NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

GABROVO

GABROVO MUNICIPALITY

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Summary

Textual element

This section summarizes the content of Gabrovo 2030 Climate Neutrality Action Plan (CCC Action Plan), which describes how the city emphasises the importance of achieving the 2030 climate neutrality target of the Cities Mission, and states the specific scope of the CCC Action Plan and how it builds on existing policy frameworks.

The climate action plan for Gabrovo follows a structured approach following the NZC templates with key components:

1. **Baseline Assessment (Part A)**:
    - The climate action plan commences by evaluating greenhouse gas emissions (GHG) based on data from 2008. Between 2008 and 2018, Gabrovo successfully reduced GHG emissions by 32.9%. The ambitious target is to achieve an 80.5% reduction in GHG emissions by 2030
    - The remaining 20% of emissions are considered residual, and the municipality has developed a strategy to address them.
2. **Groundwork and Context (Part B)**:
    - Gabrovo explores existing policies, plans, and projects related to climate change at local, national, and European levels. This provides an overview of past efforts and helps identify barriers and opportunities.
    - The focus is on both climate actions and their social dimensions.
3. **Theory of Change (Part B)**:
    - Gabrovo outlines pathways for short- and long-term change, along with direct and indirect impacts (co-benefits). These impacts are associated with actions in various fields:
        - Energy systems and Built environment
        - Mobility and transport
        - Waste and circular economy
        - Green infrastructure and nature-based solutions
4. **Action Portfolio (Part B)**:
    - The city tests actions – NETZEROHERO pilot project, including those already implemented and ambitious actions.
    - Stakeholders actively participate in implementing these actions.
5. **Indicators and Evaluation**:
    - Gabrovo develops indicators to measure and evaluate the impact of each action, considering whether it directly or indirectly contributes to climate neutrality.
6. **Complementary Actions (Part C)**:
    - Part C describes governance, organizational, and social innovation actions already in place. These support the city's climate neutrality pathway by engaging stakeholders in the transition.

Gabrovo's 2030 Climate Neutrality Action Plan aims to create a sustainable and resilient future by addressing climate challenges collaboratively.

Effective management of change is crucial for ensuring a smooth transition towards climate neutrality and minimizing resistance to these changes. It involves clear communication about the reasons for the shift, the benefits it will bring, and how it will be managed. This is where the role of the Transition Team becomes particularly important. The team is responsible for guiding the process, addressing concerns, and ensuring that all stakeholders are informed and engaged. By fostering a transparent and inclusive approach, the Transition Team helps build trust and commitment, paving the way for successful implementation of climate initiatives and governance changes necessary to achieve climate neutrality. However, CCC Action Plan is not just about achieving climate neutrality, but also about transforming Gabrovo into a sustainable city for future generations that is in alignment with the city's vision for the future. It's about making Gabrovo a leader in climate action and setting an example for other cities to follow. And most importantly, it's about ensuring a better, healthier, and more sustainable future for all.

The CCC Action Plan represents a significant step towards climate neutrality. However, the plan itself is just the beginning. The real challenge lies in its implementation. This requires substantial change management efforts, as it involves shifting existing practices, adopting new technologies, and changing mind-sets.

This Climate City Contract is a living and evolving document that seeks to establish the main objectives, priorities and key principles for achieving climate neutrality in the city of Gabrovo. In this way, it maintains the city's commitment to continue working and improving the plans and actions already underway.

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Abbreviations and acronyms

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

Abbreviations and acronyms	Definition
CCC	Climate City Contract
GVA	Gross Value Added
EU	European Union
SECAP	Sustainable Energy and Climate Action Plan
SUMP	Sustainable Urban Mobility Plan
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
AP	Action Plan
IPPU	Industrial Process and Product Use
AFOLU	Agricultural, Forestry and Land Use
SEAP	Sustainable Energy Action Plan
GWP	Global-warming potential
LPG	Liquefied Petroleum Gas
CNG	Compressed Natural Gas
ETS	European Emissions Trading System
INPEC	Integrated Energy and Climate Plan of the Republic of Bulgaria 2021–2030
RES	Renewable Energy Systems
LED	Light Emitting Diode
MSW	Municipal Solid Waste
CC	Climate Change
NGO	Non-Governmental Organisations
ESG	Environmental, Social, and Governance
DIP- Gabrovo	District information point - Gabrovo
NDEF	National Trust EcoFund
EWMS	Early Warning Monitoring System

1 Introduction

Introduction

Gabrovo's local geographic and policy context in the city´s 2030 Climate Neutrality Action Plan

Gabrovo's 2030 Climate Neutrality Action Plan encompasses a comprehensive range of actions across key focus areas. These include energy systems and the built environment, mobility and transport, waste management, circular economy initiatives, and the development of green infrastructure and nature-based solutions.

Gabrovo in facts and figures

Gabrovo is a city located in North Central Bulgarian region, established in 1860. It is the administrative centre of Gabrovo municipality and Gabrovo district, which included 4 municipalities – Gabrovo, