (%)**	Green energy for IPPU	BV-NZC-I14	20%	95%	100%
Citizen involvement initiatives for increased sustainability	**Number of citizen involvement initiatives for sustainability**	Citizen involvement	BV-NZC-I15	3	15	20

For every proposed indicator, fill out one Metadata Indicator sheet, by using the template provided below.

INDICATOR METADATA

[I1] Increasing the attractiveness and use of public transport

INDICATOR NAME	**Trips made by public transport / year**
INDICATOR UNIT	Number
DEFINITION	The proportion of total daily trips made using public transportation within Brașov. Metropolitan trips are not accounted because data is only available for RATBV while there are localities still served by county public transport – private service providers.
CALCULATION	RATBV yearly ticket sales calibrated with daily passenger measurements from AVL and manual counts. Data can be also calibrated with modal split that is calculated at each SUMP update.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes

IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Transport
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Improved air quality, Reduced traffic congestion and noise pollution, Decreasing number of car accidents, Saving related to mobility costs
CAN THE INDICATOR BE USED FOR MONITORING IMPACT PATHWAYS?	yes
IF YES, WHICH NZC IMPACT PATHWAY IS IT RELEVANT FOR?	Public transport operators
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	4
EXPECTED DATA SOURCE	
EXPECTED AVAILABILITY	Every 5 years
SUGGESTED COLLECTION INTERVAL	Comprehensive traffic study
DELIVERABLES DESCRIBING THE INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	

[I2] Encouraging non-motorized trips around the 15-minute neighbourhood concept

INDICATOR NAME	**Share of daily trips by non-motorised means (%)**
INDICATOR UNIT	Percent
DEFINITION	The proportion of total daily trips made using non-motorized modes of transportation such as walking or cycling.
CALCULATION	The total number of daily trips made by non-motorized means (walking, cycling, etc.) divided by the total number of daily trips, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Transport
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Improved air quality, Reduced traffic congestion and noise pollution, Increased public safety, Saving related to mobility costs
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	Surveys, pedestrian and cyclist counts
EXPECTED AVAILABILITY (1-5)	4
SUGGESTED COLLECTION INTERVAL	Every 5 years
DELIVERABLES DESCRIBING THE INDICATOR	Comprehensive traffic study
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I3] Encouraging the use of electric vehicles

INDICATOR NAME	**Share of electric vehicles out of total private and commercial fleet (%)**
INDICATOR UNIT	Percent
DEFINITION	The proportion of electric vehicles (EVs) in relation to the combined total of private and commercial vehicles.
CALCULATION	The total number of electric vehicles (EVs) in the private and commercial fleet divided by the total number of vehicles (both electric and non-electric), multiplied by 100.
DOES THE INDICATOR MEASURE	yes

INDICATOR NAME	**Share of electric vehicles out of total private and commercial fleet (%)**
DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Transport
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Improved air quality, Saving related to mobility costs
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Registration data from vehicle licensing authorities, EV sales reports
EXPECTED AVAILABILITY (1-5)	4
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Comprehensive traffic study
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

[I4] Extension and rehabilitation of green areas, including through the reconversion of brownfield areas

INDICATOR NAME	**Hectares of green spaces created / rehabilitated**
INDICATOR UNIT	Percent
DEFINITION	The total area of land converted into new green spaces and of green spaces rehabilitated.
CALCULATION	Measuring the total area of new green spaces created or rehabilitated.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	AFOLU
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes

INDICATOR NAME	**Hectares of green spaces created / rehabilitated**
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Urban renewal of former brownfield areas, Additional recreational opportunities, Reduction of Urban Heat Island (UHI) effect, Improved quality of life
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	CORINE Land Cover, National Institute of Statistics
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Local register of green spaces
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I5] Consolidation of green-blue corridors at city and metropolitan level

INDICATOR NAME	**Hectares of green spaces created / rehabilitated**
INDICATOR UNIT	Percent
DEFINITION	The total area of land converted into new green spaces and of green spaces rehabilitated.
CALCULATION	Measuring the total area of new green spaces created or rehabilitated.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	AFOLU
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Urban renewal of former brownfield areas, Additional recreational opportunities, Reduction of Urban Heat Island (UHI) effect, Improved quality of life
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	CORINE Land Cover, National Institute of Statistics
EXPECTED AVAILABILITY (1-5)	5

INDICATOR NAME	**Hectares of green spaces created / rehabilitated**
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Local register of green spaces
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I6] Enhancing the integrated management of municipal waste and circular economy

INDICATOR NAME	**Share of separate waste collection (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage of waste that is collected separately. Separate collection means the collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment (Directive 2008/98/EC).
CALCULATION	The total weight or volume of waste collected separately divided by the total weight or volume of collected waste, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Waste
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Diminished olfactory pollution and costs associated with waste disposal, New business and job opportunities in the recycling sector
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	County Environmental Protection Agency
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Annual report of the County Environmental Protection Agency
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	2021-2027 ERDF-CF-JTF Common Indicators (RCR103)

[I7] Energy renovation of public buildings

INDICATOR NAME	**Share of renovated municipal buildings (%)**
INDICATOR UNIT	Percent
DEFINITION	The proportion of municipal buildings that have undergone renovation.
CALCULATION	The number of renovated municipal buildings divided by the total number of municipal buildings, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Buildings
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower heating, cooling and maintenance public expenses, Improved aesthetics of public buildings, Better conditions for citizens and public servants
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I8] Energy renovation of residential buildings

INDICATOR NAME	**Share of renovated residential buildings (%)**
INDICATOR UNIT	Percent
DEFINITION	The proportion of residential buildings that have been renovated.
CALCULATION	The number of renovated residential buildings divided by the total number of residential buildings, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN	yes

INDICATOR NAME	**Share of renovated residential buildings (%)**
GREENHOUSE GAS EMISSIONS?)	
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Buildings
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower energy supply costs, Lower risk of energy poverty, Improved quality of life, Urban renewal of disadvantaged neighbourhoods, Limiting urban sprawl
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	yes
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Annual report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I9] New NZEB public

INDICATOR NAME	**Share of new NZEB+ public buildings (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage of newly constructed public buildings meeting nearly zero-energy building (NZEB) standards.
CALCULATION	The number of newly constructed public buildings meeting NZEB+ standards divided by the total number of new public buildings, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Buildings
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower heating, cooling and maintenance public expenses, Better conditions for citizens and public servants

INDICATOR NAME	**Share of new NZEB+ public buildings (%)**
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

[I10] Rehabilitation of the district heating system

INDICATOR NAME	**Percentage decrease in the district heating system losses (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage reduction in energy losses within the district heating system.
CALCULATION	The difference between the initial and final losses in the district heating system, divided by the initial losses, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Buildings
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Improved air quality, Lower energy supply costs, Lower risk of energy poverty
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Brașov District Heating Company
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually

INDICATOR NAME	**Percentage decrease in the district heating system losses (%)**
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

[I11] Development of new RES generation capacities

INDICATOR NAME	**Share of municipal electricity consumption supplied from own renewable sources (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage of electricity consumed by municipal facilities that is generated from local renewable sources.
CALCULATION	The amount of electricity generated from municipal renewable sources by the total municipal electricity consumption, multiplied by 100
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower energy supply costs, Improved air quality, Additional public revenues from energy trading
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

[I12] Climate-proofing of public lighting system

INDICATOR NAME	**Share of energy efficient bulbs for public lighting (%)**
INDICATOR UNIT	Percent
DEFINITION	The proportion of energy-efficient light bulbs used in public lighting systems.
CALCULATION	The number of energy-efficient bulbs used for public lighting by the total number of bulbs installed, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Transport (CO2 emissions from public lighting were accounted for in the Transport sector).
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower costs with the public lighting system, Improved quality of public lighting
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Public lighting operator
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities, Romania Urban Policy Indicators

[I13] Package of policies, incentives and punitive measures to incentivize households to switch to green energy sources.

INDICATOR NAME	**Share of households involved in sustainability programs (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage of households participating in sustainability programs implemented by the Brașov City Hall

INDICATOR NAME	**Share of households involved in sustainability programs (%)**
CALCULATION	The number of households involved in sustainability programs (tax credits, grants and low-interest loans for energy renovation, carbon taxes, mandates for new buildings) divided by the total number of households, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Buildings
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Lower energy supply costs, Lower risk of energy poverty, Improved quality of life
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

[I14] Package of policies, incentives and punitive measures to incentivize the tertiary and industrial sector to switch to green energy sources.

INDICATOR NAME	**Share of IPPU companies involved in sustainability programs (%)**
INDICATOR UNIT	Percent
DEFINITION	The percentage of private companies in the IPPU sector engaged in sustainability programs implemented by the Brașov City Hall (mandatory renewable energy quotas, tax breaks for green investments, low-interest loans for retrofitting and green technologies).
CALCULATION	The number of private companies in the IPPU sector participating in sustainability programs divided by the total number of companies in the IPPU sector, multiplied by 100.
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	yes

INDICATOR NAME	**Share of IPPU companies involved in sustainability programs (%)**
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	Industrial Processes and Product Use (IPPU)
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Mobilisation of private funding for achieving climate neutrality, Better conditions for employees, Improved competitiveness of local companies and compliance with ESG standards
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Brașov City Hall
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Internal report
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	2021-2027 ERDF-CF-JTF Common Indicators (RCO121a)

[I15] Citizen involvement initiatives for increased sustainability

INDICATOR NAME	**Number of citizen involvement initiatives for sustainability**
INDICATOR UNIT	Number
DEFINITION	The total count of initiatives or projects (e.g., events, trainings, workshops) involving citizen participation aimed at promoting sustainability organised by the Municipality or in partnership with other actors.
CALCULATION	Count of initiatives organised
DOES THE INDICATOR MEASURE DIRECT IMPACTS (I.E. REDUCTION IN GREENHOUSE GAS EMISSIONS?)	no
IF YES, WHICH EMISSION SOURCE SECTORS DOES IT IMPACT?	N/A
DOES THE INDICATOR MEASURE INDIRECT IMPACTS (I.E. CO-BENEFITS)?	yes
IF YES, WHICH CO-BENEFIT DOES IT MEASURE?	Broader commitment for climate neutrality at local level, Enhanced civic innovation

INDICATOR NAME	**Number of citizen involvement initiatives for sustainability**
IS THE INDICATOR CAPTURED BY THE EXISTING CDP/ SCIS/ COVENANT OF MAYORS PLATFORMS?	no
EXPECTED DATA SOURCE	Internal activity reports
EXPECTED AVAILABILITY (1-5)	5
SUGGESTED COLLECTION INTERVAL	Annually
DELIVERABLES DESCRIBING THE INDICATOR	Activity reports - Brașov Municipality
OTHER INDICATOR SYSTEMS USING THIS INDICATOR	N/A

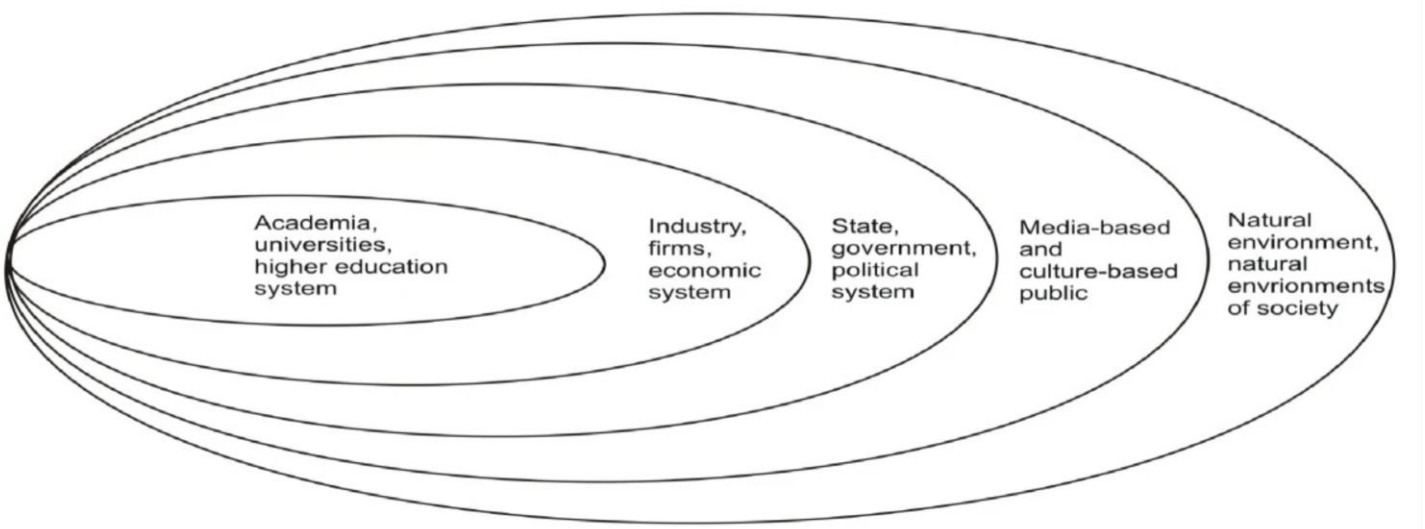
STAKEHOLDERS

Provide a concise overview of the key stakeholders who hold significant influence or impact on the local transition to climate neutrality.

- ➔ **Make sure to also address the internal and external stakeholders that are relevant to the climate neutrality transition in terms of the necessary financing. For these stakeholders, address the funding issues both in the influence and interest columns, where applicable.**

Brașov's transition to climate neutrality is a comprehensive objective that requires action across all sectors, at various territorial levels. Considering the complexity and novelty of the topic, the stakeholder mapping and engagement activities considered all subsystems of the Quintuple Helix innovation model (Figure 4). The model bridges social ecology with knowledge production and innovation and suits the pursuit of climate neutrality, as "in the approach of the Quintuple Helix innovation model, the natural-environments-of-society are being identified as opportunities for driving further and excelling the sustainable development and coevolution of knowledge economy, knowledge society, and knowledge democracy."[25]

Figure 4 The subsystems of the Quintuple Helix innovation model



*Source: Carayannis, E.G., Barth, T.D. & Campbell, D.F. The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. J Innov Entrep **1**, 2 (2012). https://doi.org/10.1186/2192-5372-1-2*

The implementation of Brașov's Climate Neutrality Action Plan is not the responsibility of a single individual or institution, but requires the involvement of the entire local community: public institutions, civil society organizations, businesses, the professional sector, academia, and citizens, through a participatory, citizen-centred approach. Such stakeholders are essential in designing initiatives, mobilizing resources, implementing actions, and monitoring and evaluating the plan's overall progress. To this end, a range of potential local partners has been identified for the implementation of the plan and the development of

[25] *Carayannis, E.G., Barth, T.D. & Campbell, D.F. The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. J Innov Entrep **1**, 2 (2012). https://doi.org/10.1186/2192-5372-1-2*

projects within its portfolio. Some of these partners were engaged from the initial phase, contributing through data provision, information sharing, or surveys. Additionally, they will be consulted further in upcoming thematic working groups structured around impact pathways, and involved in the Local NetZero Coalition.

Stakeholder involvement in the development and implementation of the Action Plan was designed to foster dialogue among all relevant actors to achieve climate neutrality, sustainable urban development, and innovation, guided by the Quintuple Helix model:

- **In the public sector,** establishing a framework for cross-sectoral cooperation across all the departments of the Brașov City Hall and with the neighbouring local, metropolitan, regional, and central authorities is essential. This ensures alignment of local policies, measures, and funding to consolidate actions outlined in the Action Plan.
- **The participation of academia and RDI organisation** is essential as it has the potential to drive change through both RDI and educational initiatives, by conducting cutting-edge research on renewable energy, climate neutrality and sustainable urban planning, facilitating data sharing and offering evidence-based recommendations to other stakeholders, and educating citizens and professionals on climate science and sustainability practices. The Municipality has a longstanding collaboration with local and national universities, that can be leveraged in the pursuit for climate neutrality.
- **The participation of the local private sector** is essential as it has the potential to drive change within the economic sector, a significant source of CO2 emissions. It holds the potential to redefine societal functions, consumption patterns, and lifestyles through its resources, activities, products, services, and target audiences. Thus, it serves as a catalyst for green economic growth and constructing resilient communities in Brașov and its metropolitan area.
- **Enhancing the collaboration with the local NGOs** can yield significant outcomes for the city and its metropolitan area. These encompass advocacy initiatives, community engagement efforts, capacity-building endeavours, educational programmes, partnership building, project implementation activities, as well as support, monitoring, and reporting efforts. Brasov benefits from an active civil society on environmental, sustainable development and energy-efficiency topics, which will be an asset in achieving its climate neutrality objectives while building a sustainable, resilient community. Additionally, NGO partners promote knowledge sharing, advance behaviour change within the local community, and encourage innovative approaches and social innovation.
- **The citizens of Brașov** play a central role in the local transition to climate neutrality as primary advocates for change at the grassroots level. Their engagement can bring about changes in behaviour towards the adoption of climate-friendly practices in daily life. These practices may include reducing energy consumption, conserving water, minimising waste generation, and choosing eco-friendly transportation options such as walking, cycling, or using public transport. Such actions contribute to reducing carbon footprints and saving time. Ultimately, citizens could serve as overseers, monitoring local climate action progress and ensuring public administration accountability for commitments to climate neutrality in Brașov and its metropolitan area.

- ☐ **Other catalysts:**
  - **Funding entities:** Strategic allocation of resources and prioritisation of climate-friendly investments by funding entities could drive Brașov towards a more climate-neutral and resilient future.
  - **Interjurisdictional development associations:** Interjurisdictional development associations act as collaborative platforms for neighbouring administrative units, pooling resources and expertise for climate action on a larger scale. Through partnerships, knowledge exchange, and joint projects, these associations leverage economies of scale to address common climate challenges within the Brașov Metropolitan Area. They also facilitate larger-scale climate plans and advocate for supportive policies.

The Stakeholder Analysis shows the main stakeholders categories and stakeholders identified and / or engaged so far:

PRIMĂRIA MUNICIPIULUI BRAȘOV

STAKEHOLDERS ANALYSIS

STAKEHOLDER	**SYSTEM** (e.g., infrastructure, capacities, processes, alliances, funds etc.)	**NETWORK** (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
SIGNATORIES OF THE CLIMATE NEUTRALITY ACTION PLAN					
Brașov Municipality	Processes	Public administration	By engaging with the citizens, the local ecosystem, and diverse external stakeholders, the City Hall will develop, implement, evaluate, and monitor the interventions delineated in the Climate Neutrality Action Plan for Brașov city.	Advancing efforts to address climate-related concerns and issues that are tailored to the needs of the local community. Activating all the stakeholders, meeting the specified indicators and reaching the targets outlined in the Climate Neutrality Action Plan.	High; initiator and coordinator
Brașov Metropolitan Agency for Sustainable Development (BMA)	Processes	Public administration/ NGO	BMA has been involved in the development of the Action Plan, providing technical expertise to the Municipality, and will continue to assist Brasov Municipality during the implementation process. As a metropolitan body working on sustainable development, BMA will broaden the scope of the climate neutrality vision, measures, and collaboration, extending from the local level to encompass the entire Brașov metropolitan area.	Fostering sustainable development and climate neutrality at metropolitan level.	High; partner and co-creator

STAKEHOLDER	SYSTEM (e.g., infrastructure, capacities, processes, alliances, funds etc.)	NETWORK (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
Brașov Transport Association (BTA)	Capacities, Alliances	Public administration/ NGO	Promoting sustainable urban mobility and providing efficient, low-emission, and high-quality public transportation services that meet the needs of all citizens.	Fostering sustainable urban mobility at metropolitan level, improving the fleet and expanding the green public transportation network.	High; partner
Brașov County Council	Alliances	Public administration	The County Council's backing is instrumental in propelling efforts to attain climate neutrality goals at the county level. By highlighting Brașov as a model of best practices for other municipalities, and actively assisting the city's transition to a carbon-neutral status, the Council fosters collective progress towards sustainable environmental stewardship.	Scaling Brașov's climate neutrality transition model at the county level. Mainstreaming the topics of energy efficiency and renewable energy promoted through the One-Stop Energy Efficiency Desk for Brașov County of ADDJB (see below).	Moderate; potential partner
Transilvania University of Brașov	Capacities	Education & RDI	Engaging in educational and RDI initiatives and integrating curriculum tailored to advancing climate neutrality goals.	Fostering innovative solutions and offering academic and RDI programmes/ opportunities geared towards achieving climate neutrality, building and sharing knowledge	High; potential partner
Agency for Energy Management and Environmental Protection Brașov (ABMEE)	Capacities, Alliances	NGO, civil society	Implementing interdisciplinary projects for sustainable development, facilitating the transition to clean energy, providing technical assistance to public authorities, promoting	Supporting local energy efficiency, renewable energy sources, and sustainable	Moderate; partner

STAKEHOLDER	SYSTEM (e.g., infrastructure, capacities, processes, alliances, funds etc.)	NETWORK (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
			energy efficiency and renewable energy concepts, organising events and collaborating with national and international counterparts for experience exchange, knowledge building.	development, building and sharing knowledge	
Cities Energy Romania Association (OER)	Capacities, Alliances	NGO, civil society	Represents local authorities in relation to national institutions and supports them in implementing efficient energy and climate policies.	Advancement of energy efficiency and climate policies and targets at local level, sharing knowledge and expertise	Moderate; potential partner
Centre Regional Development Agency	Funding	RDA	Providing financial support for public and private initiatives focused on attaining climate neutrality.	Addressing the outlined priorities in the Central Regional Program.	High; funding managing authority (Centre Regional Programme)
Brașov Environmental Protection Agency	Processes, Capacities	Public administration	Project approval, educational and awareness campaigns, to bolster the resilience of natural systems against climate change, while advocating for climate neutrality.	Reducing human and climatic impacts on the environment while enhancing resilience to climate change.	High; approval and advisory body
Brașov Agency for Sustainable Development (ADDJB)	Alliances	Public administration, NGO	Intercommunity cooperation for the sustainable development of Brasov County and its local communities. Strategic planning, project development and implementation on sustainable development topics, including the One-Stop Energy Efficiency Desk for Brașov County. The Desk provides information and technical advice services for	Fostering sustainable development at county level and mainstreaming the topics of energy efficiency and renewable energy promoted through the One-Stop Energy Efficiency Desk for Brașov County.	High; potential partner

STAKEHOLDER	SYSTEM (e.g., infrastructure, capacities, processes, alliances, funds etc.)	NETWORK (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
			citizens, energy communities and potential beneficiaries of energy efficiency investments.		
RATBV S.A.	Infrastructure	Public service provider	Providing efficient, low-emission, and high-quality public transportation services that meet the needs of all citizens.	Improving the fleet and public transport services and expanding the green public transportation network.	High; potential partner
Pro-nZEB Cluster	Alliances	Private sector, RDI	Fostering collaboration, knowledge sharing, and collective action towards climate neutrality goals. Advocacy for supportive policies, support for sustainable practices, and assistance in implementing sustainability measures effectively.	Amplifying efforts towards achieving environmental goals, fostering economic growth, and enhancing the resilience of local businesses to climate change impacts.	Medium-low; advocacy, access to knowledge and potential partners
EIT Manufacturing Hub Romania	Alliances, funding	Private sector, RDI	Facilitating access to knowledge, funding and potential partners and building innovative communities dedicated to driving sustainable practices in manufacturing.	Accelerate the implementation of the Climate Neutrality Action Plan, by empowering stakeholders to adopt environmentally friendly technologies and policies.	Medium-low; access to knowledge, funding and potential partners
EIT Food Hub Romania	Alliances, funding	Private sector, RDI	Facilitating access to knowledge, funding and potential partners and building innovative communities dedicated to driving sustainable practices in agrifood.	Accelerate the implementation of the Climate Neutrality Action Plan, by empowering stakeholders to adopt environmentally friendly technologies and policies.	Medium-low; access to knowledge, funding and potential partners

STAKEHOLDER	SYSTEM (e.g., infrastructure, capacities, processes, alliances, funds etc.)	NETWORK (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
EIT Urban Mobility Hub Romania	Alliances, funding	Private sector, RDI	Facilitating access to knowledge, funding and potential partners and building innovative communities dedicated to driving sustainable practices in urban mobility.	Accelerate the implementation of the Climate Neutrality Action Plan, by empowering stakeholders to adopt environmentally friendly technologies and policies.	Medium-low; access to knowledge, funding and potential partners
WWF Romania	Capacities, alliances	Civil society, NGOs	Advancing sustainable practices and addressing environmental and social issues and climate neutrality.	Advancing eco-friendly initiatives, programs, and projects, aligning with climate neutrality principles and minimising carbon footprints.	Moderate; potential partners and community multipliers
Compania Apa Braşov S.A.	Infrastructure	Public service provider	Providing efficient, low-emission, and high-quality public services that meet the needs of all citizens.	Improving the efficiency and quality of public services; modern and efficient utilities infrastructure.	High; potential partner
ENGIE Romania	Infrastructure	Public service provider	Providing efficient, low-emission, and high-quality public services that meet the needs of all citizens.	Improving the efficiency and quality of public services; modern and efficient utilities infrastructure.	High; potential partner
Electrica Furnizare S.A.	Infrastructure	Public service provider	Providing efficient, low-emission, and high-quality public services that meet the needs of all citizens.	Improving the efficiency and quality of public services; modern and efficient utilities infrastructure.	High; potential partner

STAKEHOLDER	**SYSTEM** (e.g., infrastructure, capacities, processes, alliances, funds etc.)	**NETWORK** (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
RELEVANT STAKEHOLDERS THAT ARE NOT (YET) SIGNATORIES OF THE CLIMATE NEUTRALITY ACTION PLAN					
Citizens	Processes, alliances, capacities	Civil society	Participating in local initiatives for the transition to climate neutrality to improve their day-to-day life.	Increasing well-being, resilience to climate change, and fulfilment through active involvement.	**High; central to user-centric policies and projects/ initiatives; co-creators**
Public service providers (others than above)	Infrastructure	Public service provider	Providing efficient, low-emission, and high-quality public services	Improving/ modernisation of public infrastructure and services	High; potential partners
Private companies	Funds, alliances	Private sector	Funding climate neutrality projects and backing public and community initiatives focused on achieving the same goal.	Strengthening climate resilience and enhancing brand identity through increased awareness and participation in combating climate change.	Moderate-low; potential funders/ partners
Business and RDI structures/ associations	Funds, alliances, capacities	Private sector, RDI	Fostering collaboration, knowledge sharing, and collective action towards climate neutrality goals. Advocacy for supportive policies, support for sustainable practices, and assistance in implementing sustainability measures effectively.	Amplifying efforts towards achieving environmental goals, fostering economic growth, and enhancing the resilience of local businesses to climate change impacts.	Medium-low; advocacy, access to knowledge and potential partners
Commercial banks	Funds	Banking	Providing funding for public investments targeting climate neutrality beyond local budget allocations, and supporting private projects aimed at reducing local greenhouse gas emissions.	Aligning with European principles and goals for climate neutrality and developing a portfolio of eco-friendly banking services/ products.	Moderate-low; financing

STAKEHOLDER	SYSTEM (e.g., infrastructure, capacities, processes, alliances, funds etc.)	NETWORK (e.g., public administration, private sector, RDI, civil society, NGOs, banking institutions, RDAs etc.)	INFLUENCE	INTEREST	ENGAGEMENT (level and type of engagement)
Environmental protection, energy efficiency, climate neutrality, sustainable development and sustainable tourism NGOs	Capacities, alliances	Civil society, NGOs	Advancing sustainable practices and addressing environmental and social issues and climate neutrality within their respective industries.	Advancing eco-friendly initiatives, programs, and projects, aligning with climate neutrality principles and minimising carbon footprints.	Moderate; potential partners and community multipliers
Brasov County School Inspectorate and individual schools	Capacities, alliances	Public sector	Promoting school involvement in local climate neutrality efforts and encouraging participation in related projects.	Improving teaching and learning quality and promoting sustainable practices to students and parents for a more responsible society/ community	High; potential partners and community multipliers
Ministries (Investments and European Projects; Development, Public Works and Administration; Transport; Energy; Environment; etc.)	Funds, capacities	Public administration	Setting the policy agenda and allocating funding for climate neutrality projects based on ministry sectors, endorsing local administration's efforts to make Brașov a carbon-neutral city, and promoting its model.	Promoting and bolstering Romania's efforts to attain climate neutrality goals.	Moderate; policy, regulation and funding
Brasov-Ghimbav International Airport	Infrastructure	Public administration	Improving operational efficiency, implementing carbon offset initiatives, and promoting education and awareness to reduce the climate footprint.	Developing initiatives to mitigate the climate impact and securing necessary funding for them.	Moderate-high; potential partner

Shortly describe the participatory model for achieving climate neutrality, highlighting the collaboration with the local community (citizens), local stakeholders (e.g., private companies, NGOs, research organisations) and external partners (e.g., other public administrations, regional development agencies, national ministries, other organisations).

- ➔ **Relevant aspects may include the local context, the prior experience in community and stakeholder collaboration (e.g., jointly developed and implemented projects, strategic partnerships) and the engagement with various external partners.**
- ➔ **Present the participatory measures used in developing this Action Plan (if applicable) and the participatory method (approaches, processes, mechanisms, instruments, structures, capacity building) to be employed in order to ensure both the implementation and monitoring of the current Climate Neutrality Action Plan.**
- ➔ **Make sure to also describe the actions pertaining to Organisational and Governance Innovation, as well as the actions related to Social and Other Innovation fields.**
- ➔ **Do not forget to make reference to upholding the principles of climate justice, particularly for the marginalised communities.**

Brașov Municipality uses a **comprehensive participatory model to achieve climate neutrality, characterised by extensive collaboration with its local community, stakeholders and external partners**. This model capitalises on the city's local context and past experiences in community and stakeholder engagement, ensuring an inclusive approach.

The participatory process for the local planning documents is regulated by law, giving the public and interested parties opportunities to inform themselves and express their views. **Nevertheless, the Municipality organises public debates on multiple environmental topics, extending these processes beyond the planning and strategic documents, to cover various local initiatives** (e.g., programmes, projects, regulations). This approach ensures the continuous adaptation and enhancement of the local initiatives, through the local ecosystem's feedback, as the City Hall aspires to uphold a dynamic, responsive, and inclusive governance through these measures. **Furthermore, the Municipality strategically intervenes in specific areas through collaborative initiatives. Some of the most relevant examples are outlined below.**

AIR POLLUTION:

- As air pollution poses a significant challenge in Brașov, the City Hall is actively collaborating with the local community to address it, striving to keep the residents not only informed but also engaged.
- The Environmental Protection Agency Brașov regularly posts air quality bulletins on the City Hall website, highlighting the excesses of PM10, PM2.5 and NO2. Moreover, real-time data from the city's five official stations and additional sensors purchased by the Municipality are displayed on public screens throughout the city, and are also available online. The citizen reports of odour pollution are promptly addressed using a mobile monitoring laboratory, which has led to dedicated local policy

changes and interventions. Additionally, the Municipality engages in collaborative efforts with the Ministry of the Environment, the Environmental Protection Agency and the local waste operators, in order to mitigate negative impacts of the air pollution upon the citizens' quality of life.

- In April 2023, a public consultation session allowed citizens to review a study that informs the new Integrated Air Quality Plan (IPAQ). Moreover, the 2023 Participatory Budget Session included sections dedicated to environmental themes such as Green City and Mobile City, allowing the citizens to propose and vote on projects. This process has led to the implementation of numerous community-led initiatives, encouraging a strong sense of civic engagement.

NOISE POLUTION:

- The input and feedback gathered from them, as well as from various external experts, were incorporated into the revised version of the document, which outlines measures to mitigate noise pollution.
- In addition, NGO projects contributing to noise reduction are funded by the Municipality through its annual non-reimbursable funding calls for environmental initiatives.

BIODIVERSITY PROTECTION:

- The Municipality collaborates with the local research institutions, especially with the Transilvania University, the Braşov Experimental Forestry Station and the Meadows Research and Development Institute. These collaborations have led to significant achievements, such as the development of a synthetic guideline for monitoring mammal species that aligns with the Habitats Directive. Specific conservation projects, such as the ones dedicated to the local habitats' restoration and species' protection, have also been successfully implemented.
- Similarly, the Municipality and its partners promote and encourage the implementation of educational campaigns (e.g., workshops, seminars, field trips) in local educational institutions, with the aim to enhance the biodiversity awareness among students, teachers, and parents and to emphasise the critical role of biodiversity conservation in maintaining the well-being of the natural environment within their community.

CIRCULAR ECONOMY:

- The Municipality has implemented collaborative approaches to minimise waste, such as partnering with WWF Romania (World Wide Fund for Nature Romania).

SUSTAINABLE URBAN MOBILITY:

- The development process of the updated version of the Sustainable Urban Mobility Plan (SUMP) represented one of City Hall's most participatory initiatives. It involved a genuine co-design exercise, aimed at formulating a new local sustainable mobility vision , conducted in close collaboration not only with the local citizens, but also with numerous external experts from various relevant fields.

Moreover, Brașov's climate initiatives are supported by multiple **strategic partnerships**, pursued at various levels:

- **EUROPEAN LEVEL:** Since 2001, Brașov collaborates with the Energy Cities network, partnering with Embassies like Finland, France, UK and also being engaged in multiple EU networks (such as those supported by the Interreg and the Driving Urban Transitions programmes). Moreover, Brașov has been represented by ABMEE in multiple climate mitigation projects, many of them being funded under Horizon 2020 (e.g., TOwards Multi-stakehOldeRs transition ROadmaps With citizens at centre (TOMORROW), progRESsHEAT, V-aIR, and HUB-IN). Through the Metropolitan Agency for Sustainable Development, Brașov is the only Romanian partner in the Urban Agenda Partnership on Food, and is a member of the Milan Urban Food Policy Pact. Moreover, Brasov hosts the EIT national hubs on Manufacturing, Food and Urban Mobility, which position it as an important innovation and sustainability hub.
- **NATIONAL LEVEL:** As part of the Romanian Association of Energy Cities, Brașov works with other Romanian LAUs in various topics related to the energy transition towards climate-neutral communities (e.g., Creating appropriate operational conditions for renewable energy in the Danube Region - NCGCOM, and Energy Managers' Services in Municipalities - MENERGERS: flagship projects). Brașov also cooperates with the Romanian Association of Municipalities and the Ministry of Energy through yearly Energy Efficiency Plans and professional training courses. Moreover, in 2023, during the 3rd edition of the Green Cities Forum, Brașov became a member of the Romanian Alliance of Green Cities. This move aligned the Municipality with nine other Romanian cities (Arad, Bucharest - Districts 2 and 6, Buzău, Câmpulung Muscel, Darabani, Lugoș, Reșița, Timișoara), wherein the Mayors pledged to allocate significant resources towards green projects, to promote a sustainable and climate-friendly development and to enhance the quality of life across Romanian cities. Through this affiliation, Brașov aims to engage with a wide array of urban communities, foster regional and national synergies, and facilitate the exchange of best practices in environmental sustainability and climate mitigation and adaptation with the fellow signatories.
- **REGIONAL LEVEL:** The Municipality maintains a strong partnership with the Central Regional Development Agency, which oversees the Central Regional Programme. Additionally, the City Hall actively engages in county and regional events and initiatives, given that Brașov is the development and sustainability hub for the entire Central Region.
- **METROPOLITAN LEVEL:** The Brașov Metropolitan Area emerged informally, after the formulation of the Sustainable Development Plan for the Municipality of Brașov, in 2005. The Plan prioritised the collaborative efforts with the neighbouring communities, in order to relocate the polluting industrial activities outside of the densely populated areas. Subsequently, the Brașov Metropolitan Agency for Sustainable Development was created. Almost 2 decades later, the organization's members now include 19 members: Brașov Municipality, Brașov County Council and several surrounding municipalities and communes. As such, Brașov Metropolitan Area became a long-term partnership for the sustainable development of both Brașov and its surrounding localities, and will serve as a key partner in guiding the local communities towards climate neutrality, by mirroring Brașov's own model.

- ☐ **LOCAL LEVEL:** The Municipality actively cultivates partnerships with local NGOs, collaborating on various initiatives, including environmental projects funded from the local budget, participatory budgeting sessions, public debates, open consultations for major projects. Moreover, citizens play an active role in the local emissions reduction (mainly through project-specific local action groups) and engage digitally in civic affairs using various tools provided by the Municipality, such as real-time complaint platforms and educational resources on green city solutions.

DEVELOPING THE ACTION PLAN FOR THE TRANSITION TO CLIMATE NEUTRALITY

The development process of the Climate Neutrality Action Plan embraced a participatory approach, encompassing:

1. **Initial drafting process:** This phase involved consulting with the community and local stakeholders, while also ensuring the alignment of the proposed actions with the already-approved municipal strategic documents. The main reference documents were the Integrated Urban Development Strategy (IUDS) for the Brașov metropolitan area 2021-2030 and the Sustainable Urban Mobility Plan (SUMP), which were developed through a participatory approach, by engaging the local stakeholders through public consultation tools:
   - An online opinion survey and thematic consultations engaged the citizens and civil society representatives within the Brașov Metropolitan Area.
   - Hybrid and in-person public consultation meeting covered the participation of the local businesses, institutions, NGOs, and civil society representatives, targeting dialogues about metropolitan challenges, SWOT analysis, and the outline of strategic objectives. The inputs from this meetings were used in updating the strategic documents and generating project ideas.
2. **Citizens' survey**: an online survey was designed to understand the citizens' perception, preparedness and understanding of climate neutrality topics, as well as to collect ideas and proposals. The survey was promoted by the Municipality, the Metropolitan Agency and other interested partners and citizens. As the response rate has shown a limited interest to participate, the survey is still open and the updated results will be included in the final draft of the action plan.
3. Following the stakeholder analysis and the drafting of the Action Plan, a **stakeholder consultation** will be conducted for the completion of the action plan. The stakeholder consultation will be structured on the impact pathways' topics, and will consist of **thematic working groups**, that will feed into the **Local Net Zero Coalition**, ensuring continuity between the planning and implementation phases.
4. **Public consultation:** the final draft of the Action Plan will be published for public consultation and presented publicly, in order to gather feedback and additional input from citizens and stakeholders on the content of the document, leading to the improvement of its quality through their later integration into the final version of the documentation.

IMPLEMENTING THE ACTION PLAN FOR THE TRANSITION TO CLIMATE NEUTRALITY

The implementation of the Action Plan will also embrace a participatory approach, mainly through the Governance Innovation and Social Innovation interventions proposed within the Plan:

- ☐ All the local stakeholders which have been identified in the dedicated section are, in fact, key contributors to Brașov' journey towards climate neutrality. Within the framework of the public consultations and thematic working groups organised as part of the Action Plan development process, and of the participatory actions conducted over the past years, a Local Net Zero Coalition formed of the most active local actors has naturally emerged. This Coalition, which has already demonstrated its cooperation and co-design value through its previous collaborative work (e.g., preparing the application documents for the Green City Capital Awards), will play a significant role during the implementation of the Action Plan. As such, the Municipality aims to increase their involvement by not only by strengthening their dialogue with the public administration, but also by increasing their capacity to monitor, revise, and implicitly improve the Action Plan. Furthermore, the Municipality will collaborate with these stakeholders as partners in various projects and initiatives aimed at achieving climate neutrality locally. Additionally, these organizations will develop their own climate neutrality projects, to further reinforce and accelerate the reduction of CO2 emissions.
- ☐ The Municipality also aims to increase the citizens' involvement in the local sustainability and climate neutrality goals, through a comprehensive approach. The pursued approach will seek to empower the individuals to actively contribute to the community's climate neutrality goals. One key intervention that is currently under analysis is the development of the participatory budgeting sessions (previously organized on an annual basis), which could dedicate more resources towards green projects. The Plan also includes educational activities and sustainability competitions designed to incentivize citizens to adopt eco-friendly behaviours, such as urban gardening and reducing energy consumption. All these Social Innovation interventions aim to cultivate a culture of environmental and climate stewardship through community engagement.
- ☐ The Action Plan also incorporates Governance Innovation interventions, which are aimed at incentivising the citizens to shift towards green energy sources through a comprehensive set of policies, incentives, and regulatory measures. These governance mechanisms were strategically designed to collectively propel the transition towards greener energy alternatives, fostering both environmental sustainability and the reduction of the negative anthropogenic impact on the climate.
- ☐ Regarding the Governance Innovation, the interventions have been designed to incentivize the tertiary and industrial sectors to transition to green energy sources, through a comprehensive set of policies, incentives, and regulatory measures. Furthermore, the Municipality considers providing tax breaks in order to encourage the private sector to reduce its carbon footprint, mainly through deductions or exemptions for investments in renewable energy technologies and energy efficiency measures. Additionally, the proposed grants and subsidies will offer financial support for retrofitting old systems and implementing new green technologies in factories and commercial buildings. All these governance mechanisms aim to drive the adoption of green energy in the tertiary and industrial sectors.

The Municipality will pursue additional initiatives aimed at incentivising the local companies to access non-refundable financing which will be available for projects aimed at reducing carbon emissions. Additionally, efforts will be made to attract private capital for the public climate neutrality projects, as follows:

- ☐ **Facilitating access to funding from the Central Regional Programme.** The Municipality will collaborate with the Central Regional Development Agency to encourage the private companies to tap into the CRP funds, as this programme offers significant opportunities for investments in energy efficiency, green infrastructure, and renewable energy projects, all of which are essential for achieving climate neutrality.
- ☐ **Encouraging climate neutrality CSR initiatives**. The Municipality aims to motivate the local companies to complement the public administration's climate neutrality investments by implementing their own related projects, through corporate social responsibility.
- ☐ **Strengthening the partnerships with commercial banks and leveraging PPPs.** One of the Municipality's objectives on financing is to access additional private financing options for transitioning to carbon neutrality. Furthermore, the Municipality aims to develop PPPs, to address some of its ongoing climate challenges (e.g., renewable energy generation and use for public consumption).

The execution of both the infrastructure investments and the Social Innovation interventions outlined in the Action Plan will strongly adhere to the climate justice principles. As such, the Municipality aims not only to reduce the vulnerability of the local marginalised communities in the face of the climate changes, but also to ensure that the perspectives of the disadvantaged groups are considered in the execution of the proposed actions.

In addition to the interventions and tools mentioned above for implementing the Action Plan within a participatory framework, the Municipality will also:

- ☐ **Continue to develop and implement new urban regulations and local policies for targeted intervention areas.** Through this process, the Municipality aims to establish a supportive framework for engaging citizens and local stakeholders in advancing climate neutrality, but also to address the potential individual behaviours which are detrimental to the climate through appropriate penalties.
- ☐ **Promote volunteering for climate neutrality**. Through this process, the Municipality wants to encourage the citizens to take the lead in advocating for climate neutrality, providing them with opportunities to actively participate in the local transition towards a climate-friendly community and inspiring them to become agents of change.
- ☐ **Take a proactive role within the M100 Hub cohort of cities.** The Municipality aspires to be an active participant, not only benefiting from the technical assistance provided, but also becoming a leader in driving the urban transition towards climate neutrality across Romania.
- ☐ **Promote the scale-up of the Action Plan at both national and international levels while actively participating in the available peer-learning opportunities.** As highlighted across various sections of this document, Brașov is actively engaged in multiple national associations and international networks. Through these affiliations, the Municipality seeks to disseminate the knowledge and best

practices gained from implementing this Action Plan. Concurrently, it aims to leverage the participation in these networks by learning from its peers.

MONITORING AND EVALUATION OF THE ACTION PLAN FOR THE TRANSITION TO CLIMATE NEUTRALITY

Brasov Municipality will be responsible for monitoring and evaluating the interventions, targets, and indicators outlined in the Action Plan, under the coordination of the Energy Management Unit.

However, the public administration is committed to engaging the citizens, local companies, organizations, and institutions in this process, mainly by openly disseminating the monitoring results, requesting community input and integrating it into the monitoring reports, and also addressing the reported issues. Moreover, the Municipality seeks to harness further technical expertise and resources from these stakeholders, particularly from the relevant companies, organizations, and institutions (e.g., access the monitoring solutions they own or develop). As such, the Net Zero Local Coalition will also be involved in the monitoring process, which will follow a participatory and inclusive approach.

Lastly, recognizing that the monitoring work is a challenging aspect, the public administration aims to gather additional knowledge from sources such as the M100 Hub and NetZeroCities.

FRAMEWORK FOR CITIZEN INVOLVEMENT AND LONG-TERM SUPPORT OF CITIZEN-DRIVEN ACTION

In line with the participatory principles guiding Brașov's Climate City Contract, citizen involvement represents a cornerstone of the transition towards climate neutrality. Recognising that climate neutrality can only be achieved with the active participation of the community, the Municipality seeks to transform individual awareness into long-term, collective action. The framework below outlines a simple yet effective approach to ensure citizens are consistently informed, engaged, and empowered to contribute to the city's transition efforts. The proposed approach is structured around three pillars, covering short, medium and long-term strategies: engagement, empowerment, and endurance.

I. ENGAGEMENT: Continuous and Inclusive Participation

Citizen engagement will be systematically embedded across all phases of the Climate City Contract — from planning and implementation to monitoring and evaluation. The goal is to create an open and inclusive participatory environment accessible to all residents.

Key measures include:

- **Digital participation platform**: development of digital participation tools, with the long-term goal of a central thematic online hub (e.g. "Green Brașov Portal") enabling citizens to propose and follow local sustainability projects, access environmental data, and engage in discussions about ongoing initiatives.
- **Participatory budgeting for climate action (currently under review/ analysis):** a dedicated annual share of the municipal participatory budget would be allocated to community-proposed green and resilience projects.

- **Neighbourhood climate forums:** periodic meetings to discuss local environmental priorities, projects' and initiatives' progress, and gather feedback.
- **Open CCC consultations:** annual public sessions reviewing progress on the Climate City Contract and identifying new citizen-driven initiatives, coordinated with the yearly Action Plan monitoring process (see Chapter IV. Outlook and Next Steps).

II. EMPOWERMENT: Enabling Citizen-Led Action

Brașov's long-term success relies on transforming citizen participation into leadership. The Municipality will invest in strengthening community capacity and co-creation mechanisms.

Proposed measures include:

- **Sustainability academies and workshops,** in partnership with/ supporting civil society and industry partners: practical training for households, students, and community leaders on energy efficiency, waste reduction, and sustainable mobility.
- **Citizen labs and hackathons:** supporting co-creation events to encourage local innovation and collective problem-solving.
- **Community micro-grants:** funding small-scale neighbourhood projects supporting climate neutrality.
- **Educational partnerships:** collaboration with Transilvania University and schools to promote environmental education and youth engagement in sustainability projects.

III. ENDURANCE: Sustaining Long-Term Involvement

To ensure long-term continuity, citizen involvement will be embedded in Brașov's institutional and governance frameworks.

Key mechanisms include:

- **Integration in the Local Net Zero Coalition:** representatives of citizens and NGOs will participate as permanent members in monitoring and co-decision processes.
- **Citizen Climate Ambassadors network:** a volunteer programme promoting local action, facilitating two-way communication, and gathering community feedback.
- **Annual Citizen Involvement Report:** documenting public participation, results, and lessons learned, using indicators such as *I15 – number of citizen initiatives for sustainability.*
- **Recognition and incentives:** public awards (e.g., *"Greenest Neighbourhood"* or *"Energy-Smart Building"*) to acknowledge impactful initiatives and encourage continued engagement.

The implementation of this framework is expected to strengthen civic ownership of Brașov's climate neutrality agenda and expand citizen participation in sustainability and environmental governance. By establishing structured feedback channels and collaborative monitoring, it will enhance transparency and trust between the Municipality and the community. Over time, these efforts will embed climate-neutral principles into Brașov's urban culture and everyday community life, ensuring lasting engagement and

shared responsibility for the city's transition. The Municipality of Braşov will lead the process in partnership with the Local Net Zero Coalition, civil society, industry and RDI partners. Implementation will be continuous, with full digital integration and operationalisation of participatory tools expected by 2027.

BARRIERS

Provide a summary of the main local barriers impeding the city's transition towards climate neutrality.

- ➔ **For each barrier, briefly outline its impact on hindering the climate neutrality achievement and describe the approach / intervention / solution for overcoming it through the implementation of the current Climate Neutrality Action Plan.**
- ➔ **Make sure to also incorporate barriers related to climate investment: structural, policy, economic and financial obstacles which could hinder the deployment of capital to support climate action.**

Like many other Romanian cities, Brașov faces various barriers in its journey towards achieving climate neutrality, with challenges present in each emission domain. Additionally, the Municipality encounters plenty of transversal obstacles, as many of the identified barriers extend across multiple dimensions. Compounding these challenges are the funding barriers, which currently put the highest pressure not only on the public administration, but also on the local companies, organizations, and citizens, as all the local actors strive to individually adopt climate neutrality solutions. However, Brașov City Hall is committed to addressing these barriers comprehensively, by leveraging not only its past efforts but also the interventions outlined in this Action Plan. Furthermore, the Municipality will actively seek external support regionally, nationally, and internationally, by collaborating with different catalysts, in order to mitigate these barriers' negative impact on its capacity to reach the climate neutrality targets, swiftly and effectively.

In the process of mapping thebarriers below, all the relevant local strategic documents, which provide thorough insights and solutions to address them have been analysed.

KEY BARRIERS

Emission Domain	Barrier	Description	Proposed Solution
ENERGY SYSTEMS	**Dependence on fossil fuels**	The local energy mix remains dominated by natural gas and other fossil fuels, slowing the shift toward clean energy.	Expand renewable capacity through the photovoltaic park, solar installations on public buildings and EV stations, and cooperative energy schemes. Introduce incentives to support households and businesses investing in RES.
ENERGY SYSTEMS	**Limited citizen engagement in energy transition**	Many residents lack awareness, motivation, or resources to improve energy efficiency or adopt renewable energy solutions.	Use demonstrative municipal projects and Action A14 initiatives—awareness campaigns, educational programmes, and participatory budgeting—to mobilize households and communities toward energy savings and RES adoption. Support energy communities.
ENERGY SYSTEMS / ECONOMY	**Low involvement of local companies and**	Businesses face knowledge gaps, limited	Strengthen collaboration with the private sector through the Local Net Zero

Emission Domain	Barrier	Description	Proposed Solution
	organizations in the green transition	financing, and uncertainty about the benefits of low-carbon investments.	Coalition. Promote CSR-based initiatives, green financing opportunities, and technical support for energy efficiency and renewable adoption.
BUILT ENVIRONMENT	**Low energy efficiency in the building stock**	A large share of buildings predates efficiency standards, with low renovation uptake due to costs and limited awareness.	Implement large-scale renovation and nZEB programmes, offer co-financing and technical guidance, and use municipal retrofits as pilot projects to demonstrate results.
BUILT ENVIRONMENT	**Underused industrial areas**	Several industrial zones are underutilized and deteriorated.	Support urban regeneration and redevelopment and attract sustainable investors.
MOBILITY & TRANSPORT	**High car dependency and slow adoption of green mobility**	Cultural habits, limited infrastructure, and EV affordability slow the uptake of sustainable transport options.	Implement SUMP and Velo Masterplan measures: expand green transport and cycling infrastructure, deploy Low Emission Zones, and promote public transport and EVs through incentives and awareness campaigns.
WASTE & CIRCULAR ECONOMY	**Incomplete selective collection and limited circular practices**	Waste management and recycling are constrained by infrastructure gaps and low public awareness.	Expand smart waste infrastructure, voluntary collection centres, and educational programmes promoting circular economy practices.
GREEN INFRASTRUCTURE & NBS	**Fragmented and underused green-blue infrastructure**	Uneven quality, limited maintenance, and low integration of NBS reduce urban resilience.	Implement the Green Infrastructure Strategy to restore green-blue corridors, increase native vegetation, and integrate NBS for cooling and flood mitigation.
TRANSVERSAL	**Urban sprawl and inefficient land use**	Suburban expansion increases emissions and infrastructure costs.	Apply GUP and IUDS principles promoting compact, mixed-use growth and protection of green and agricultural land.
TRANSVERSAL	**Limited administrative and technical capacity**	Staff and institutional resources remain insufficient for CCC implementation and monitoring.	Strengthen the Energy Management Unit, enhance interdepartmental coordination, and use M100, NetZeroCities, and EU capacity-building programmes.
FUNDING & INVESTMENT	**High reliance on public funding and low private investment**	The Investment Plan depends mainly on public sources, creating fiscal risk and limiting scalability.	Adopt blended-finance mechanisms (green bonds, guarantees, PPPs) to attract private capital, de-risk investments, and align with EU and national programmes.

Emission Domain	Barrier	Description	Proposed Solution
FUNDING & INNOVATION	**Low innovation and entrepreneurship in green sectors**	Limited RDI capacity constrains the development of climate-neutral technologies and business models.	Support innovation through hackathons, start-up programmes, and partnerships with Transilvania University and innovation hubs and programmes (e.g. capitalise on EIT national hubs being located in Brașov).

RISKS

Provide a short summary of the main risks which may affect the achievement of the city's climate-neutrality goals by 2035.

- ➔ **For each risk, briefly outline its impact on hindering the climate neutrality achievement and describe the approach / intervention / solution for overcoming it through the implementation of the current Climate Neutrality Action Plan.**
- ➔ **Make sure to also incorporate the risks related to the financing of the climate investments.**

In the context of transitioning to climate neutrality, Brașov Municipality encounters multiple risks that extend across all the fields of actions, including both sector-specific and transversal risks, as well as those related to the financial dimension of implementing the Climate Neutrality Action Plan. These risks, along with their mitigation measures, are detailed below.

Annually, the monitoring of these risks (coupled with the evaluation of the MEL indicators specified in this Action Plan) **will be conducted by the technical experts from Brașov City Hall, closely coordinated by the Energy Management Unit**, in order to ensure a proactive approach to risk management. Moreover, in line with the EU Mission for Climate-Neutral and Smart Cities, the monitoring process will also incorporate an uncertainty framework, for tracking both the predetermined indicators and any potential uncertainties. Drawing from the model proposed by M. Bodde, K. Van der Wel, P. Driessen, and A. Wardekker, the Municipality will address the four types of uncertainties relevant for strategic environmental assessments: inherent uncertainties (arising from the complexity of systems), scientific uncertainties (due to data challenges), social uncertainties (which are caused by the diverse stakeholder values and shaped by the political climate), and legal uncertainties stemming from variability in the legal framework.

MAIN RISKS

Field of Action	Risk	Description	Mitigation Solution
ENERGY SYSTEMS	**Rising investment costs**	Inflation and supply chain fluctuations may increase the cost of renewable and heating system projects.	Prioritize cost-efficient and scalable investments based on feasibility studies and market analysis. Use EU and national funding to cover inflation gaps and apply flexible procurement procedures.

Field of Action	Risk	Description	Mitigation Solution
ENERGY SYSTEMS	**Complexity of district heating rehabilitation**	Large-scale technical works may face execution delays, resident disruption, and limited supplier capacity.	Implement phased investments under the 2023 Local Heating Strategy, engage qualified contractors, and use external technical expertise when needed.
BUILT ENVIRONMENT	**Cost escalation in construction**	Inflation and demand in the construction sector may increase renovation and nZEB project costs.	Optimize design for cost efficiency, conduct early market research, and plan contingencies within EU-funded and local budgets.
BUILT ENVIRONMENT	**Administrative overload in project management**	Managing multiple large-scale renovation projects may exceed staff capacity.	Strengthen the Energy Management Unit, hire external specialists as needed, and build staff capacity through M100 and NetZeroCities initiatives.
MOBILITY & TRANSPORT	**Funding and delivery risks for mobility projects**	Large investment needs and limited national co-financing may delay implementation.	Follow SUMP priorities, diversify funding through EU, EIB, and PPP mechanisms, and improve local revenue via parking and carbon-pricing reforms.
MOBILITY & TRANSPORT	**Low adoption of sustainable mobility**	Car dependency and suburban commuting patterns hinder modal shift to public and active transport.	Combine infrastructure upgrades with incentives, awareness campaigns, and inter-municipal coordination for integrated mobility systems.
WASTE & CIRCULAR ECONOMY	**Low participation in waste separation**	Behavioural and cultural barriers may slow progress on recycling and circular economy targets.	Expand initiatives like PETrica, strengthen education and participatory tools, and deploy digital monitoring systems for waste management.
WASTE & CIRCULAR ECONOMY	**Legacy landfill liabilities**	Historic landfills under EU infringement pose environmental and legal risks.	Complete closure and rehabilitation works, continue legal action against responsible operators, and recover costs post-trial.
GREEN INFRASTRUCTURE & NBS	**Environmental risks and urban expansion pressures**	Urban growth and poorly managed works may degrade biodiversity and green spaces.	Apply the Green Infrastructure Strategy, conduct environmental impact assessments, and use native species and NBS for ecosystem restoration.
GOVERNANCE & CAPACITY	**Limited institutional capacity**	Insufficient staff and technical expertise may slow Action Plan implementation.	Enhance coordination, expand staff training, and use external partnerships and technical assistance from EU and international networks.
FUNDING & INVESTMENT	**Overreliance on public funding**	Heavy dependence on public budgets may constrain investment sustainability.	Develop blended-finance tools, promote PPPs, and attract private capital through Invest in Brașov and de-risking mechanisms.

Field of Action	Risk	Description	Mitigation Solution
GOVERNANCE & SOCIAL	**Low public engagement and resistance to change**	Limited understanding of climate benefits may generate opposition or apathy.	Strengthen communication and stakeholder engagement, highlight economic and social co-benefits, and maintain transparency through participatory platforms.

OPPORTUNITIES

Outline the main opportunities you aim to leverage in order to accelerate the local transition towards climate neutrality.

Drawing upon the proactive nature which characterizes the local public administration and also upon the ambitious objectives embraced by Brașov regarding its journey towards climate neutrality, the local aspiration extends beyond merely achieving climate neutrality. The target is to position Brașov as a pioneer in Romania and Europe, striving not only to become carbon neutral, but also to be an inspirational model for other cities in the work they will pursue in order to reduce carbon emissions.

As such, the focus during the implementation of this Action Plan will be to seize every available opportunity to its fullest extent. However, as the Municipality pursues these opportunities, it will allocate resources efficiently, in order to maximize the impact within the shortest feasible timeframe. We outline below the key opportunities that the public administration intends to access in the upcoming period:

- ☐ **FUNDS:** The main efforts will be used for accessing the non-reimbursable funds designated for climate neutrality and sustainability projects through the NRRP (until 2026) and other national programmes (until 2027). Moreover, in order to complement the available national public funding, the Municipality aims to also tap into European funding programmes (e.g., LIFE, Horizon Europe, Citizens, Equality, Rights and Values, Driving Urban Transitions). The City Hall also wants to explore innovative financing instruments and models more thoroughly, in order to better understand how it can use them to finance the climate neutrality projects which currently require additional funds. Furthermore, as mentioned previously, in the coming years, the Municipality will also explore avenues for attracting more private capital for the local climate neutrality projects, in order to bridge the existing deficits and also to encourage the integration of climate-neutral components and principles into private projects.
- ☐ **INFRASTRUCTURE:** As detailed in above sections, both Brașov and the other localities within the Brașov Metropolitan Area have already implemented multiple investment projects in the recent years, which have significantly contributed to the reduction of carbon emissions at the metropolitan level. The Municipality aims to build upon these projects as the foundation for the future actions towards achieving climate neutrality. Additionally, there are plenty of other opportunities that have not yet been fully or properly used. For instance, some of the industrial parks within the

Metropolitan Area (e.g., those located on the Roman and Tohan platforms) remain underused, while some of the former communist factories are wholly or partially abandoned, but all these brownfield sites have a significant potential for environmentally friendly reuse and sustainable integration into the economic circuit.

- ☐ **PROCESSES:** Despite not being a part of the EU Mission for Climate-Neutral and Smart Cities cohort of 112 cities, Braşov aims to adopt the methodologies and approaches developed within the Mission, as the Municipality wants to embrace the European model in tackling the local climate-related challenges. Additionally, the public administration will access any opportunity that facilitates process innovation, whether it involves the internal processes within City Hall, the public services, the citizen engagement work, or the dialogues with the private sector. Furthermore, the public administration will actively promote the importance of RDI processes in achieving the local transition to climate neutrality, particularly among the local academic institutions, research organizations and young entrepreneurs (as they have a high potential for generating innovative business ideas).
- ☐ **RESOURCE FLOWS:** Located in the heart of Romania, Braşov is a central hub for the transit and convergence of the national resources. The Municipality's goal is to capitalize on its strategic location, aiming to become a national center and catalyst for the transition to climate neutrality. Furthermore, being the development hub of its metropolitan area, Braşov Municipality seeks to harness the existing functional relations in order to generate social, economic, and environmental changes at the metropolitan level and to implicitly catalyse the achievement of climate neutrality across all its neighbouring localities, through a positive spillover effect. The public administration aims to foster a dynamic, sustainable, and mutually-beneficial model for resource management within the Braşov Metropolitan Area, by consolidating its collaboration with the other localities (mainly through the IDAs of which we are members) and other metropolitan stakeholders (e.g., companies, organizations, institutions). The focus in the coming years will be on capitalizing on three key resources: human, financial, and informational. Regarding the human resources, the recent influx of people (particularly from Bucharest), offers the opportunity to increase the local capacity for accelerating climate neutrality, both in terms of technical expertise and climate-friendly behaviours. Regarding the financial resources, the plan includes tapping into funding sources outside of the local budget and the national and European grants. As such, the public administration aims to engage the private sector, in order to compensate the existing financial deficits and also to obtain additional capital for CO2 reduction projects, both by attracting new investors and also by mobilising the local entrepreneurs. Lastly, as the Municipality acknowledges the importance of understanding and using the available informational resources (e.g., data, best practices), it plans on leveraging the digital technologies in order to harness the information as a driver for climate neutrality.
- ☐ **CAPACITIES:** The public administration will be accessing the educational opportunities which are available at both national (e.g., M100 Hub) and international levels (e.g., EU Mission for Climate-Neutral and Smart Cities, CapaCities, Energy Cities), with the aim to improve the know-how of both the City Hall's staff and the local stakeholders. Internally, the objective is to improve the expertise

of the technical departments (e.g., territorial development, environmental protection, transportation, sanitation, cadastre, ITC) along with the Directorate of Projects and Strategies and the Investment Service, in order to enable them to efficiently manage all the local climate-friendly development projects. Another priority refers to strengthening the Energy Management Unit, as this unit plays a key role in coordinating, assessing, and monitoring the climate neutrality interventions, particularly in terms of energy consumption reduction, adoption of green energy, and CO2 abatement. Externally, the Municipality aims to enhance the capacity of its local stakeholders, namely the the private sector (particularly companies), civil society (such as the local NGOs focused on environmental, educational, community development, and social support initiatives), and, of course, the citizens. Through this empowerment (facilitated through the Social and Governance Innovation Innovation interventions outlined in our Action Plan), the public administration aims to encourage their proactive contributions to the local climate neutrality efforts. Brașov also remains open to capitalizing on any additional capacity-building opportunities that may arise (e.g., events, training programs, twinning initiatives, exchange programs, study visits, international collaboration projects, support from European institutions).

- ☐ **ALLIANCES:** In terms of alliances, the public administration is exploring several opportunities across different levels.
  - ☐ Locally, the Municipality will continue the efforts initiated by the Service which manages the relations with the Homeowners' Associations and also the ones pursued through the Citizens Information Center, along with other ongoing actions (e.g., the monthly meetings held by the Mayor with Homeowners' Associations). The Net Zero Local Coalition will also play a pivotal role at the local level, under the coordination of the Energy Management Unit. The public administration aims to further develop this Coalition, by formalizing its role and operationalizing its tasks, in order to bridge the gaps that Brașov currently faces between the public administration and the local stakeholders.
  - ☐ Nationally, the Municipality wants to increase its involvement in associations such as the Romanian Association of Energy Cities (where Brașov currently holds the presidency) and the Association of Romanian Municipalities. Through these platforms, the public administration aims to advocate for climate neutrality actions among more Romanian cities and metropolitan areas. Additionally, Brașov aims to collaborate with the 3 Romanian cities which are already part of the EU Mission for Climate Neutral and Smart Cities, in order to leverage their expertise. Moreover, within the M100 Hub, the public administration plans to engage with the cities selected to join this national hub, in order to organize exchanges of knowledge, experiences, and ideas.
  - ☐ Internationally, the City Hall is in the process of establishing a collaborative partnership with the World Bank, with a focus on technical assistance for climate neutrality. Brașov also aims to strengthen its existing relationships with various international partners and to further direct these partnerships towards future climate neutrality projects. Furthermore, the Municipality intends to scale-up its international engagement, by participating in more projects of this nature.

Moreover, Brașov will dedicate efforts to developing strategic partnerships for climate neutrality with relevant stakeholders, particularly from the private and NGO sectors. The public administration also aims to explore the learning, visibility, and networking opportunities provided by various European programmes (e.g., European Urban Initiative, URBACT, Interreg, New European Bauhaus).

The strategy for seizing the above opportunities involves integrating them with the local goals of sustainable and integrated urban development, rather than focusing solely on climate neutrality. Additionally, the public administration will complement the outlined opportunities with others, especially those related to green and digital transformation, as well as climate adaptation and justice.

ASSISTANCE NEEDS

Provide a brief overview of the key areas or aspects where external support would be required, in order to overcome the local barriers, mitigate the external risks and capitalise on the available opportunities, such as to achieve climate neutrality.

- ➔ **Take into account the gaps that need to be fulfilled (eg., financing, data collection, monitoring and assessment, knowledge deficiencies, governance, citizen engagement, stakeholder collaboration, innovative approaches etc.).**

Achieving Brașov's climate neutrality ambition requires not only political commitment and well-designed actions, but also sustained institutional, technical, and financial support. The Municipality has made substantial progress in establishing the foundations of climate governance through the Integrated Urban Development Strategy (IUDS), the Sustainable Energy and Climate Action Plan (SECAP), the Green Infrastructure Strategy, and the Sustainable Urban Mobility Plan (SUMP). However, the transition to a fully climate-neutral city introduces new demands that exceed existing administrative and technical capacities.
The complexity of the Climate City Contract (CCC) lies in its multi-sectoral scope, cross-institutional coordination, and the need to mobilize substantial investments from both public and private sources. While the Municipality of Brașov has already developed strong governance frameworks and demonstrated project management experience, the **scale, innovation level, and financial structure of the planned interventions** call for external expertise and capacity reinforcement.

Hence, an integrated Strategy for Bridging Capacity Gaps is necessary, aiming to:

- Strengthen the Municipality's institutional, technical, and financial capacity to implement and monitor the Climate City Contract effectively;
- Reduce dependency on public funding by developing a mature ecosystem for private-sector engagement and investment mobilisation;
- Enhance governance transparency and public accountability through digital and participatory tools;
- Establish a replicable model of climate-neutral governance that can serve as a benchmark for other Romanian and European cities.

Ultimately, by systematically addressing its capacity gaps and leveraging strategic partnerships, Brașov will consolidate its position as a national leader in the transition to climate neutrality, capable of delivering measurable, inclusive, and enduring results.

Assistance Needs and Gaps

A comprehensive assessment carried out during the CCC development process identified several interlinked assistance needs and capacity gaps that must be addressed to ensure effective implementation:

- **Institutional and governance capacity:** Although the Energy Management Unit has been designated as the core implementation and monitoring body, its current staffing and operational resources are insufficient to coordinate the full CCC portfolio. Cross-departmental coordination, data integration, and project evaluation capacities need strengthening.
- **Technical expertise:** The Municipality requires specialized support in areas such as renewable energy planning, energy efficiency auditing, mobility modelling, circular economy, nature-based solutions, and environmental impact assessment. The lack of standardized tools and data management systems limits the Municipality's ability to design, monitor, and scale interventions.
- **Financial capacity and investment readiness:** The Action Plan's implementation relies heavily on EU and national public funding, with limited mechanisms in place to attract private investment or structure public–private partnerships (PPPs). There is a clear need for enhanced financial engineering skills, including blended finance, risk mitigation instruments, and project pipeline development.
- **Stakeholder and citizen engagement capacity:** While Braşov has established an open participatory framework, the practical capacity to manage systematic engagement—through consultations, participatory budgeting, and collaborative monitoring—is still evolving. Strengthening communication, digital tools, and facilitation skills is essential to sustain long-term civic involvement.
- **Monitoring and data management:** The current Monitoring, Evaluation, and Learning (MEL) system provides a solid foundation but requires further integration of digital platforms, open data dashboards, and participatory feedback mechanisms. This will improve transparency, accountability, and adaptive management.

Strategy for Bridging Capacity Gaps

To effectively address these gaps, the Municipality will pursue a **Capacity Bridging Strategy** structured around three complementary pillars: *Build – Partner – Institutionalize*.

1. Build – strengthening internal capacity. The Municipality will launch a continuous training and professional development programme for municipal staff, focusing on climate governance, green finance, data-driven monitoring, and stakeholder engagement. The Energy Management Unit will evolve into a cross-sector coordination hub, equipped with digital monitoring and project-tracking tools. Knowledge-sharing mechanisms will be introduced to enhance collaboration among departments and to ensure consistent implementation standards across all CCC domains.

2. Partner – leveraging external expertise and collaboration. Braşov will deepen its partnerships with Transilvania University, the Braşov Metropolitan Agency for Sustainable Development (AMB), Braşov Transport Association, and other local research and innovation actors to support technical studies, modelling, and scenario analysis. Cooperation with private-sector partners will be expanded to promote co-development of projects, knowledge transfer, and de-risked investment opportunities. At the same time, the

Municipality will actively engage in European and international networks such as the *M100 Hub*, *NetZeroCities*, *URBACT*, and *Horizon Europe* projects to access peer learning, mentorship, and technical assistance.

3. Institutionalize – embedding governance and learning mechanisms. The Municipality will consolidate the climate governance framework by clearly defining responsibilities between City Hall, AMB, and metropolitan partners. The Energy Management Unit will coordinate a unified monitoring and reporting system aligned with EU Mission indicators, ensuring continuity beyond individual projects. MEL functions will be institutionalized within the EMU, supported by digital tools for transparent reporting and citizen feedback. Climate neutrality objectives and performance indicators will also be mainstreamed into municipal budgeting and decision-making processes.

Assistance Instruments to be mobilized

To operationalize this capacity-building strategy, Braşov will seek targeted technical and financial assistance from multiple sources:

- **European Union instruments** such as Horizon Europe, LIFE, ELENA, Interreg, and European Urban Initiative (EUI) for technical assistance, demonstration projects, and knowledge exchange;
- **National and regional programmes** - e.g. supported by the Regional Development Agency (ADR Centru) for project preparation and co-financing, M100 for technical assistance etc.;
- **International financial institutions** including the European Investment Bank (EIB), World Bank, and EBRD, to access advisory services and blended-finance instruments supporting large-scale investments and PPPs.

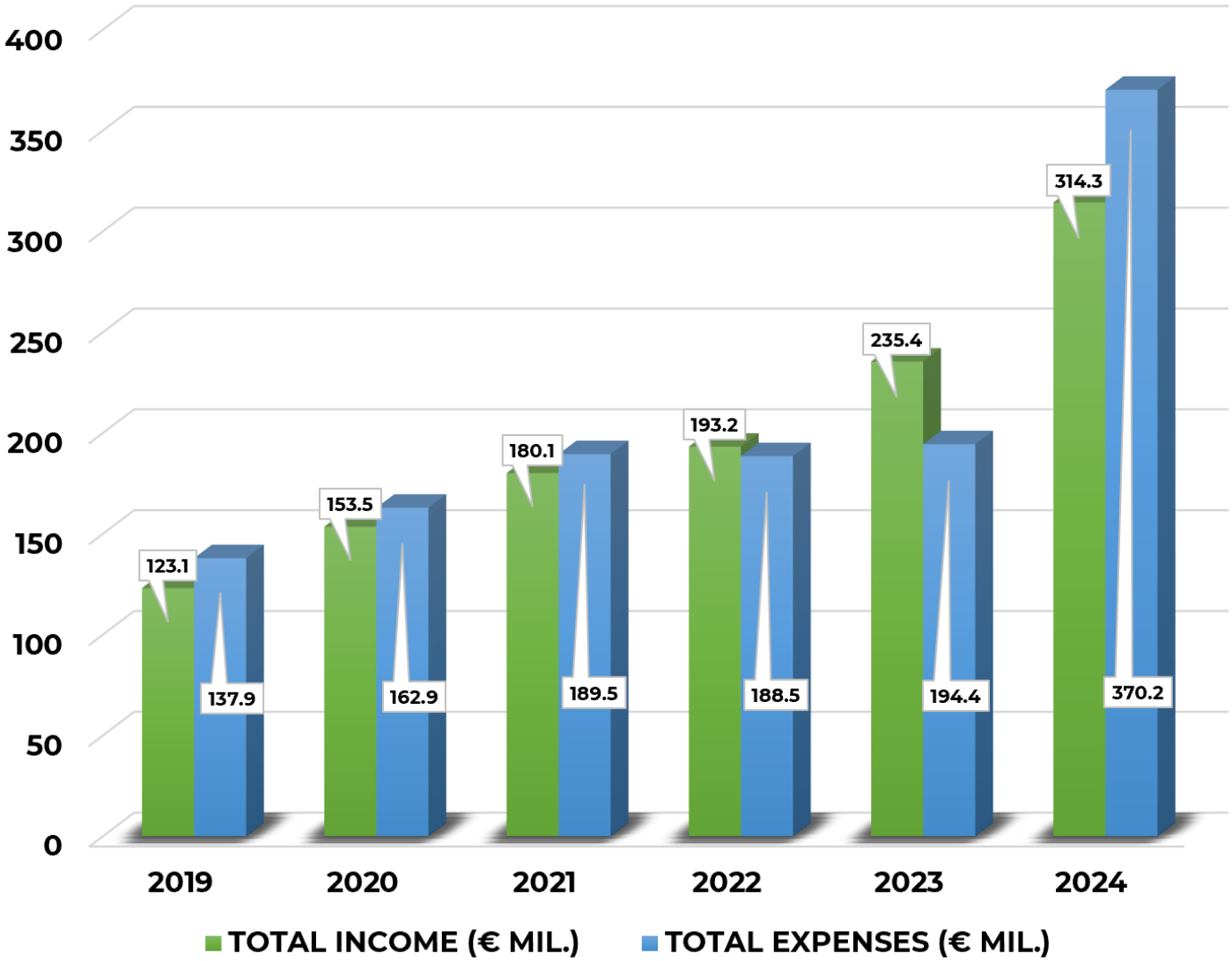
III. INVESTMENT PLAN

EXISTING FUNDING AND FINANCING

Outline, analyse and evaluate the past and current funding and financing allocated to climate-related initiatives across each field of action.

The total budget managed by the Municipality of Brașov has almost doubled in the last 5 years. The values projected for 2024 indicate that trend will continue at an accelerated pace thanks to the infusion of EU funding available for the 2021-2027 programming period, including NRRP.

Figure 5 Total Budget managed by the Municipality of Brașov

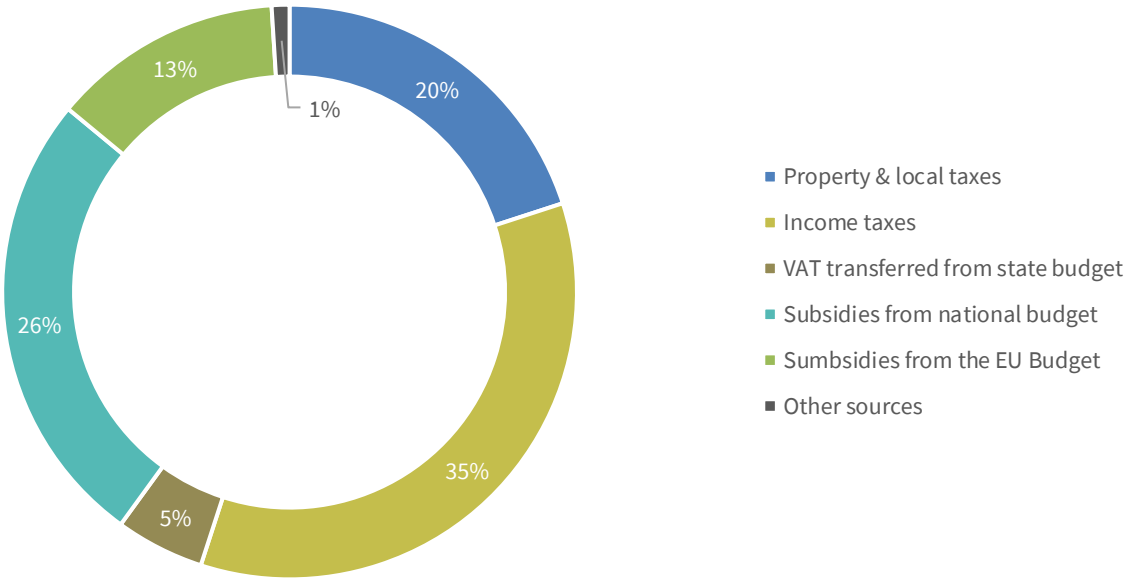


FUNDING ALLOCATION BY FIELD OF ACTION

Of the total revenues of over €314 mil. estimated for 2024, only 55% will come from local income and property taxes, while over 40% will represent transfers from the national and EU budgets for

investment projects. Most of these projects are in climate-related areas, such as public transport, non-motorized mobility, green areas, urban renewal, public lighting etc.

Figure 6 Sources of income



Over 56% of the city budget for 2024 is allocated directly to different interventions targeting climate-neutrality. Sustainable urban mobility is by far the main field of investment, with almost 25% of the total budget. The Municipality has recently purchased over 50 electric & hybrid vehicles (buses, trolleybuses) for public transportation and plans to buy another 90 electric buses, to create dedicated lanes, to build a new garage for buses and a park & ride facility, respectively to finalise an intermodal terminal at the central railway station. Waste management and sanitation has a very generous budget allocation for several interventions aimed at promoting a circular economy: almost 370 digitised eco-island for separate waste collection around multi-apartment residential buildings, two voluntary collection centers for various types of waste, ecologisation of two former landfills and new public toilets. The energy sector is also substantially financed especially for energy renovation works on public and residential buildings, but also for building up a large photovoltaic park that will provide almost 90% of the municipal electricity consumption. Last but not least, the allocation for green infrastructure will reach over 7% of the total local budget and will focus on creating several new parks and planting trees.

Table 3 The capital flow table needs to also incorporate capital stock.

FIELDS OF ACTION	SECTOR SUBSECTION	% CURRENT BUDGET ALLOCATION
TRANSPORTATION	Public transportation	22.0
	Non-motorized mobility (pedestrian, velo)	2.5
BUILT ENVIRONMENT	Urban renewal	2.7
ENERGY SYSTEMS	Energy renovation, district heating and RES generation	7.9
	Public lighting	1.5

FIELDS OF ACTION	SECTOR SUBSECTION	% CURRENT BUDGET ALLOCATION
GREEN INFRASTRUCTURE AND NATURE BASED SOLUTIONS	Green areas & biodiversity	7.5
WASTE AND CIRCULAR ECONOMY	Waste management & sanitation	12.2

STRATEGIC FUNDING AND FINANCING

Assess the city's current financial policies, in order to illustrate how the public administration is allocating capital towards becoming climate neutral.

- ➔ **This evaluation should encompass the existing strategies and resources available to the city to facilitate the transition.**
- ➔ **Identify the various forms of capital available for the city, particularly those specific to local climate neutrality targets.**

The main source of revenue for the local budget is the income tax paid by the residents and commuters. In 2023 the Municipality collected over € 135 mil. from this tax, representing almost 58% of the total revenues. This percentage is estimated to drop to only 35.7% in 2024, following some changes in the national allocation mechanism and a significant increase in the volume of EU and national funding attracted by the city. The taxes on land and buildings amounted to almost € 35 mil. in 2023 and are foreseen to remain at the same level in 2024. The taxes on transport vehicles, permits and licences for economic activities will also remain constant at approximately € 12 mil. Non-fiscal revenues (associated with the landing of public assets, fines and penalties, dividends, services delivered to citizens and companies etc.) are estimated at almost € 16 mil. in 2024, up from only 14 mil. in the previous year.

VAT transfers from the national budget will decrease in 2024 from over to € 20 mil. to approximately € 17 mil., but the subsidies for investment projects (especially under the National Recovery and Resilience Plan) are estimated to jump from € 6 mil. in 2023 to a very ambitious target of 82 mil. **The Municipality anticipated the absorption of over € 40 mil. EU funds compared to only 12 mil. in the previous year.**

INCOME SOURCES FOR THE CITY

Table 4 Income sources for the city

INCOME CATEGORY	CITY INCOME	% OF CITY BUDGET
Income taxes	€ 112.0 mil.	35.7
Property taxes	€ 34.9 mil.	11.1
Vehicle and other local taxes	€ 12 mil.	3.8
Non-fiscal income	€ 15.9 mil.	5.1

INCOME CATEGORY	CITY INCOME	% OF CITY BUDGET
Subsidies from the national budget (including NRRP)	€ 81.9 mil.	26.1
EU funds	€ 40.3 mil.	12.9
VAT transfers from state budget	€ 17.3 mil.	5.5
TOTAL INCOME		**100%**

The projections for 2023 indicate that the Municipality intends to accelerate the use of EU and national funding for major investment projects, with a clear preference for the NRRP and the 2021-2027 Central Regional Programme. The City Hall has already contracted projects with EU financing worth almost € 200 mil. The largest ones include the purchase of 73 electric buses (NRRP)[26], a new garage for public transport vehicles (RP), an nZEB+ campus for dual education (NRRP), a photovoltaic park (LIOP), a park & ride terminal (RP), energy renovation of 9 blocks (NRRP), digitised eco-island and voluntary waste collection centres (NRRP), nZEB+ social housing for young people (NRRP), bicycle (NRRP) and bus (RP) dedicated lanes etc.

CAPITAL SOURCES FOR THE CITY

Table 5 Capital sources for the city

TYPE	SIZE RANGE	LEVEL	DESCRIPTION
2021-2027 Central Regional Programme	€ 150 mil.	Public	The city has a pre-allocation of approximately € 80 mil. for sustainable mobility, urban renewal and green infrastructure. Other projects (eg. energy renovation of public and residential buildings, nZEB+ educational infrastructure etc.) will be submitted under competitive calls.
NRRP	€ 120 mil.	Public	Projects already contracted in the following intervention areas: public transportation and cycling infrastructure, waste collection, energy renovation, nZEB+ public buildings.
Other 2021-2027 EU-funded programmes at national level	€ 150 mil.	Public	The Municipality is eligible to apply for other EU programmes (eg. 2021-2027 Transport Programme for the metropolitan train infrastructure).
EU wide R&D / knowledge exchange programmes (Horizon, DUT etc.)	€ 10 mil[27].	Public	The Brașov Municipality, supported by the 3 development agencies AMB, AMDDPTBV, ABMEE and with additional local partners (ex. University) can access additional funds at EU level to further improve technical capacity

[26] 88 in total, including busses allocated to cities in the metropolitan area.
[27] There is more funding available, but the 10 mil value is an estimation related to the absorption capacity of the municipality (and partner organisations).

			and eventually test innovative solutions. This process is already happening for several years but has to be further extended.
EU PROGRAMMES FOR THE 2028-2034 PROGRAMMING PERIOD	€ 200 mil.	Public	Considering the current policy trends, achieving climate neutrality will become the main target of most post-2027 EU programmes. Therefore, we trust that the city will be ready to absorb significant funding allocated to this priority for the continuation of various interventions initiated in the current programming period.
NATIONAL PROGRAMMES AND SUBSIDIES	€ 100 mil.	Public	CNI is already building a new Sports Hall and plans to rebuild a large stadium in compliance with the nZEB standards. AFM is already financing the modernization of the public lighting system, the decommissioning of polluting cars and the expansion of the EV chargers network.
OWN CITY BUDGET RESOURCES (TAXES AND OTHER LOCAL INCOME SOURCES)	€ 300 mil.	Public	The city currently invests around € 50 mil. per year from its own sources. This amount is likely to grow in the next few years in line with the positive dynamic of the local economy. We estimate that 50% of these funds will be allocated to climate relevant interventions.
GREEN BONDS/LOANS CONTRACTED BY THE MUNICIPALITY	€ 100 mil.	Private	The current indebtedness rate of less than 1% allows the Municipality to issue green bonds or to contract private loans for various large green projects.
PRIVATE CONTRIBUTION OF RESIDENTS, COMPANIES AND OTHER LOCAL ACTORS	€ 170 mil.	Private	While the Municipality will play the central role in achieving climate neutrality, we plan to implement local policies able to mobilise significant private funding. One example are the subsidies for the energy renovation of residential and tertiary buildings and their equipping with photovoltaic & solar panels, respectively heat pumps. Another example is the public support for the purchase of EVs. Such policies will rely on the commitment and financial involvement of individuals and local companies. We intend to make use of CSR campaigns and crowdfunding for punctual measures, such as the creation of pocket parks or the ecologisation of river banks.

COST SCENARIOS AND CAPITAL PLANNING

Present the estimated costs and capital planning associated with the actions outlined in the Climate Neutrality Action Plan. These should ideally serve as targets to optimise towards.

- ➔ **Assess the anticipated financial implications for the city, both as implementation and ongoing operational costs, to inform adjustments to the city budget for their incorporation.**
- ➔ **Make sure that all the proposed actions are listed, including those pertaining to Governance Innovation and Social Innovation.**
- ➔ **Feel free to provide cost projections for the measures detailed in the Action Plan as appropriate.**
- ➔ **Outline the city's capital objectives and how you aim to achieve them, by leveraging various sources of capital.**

(insert here: text + if necessary, relevant visuals - pictures, figures, charts)

COSTS, CAPITAL PLANNING AND ECONOMIC INDICATORS BY ACTION

Make sure to list every one of the actions proposed in the previous chapter.

- ➔ **If feasible, in the fifth column, divide the costs based on the mentioned funding sources and indicate the amount that can be secured from each source individually.**

Our current estimates indicate a total cost of € 1,290 mil. for the implementation of the Action Plan until the end of 2035, meaning an average of approximately € 120 mil. per year. As indicated before, most of the necessary funding will be coming from external sources (EU programmes for the current and future programming period, national subsidies, loans/bonds), as well as from part of the local budget resources allocated and private contributions allocated to green interventions. This capital planning is realistic considering the dynamic of the local budget, the very low indebtedness rate, the large number of green projects already contracted under EU funding and the access of the city to various programmes.

The operational costs are estimated at € 26,929,277.24.

Transport is the field of action with the largest implementation and operational budget (over 50%), consistent with its increasing contribution to GHG emissions. Public transport is the backbone of the whole mobility ecosystem and implies not only large investment in fleet & infrastructure, but also significant subsidies for current operations. The construction sector comes second in terms of financial effort intensity, with more than 25% of the total budget allocated for energy renovation works of existing buildings and the implementation of nZEB+ standards for new public ones. More than 10% of the total budget is allocated to the green areas and biodiversity, especially for the creation of new parks and green-blue corridors. Energy systems and waste management require less investment because they are only partially managed by the Municipality and already benefiting from previous investment.

FIELDS OF ACTION	ACTION	IMPLEMENTATION COSTS/ CAPEX	OPERATIONAL COSTS	POSSIBLE SOURCES OF CAPITAL	% OF THE TOTAL CLIMATE NEUTRALITY BUDGET	% OF THE TOTAL CO2 REDUCTION
ENERGY SYSTEMS	REHABILITATION OF THE DISTRICT HEATING SYSTEM	€ 11,806,000.00	€ 354,180.00	2021-2027 Sustainable Development Programme Post-2027 EU programmes National subsidies Local budget Loans	0.92%	15.07%
	DEVELOPMENT OF NEW RES GENERATION CAPACITIES	€ 22,514,000.00	€ 337,710.00	2014-2020 LIOP Modernization Fund NRRP Post-2027 EU programmes National subsidies Private contributions	1.75%	22.19%
	CLIMATE-PROOFING OF PUBLIC LIGHTING SYSTEM	€ 14,200,000.00	€ 142,000.00	National subsidies Local budget Loans	1.10%	0.23%
MOBILITY AND TRANSPORT	INCREASING THE ATTRACTIVENESS AND USE OF PUBLIC TRANSPORT	€ 561,036,530.21	€ 13,210,730.60	NRRP 2021-2027 Central Regional Programme 2021-2027 Transport Programme Post-2027 EU programmes Local budget	43.49%	11.26%
	ENCOURAGING NON-MOTORIZED TRIPS AROUND THE 15-MINUTE NEIGHBORHOOD CONCEPT	€ 114,999,190.20	€ 2,576,483.80	NRRP 2021-2027 Central Regional Programme Post-2027 EU programmes Local budget National subsidies	8.91%	10.05%
	ENCOURAGING THE USE OF EV	€ 15,241,000.00	€ 761,720	NRRP 2021-2027 Central Regional Programme Local budget National subsidies Private contributions	1.18%	6.98%
WASTE AND CIRCULAR ECONOMY	ENHANCING THE INTEGRATED MANAGEMENT OF MUNICIPAL WASTE AND CIRCULAR ECONOMY	€ 22,376,712.00	€ 895,068.48	NRRP 2021-2027 Sustainable Development Programme Post-2027 EU programmes National subsidies Local budget Private contributions	1.73%	0.23%
GREEN INFR	EXTENSION AND REHABILITATION	€ 139,852,020.00	€ 2,797,040.40	2021-2027 Central Regional Programme	10.84%	2.53%

	OF GREEN AREAS, INCLUDING THROUGH THE RECONVERSION OF BROWNFIELD AREAS			Post-2027 EU programmes Local budget National subsidies		
	CONSOLIDATION OF GREEN-BLUE CORRIDORS AT CITY AND METROPOLITAN LEVEL	€ 9,235,971.00	€ 277,079.13	Post-2027 EU programmes Local budget	0.72%	1.27%
BUILT ENVIRONMENT	**ENERGY RENOVATION OF PUBLIC BUILDINGS**	€ 120,317,655.59	€ 1,804,764.83	NRRP 2021-2027 Central Regional Programme Post-2027 EU programmes National subsidies Local budget	9.33%	2.26%
	ENERGY RENOVATION OF RESIDENTIAL BUILDINGS	€ 200,000,000.00	€ 3,000,000.00	NRRP 2021-2027 Central Regional Programme Post-2027 EU programmes National subsidies Local budget Private contributions	15.50%	12.46%
	NEW NZEB+ PUBLIC BUILDINGS	€ 50,000,000.00	€ 500,000.00	NRRP 2021-2027 Central Regional Programme Post-2027 EU programmes National subsidies Local budget Loans	3.88%	2.26%
SOFT INTERVENTIONS (GOVERNANCE INNOVATION AND SOCIAL INNOVATION)	**PACKAGE OF POLICIES, INCENTIVES AND PUNITIVE MEASURES TO INCENTIVIZE HOUSEHOLDS TO SWITCH TO GREEN ENERGY SOURCES**	€ 1,000,000.00	€ 50,000.00	Local budget	0.08%	6.11%
	PACKAGE OF POLICIES, INCENTIVES AND PUNITIVE MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES	€ 1,100,000.00	€ 55,000.00	Local budget	0.09%	3.20%
	CITIZEN INVOLVEMENT	€ 1,350,000.00	€ 67,500.00	Local budget Private contributions	0.10%	3.91%

	INITIATIVES FOR INCREASED SUSTAINABILITY					

SUMMARISED COSTS AND CO2 REDUCTIONS BY FIELD OF ACTION

FIELDS OF ACTION	TOTAL COSTS FOR ALL THE COVERED ACTIONS	% OF THE TOTAL BUDGET	TOTAL CO2 REDUCTIONS FOR ALL THE COVERED ACTIONS	% OF THE TOTAL CO2 REDUCTION
ENERGY SYSTEMS	**€ 53,520,000.00**	4.15%	**148,604.76**	32.24%
MOBILITY AND TRANSPOR	**€ 691,276,720.41**	53.59%	**113,637.76**	24.65%
D CIRCULAR ECONOMY	**€ 22,376,712.00**	1.73%	**843.80**	0.002
GREEN INFRASTRUCTURE AND NATURE BASED SOLUTIONS	**€ 149,087,991.00**	11.56%	**12,889.27**	0.03
BUILT ENVIRONMENT	**€ 370,317,655.59**	28.71%	**133,051.34**	28.86%
SOFT INTERVENTIONS (GOVERNANCE INNOVATION AND SOCIAL INNOVATION)	**€ 3,450,000.00**	0.27%	**51,953.15**	0.11
TOTAL		100%		

PRIMĂRIA MUNICIPIULUI BRAȘOV

FINANCIAL INDICATORS FOR MONITORING, EVALUATION AND LEARNING

Briefly present the used monitoring indicators and explain them, if necessary.
(insert here: text + if necessary, relevant visuals - pictures, figures, charts)

FINANCIAL INDICATORS BY FIELD OF ACTION

FIELDS OF ACTION	INDICATOR	INDICATOR VALUE AND UNIT
ENERGY SYSTEMS	REHABILITATION OF THE DISTRICT HEATING SYSTEM	CO2 kg / euro
	DEVELOPMENT OF NEW RES GENERATION CAPACITIES	CO2 kg / euro
	CLIMATE-PROOFING OF PUBLIC LIGHTING SYSTEM	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM
MOBILITY AND TRANSPORT	INCREASING THE ATTRACTIVENESS AND USE OF PUBLIC TRANSPORT	CO2 kg / euro
	ENCOURAGING NON-MOTORIZED TRIPS AROUND THE 15-MINUTE NEIGHBOURHOOD CONCEPT	CO2 kg / euro
	ENCOURAGING THE USE OF EV	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM
WASTE AND CIRCULAR ECONOMY	ENHANCING THE INTEGRATED MANAGEMENT OF MUNICIPAL WASTE AND CIRCULAR ECONOMY	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM
GREEN INFRASTRUCTURE & NATURE-BASED SOLUTIONS	EXTENSION AND REHABILITATION OF GREEN AREAS, INCLUDING THROUGH THE RECONVERSION OF BROWNFIELD AREAS	CO2 kg / euro
	CONSOLIDATION OF GREEN-BLUE CORRIDORS AT CITY AND METROPOLITAN LEVEL	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM
BUILT ENVIRONMENT	ENERGY RENOVATION OF PUBLIC BUILDINGS	CO2 kg / euro
	ENERGY RENOVATION OF RESIDENTIAL BUILDINGS	
	NEW NZEB PUBLIC BUILDINGS	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM

SOFT INTERVENTIONS (GOVERNANCE INNOVATION AND SOCIAL INNOVATION)	PACKAGE OF POLICIES, INCENTIVES AND PUNITIVE MEASURES TO INCENTIVIZE HOUSEHOLDS TO SWITCH TO GREEN ENERGY SOURCES	CO2 kg / euro
	PACKAGE OF POLICIES, INCENTIVES AND PUNITIVE MEASURES TO INCENTIVIZE THE TERTIARY AND INDUSTRIAL SECTOR TO SWITCH TO GREEN ENERGY SOURCES	CO2 kg / euro
	CITIZEN INVOLVEMENT INITIATIVES FOR INCREASED SUSTAINABILITY	CO2 kg / euro
	TOTAL CO2 REDUCTION / CAPITAL INVESTED	TONS CO2 / FINANCIAL SUM

CLIMATE POLICIES FOR CAPITAL FORMATION AND DEPLOYMENT

Shortly describe the climate policies you will develop and use for capital accumulation and deployment.

The Municipality is committed to design and implement local policies that will channel significant public and private funding towards the achievement of climate neutrality by 2035. First of all, the action plan foresees that over € 300 mil. from own local budget income be allocated in the next 11 years for climate actions. The same goes for the EU funding and national subsidies attracted by the Municipality. Financially mainstreaming climate neutrality involves a coherent capital deployment having the Action Plan as a guiding strategic document. Secondly, potential private funding is abundant and should back the public efforts up, especially in strategic areas such as private transport and buildings or RES generation. From this perspective, this Plan should also serve as a guiding tool for the mobilisation of private capital.

POTENTIAL CLIMATE POLICIES TO ENABLE CAPITAL DEPLOYMENT

CLIMATE POLICY	DESCRIPTION OF THE POLICY	INTENDED OUTCOME FOR CAPITAL FORMATION
Property tax cuts for certified green building owned by private investors, including those that comply with ESG standards	A local de minimis scheme will be adopted to reduce property taxes by as much as 50% for the private buildings (offices, industrial, commercial and logistic facilities) certified as green ones in compliance with international standards (BREEAM, LEED etc.)	We trust this initiative will encourage a large number of private investors to invest in green building and to reduce the carbon footprint in the construction sector.
“Rabla Local” Programme combined with other incentives for EV owners	The Municipality and the Environmental Fund Agency will reward the decommitment of 5000 cars older than 15 years. The parking policy will be amended to prioritise the allocation of parking lots to EV owners. The public chargers network will be extended to reach the target of 350 charging stations by 2035.	The aim is to renew the private transport fleet and to reduce the GHG emissions generated by cars. We expect some of the beneficiaries to invest in the purchase of new hybrid / electric cars.
Green bonds for major municipal investment projects	The current indebtedness level allows the Municipality to contract additional funding for the implementation of its ambition climate neutrality plan. There are a few options to gather this money, including loans from private banks, IFIs or the issue of green bonds. The last one has the benefit of encouraging a stronger local commitment for climate neutrality.	Large mobilisation of residents and local companies to buy green municipal bonds and to fund major green projects
Financial involvement of private companies in climate-relevant CSR actions	The city has a strong private sector with many large companies owned by foreign investors. These companies have generous CSR budgets and aim to comply with ESG standards. Some of them have already invested in greening their processes and assets (eg. installing photovoltaic	Public-private partnerships for the implementation of pilot neutrality interventions benefiting the whole community (eg. tree planting, maintenance

	panels on supermarkets, replacing their old fleet with EVs etc.), but some of the CSR funding can be directed towards interventions addressing city needs.	of green areas, waste collection and recycling etc.).
Mobilisation of public and private funding for R&D in the field of climate neutrality	Brașov is home to one of the largest public universities in Romania with multiple research centres and teams. Transylvania University should play a central role in attracting resources for the city's transition to climate neutrality, especially through the submission and implementation of EU projects dedicated to R&D in relevant areas (climate change, environmental protection, circular economy etc.).	Additional financial resources allocated to research, development and innovation in the field of climate neutrality at city and metropolitan level, including the implementation of pilot transition measures.

IV. OUTLOOK AND NEXT STEPS

Provide a short overview of the future steps for the Action Plan, including the methods, tools, frequency, and milestones for implementation, monitoring, updating and improvement.

- ➔ **Mention the main implementation thresholds and areas requiring future improvement of documentation, including the envisioned approach for addressing them.**
- ➔ **Make note of periodic iteration and review sessions.**

Through this Action Plan, the Municipality of Brașov commits to embarking on an ambitious journey towards achieving climate neutrality. However, the pursued pathway transcends the local boundaries, as Brașov aspires to be a frontrunner in this transition on both national and European scales, thereby becoming a model of exemplary practices for other cities committed to reducing their CO2 emissions.

FREQUENCY

In addition to implementing the Climate Neutrality Action Plan, the Municipality will also implement the following processes:

- ☐ **ANNUALLY:** Under the Energy Management Unit's coordination, the City Hall will annually monitor the progress of the Action Plan. As such, the public staff will prepare interim assessments, which will evaluate the actions' execution status, the targets' achievement and the extent to which the MEL indicators are met. In this process, the public administration will engage the citizens and also the local stakeholders through the Net Zero Local Coalition, while leveraging the expertise and technologies of the Action Plan signatories, in order to improve the local monitoring capacity.
- ☐ **EVERY TWO YEARS:** The Climate Neutrality Action Plan will undergo biannual updates, based on the evaluations and the monitoring results from the previous period. These updates will incorporate the completed actions, the new interventions, and also the evolution of the contextual factors, ensuring a proper reflection of both the local changes and the European and national climate directives. Additional sessions may convene as needed, in order for the public administration to be able to promptly and effectively address any eventually-emerging situations. The oversight of the updates will be managed by the Brașov City Hall, under the coordination of the Energy Management Unit.

THRESHOLDS AND MILESTONES

- ☐ **2024:** In the immediate future, the main goal is to secure Brașov's inclusion in the M100 Hub, the National Platform designed to assist Romanian cities in their journey towards becoming smart and climate-neutral.
- ☐ **2024-2026:** Up until 2026, the public administration will continue the climate neutrality investment projects started under the National Recovery and Resilience Plan. This work will be undertaken simultaneously with accessing the support offered by the M100 Hub and fostering collaborations with the fellow members of the M100 cohort. Additionally, Brașov Municipality will consolidate its partnerships with the 3 Romanian cities which are part of the EU Mission for Climate-Neutral and Smart Cities.

- ☐ **2024-2027:** The public administration will continue the development and implementation of the investment projects to be funded through the Central Regional Programme, focusing particularly on the priorities which target the environmentally friendly region, the sustainable urban mobility, the sustainable tourism, and the regional attractiveness. Additionally, it will access the financial resources which will become available through other national programmes, including but not limited to the Sustainable Development, Transport, Education and Employment, Health, and Inclusion and Social Dignity Programmes. Furthermore, through platforms such as the M100 Hub, or Energy Cities, Brașov aims to advocate for the transition of cities, metropolitan areas, and functional urban areas towards a carbon-neutral future, thus strengthening its role as a national climate neutrality champion.
- ☐ **2027-2033:** As the current programming period draws to a close, the Municipality will allocate resources for securing additional financing from both public and private sources, in order to increase the funding for the planned climate neutrality projects. Therefore, the efforts will focus on accessing innovative funding schemes, experimenting with blending finance models, and combining the public funds with the private capital. Moreover, within this timeframe, Brașov aims to elevate its role as an European leader in the urban transition towards climate neutrality, by increasing its engagement in key European platforms dedicated to this goal, such as the NetZeroCities and the CapaCities. Throughout this period, the Municipality will also consolidate the dialogue with the private sector, aiming to encourage the local companies to tap into the available non-reimbursable funds that support projects aimed at reducing carbon emissions. Additionally, the public administration will make efforts to attract new investors capable of undertaking investments that accelerate the transition to climate neutrality. Similarly, the Municipality will focus on strengthening the relationships with the citizens, with the goal of empowering them to leverage their individual potential to build a local community that minimizes its carbon footprint.
- ☐ **2033-2035:** During the last two years of implementing the Action Plan, the public administration will direct its efforts towards replicating the locally implemented climate neutrality projects, across the other localities within the Brașov Metropolitan Area. Additionally, during this period, Brașov aims to transform its climate neutrality actions into best practices to be tested by other cities in Romania and Europe.

Additionally, the public administration will continue to implement the measures outlined in the other relevant local strategic documents (e.g., SUMP, Velo Masterplan, Green Infrastructure Strategy), advance its already existing projects (e.g., developing a PPP model for managing the municipal photovoltaic park, identifying the avenues to repurpose the former inert landfills into green spaces), and scale the ongoing initiatives. Simultaneously, the Municipality will allocate dedicated resources to participate in relevant projects developed within international consortia.

As Brașov strives to achieve all the above milestones, the Municipality is committed to carefully consider its marginalised communities, ensuring that their needs are taken into account throughout the implementation of this Action Plan.

Ultimately, one of the main priorities is to receive the European Green Capital award, in order to furtherly advance Braşov's commitment to a green transition. To achieve this goal, the Municipality aims to leverage the available international opportunities for learning, policy development, networking, and visibility (e.g., European Urban Initiative, New European Bauhaus, URBACT, Interreg).

Furthermore, in line with the commitment to climate neutrality, Braşov will concurrently enhance its climate resilience, aiming to ensure a seamless integration between the climate mitigation and adaptation actions.

FUTURE IMPROVEMENT

In terms of areas needing improvement, the public administration will allocate resources and seek support mainly for the needs outlined in the Assistance Needs section.

However, increasing the capacity of the Energy Management Unit through additional resources remains of the highest importance. Additionally, the Municipality needs to strengthen the cooperation with the localities within the Braşov Metropolitan Area and to empower them to actively contribute to achieving climate neutrality at the metropolitan level, by following the model set forth by Braşov.

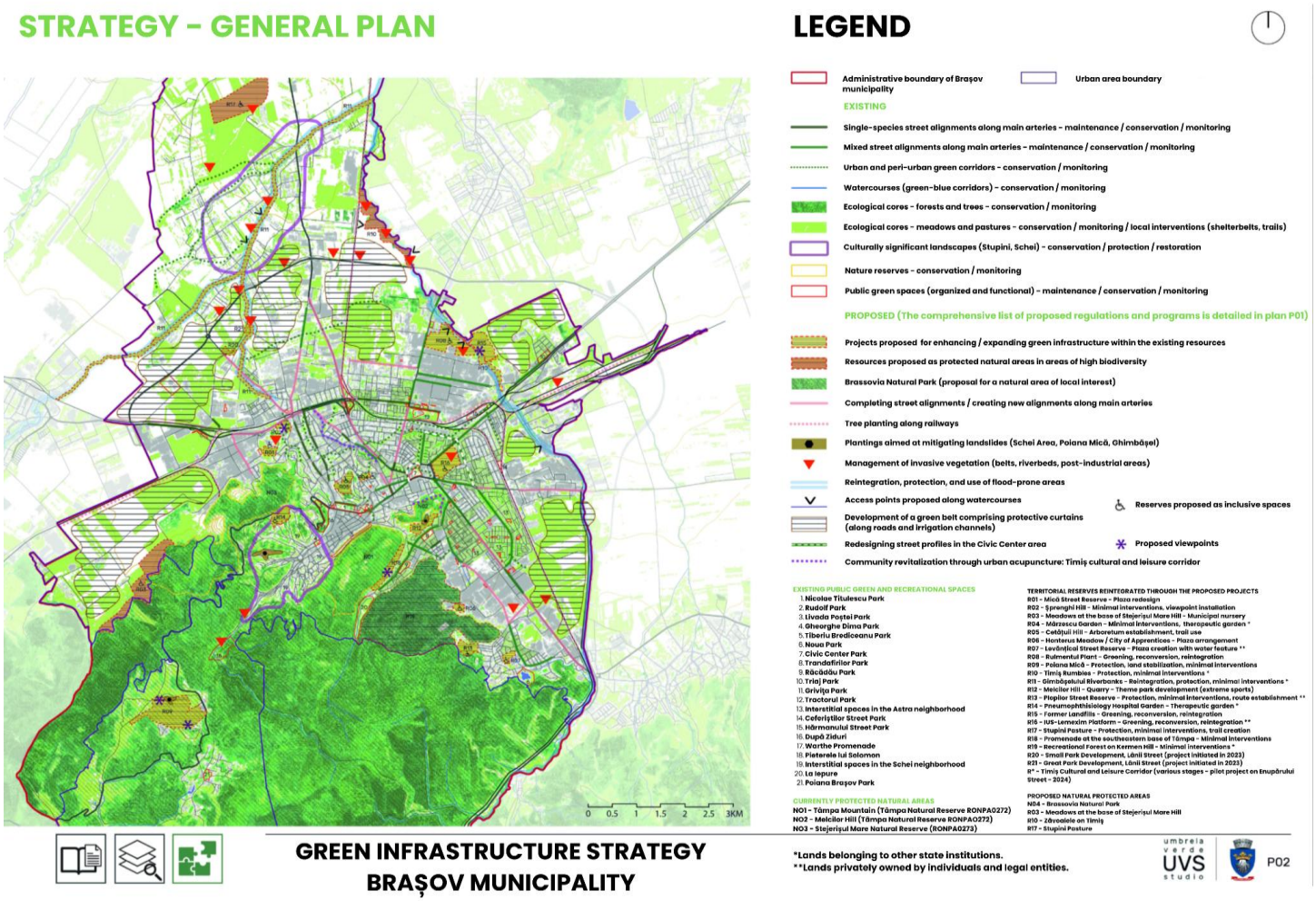
Moreover, the public administration needs to consolidate its collaboration with the local and metropolitan ecosystem (companies, NGOs, academic and RDI institutions) and to nurture strategic partnerships with the relevant regional and national entities, notably the Central Development Agency, and the ministries represented in the M100 Committee (Ministry of Investments and European Projects, Ministry of Research, Innovation, and Digitalization, Ministry of Development, Public Works, and Administration, Ministry of Energy, Ministry of Environment, Waters, and Forests, Ministry of Education).

V. ANNEXES

Include any annexes you consider to be necessary for a better comprehension and / or for the consolidation of the Climate Neutrality Action Plan.

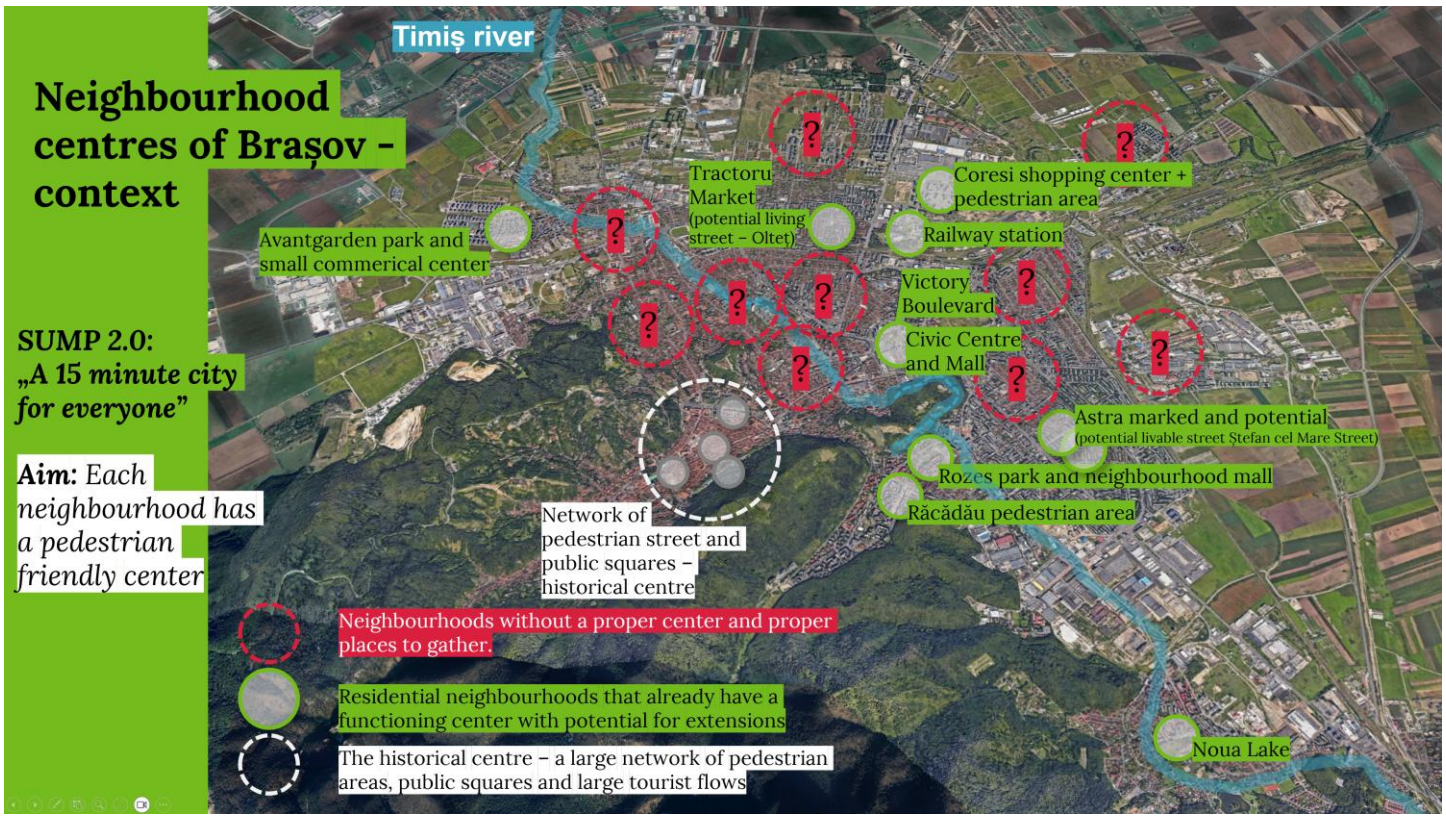
Annex 1 – Planned green space network

The planned green space network of Braşov (mentioned in A4. Extension and rehabilitation of green areas, including through the reconversion of brownfield areas) has been d



Annex 2 – The Timiș canal and the 15 minute city

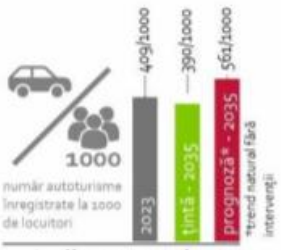
Reclaiming the public space along the Timiș stream and daylighting the watercourse (part of A5. Consolidation of green-blue corridors at city and metropolitan level), thus creating a blue-green corridor, is a key priority of Brașov, as highlighted in multiple sectorial strategies such as: SUMP 2.0, Green Infrastructure Strategy, Urban Regeneration Study, Integrated Air Quality Plan, the CCC (M100 mirror mission) and the Integrated Urban Development Strategy. This corridor was also marked as a priority area by the local community within the We Love Solutions (Life) initiative led by WWF. The entire corridor measures over 12 km and serves 35% of the city's population, but not all segments are currently available for interventions. The strategy is to target those segments where quick interventions with immediate impact are possible, while launching a wider planning and regulation process for the entire corridor.



Annex 3 – SUMP key monitoring indicators and targets

Unde suntem și unde vrem să ajungem [mobilitate și transport]

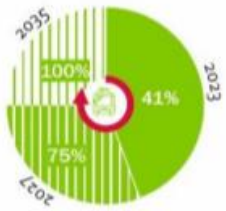
Repartiția modală*



Indice motorizare

Accidente rutiere

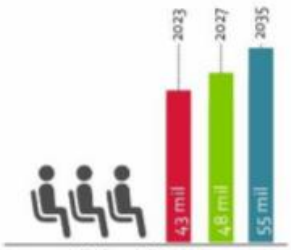
Emisii GES din transport**



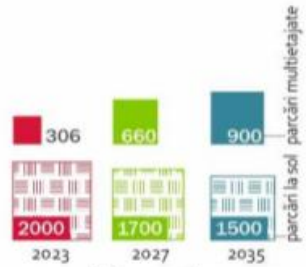
% flotă electrică

% populație la mai puțin de 500 de o stație de TP

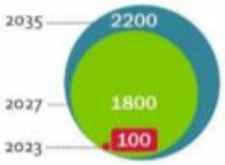
km benzi dedicate TP



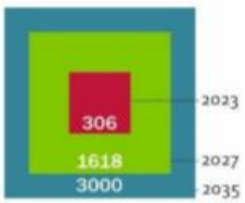
călătorii TP / an



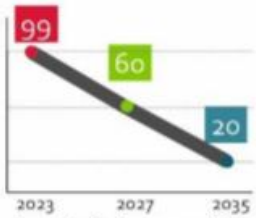
nr. parcări care deservesc centrul istoric***



nr. parcări în P&R



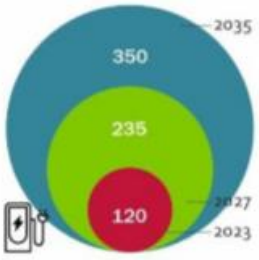
nr. parcări publice în structuri multietajate



km străzi cu parcări neregulamentare

km piste/benzi biciclete

suprafața (ha) a zonei ZNSE*



nr. stații încărcare VE

Luând în considerare complexitatea lucrărilor, este posibil ca anumiți indicatori precum nr. parcări în structuri multietajate, nr. parcări în structuri P&R, piste biciclete etc. să fie îndepliniți abia la finalul anului 2029.
TP - transport public / VE - vehicule electrice / ZNSE - Zonă cu Nivel Scăzut de Emisii (cf. Legea 155/2023)

* Ponderea deplasărilor cu un anumit mod de transport din totaulul deplasărilor. Indicator măsurat în cadrul sondajelor privind comportamentul de mobilitate al cetățenilor. Indicatorul este calculat pentru Municipiul Brașov.
** estimări privind reducerea emisiilor GES confrom PATNC Brașov - se referă stric la teritoriul Municipiului Brașov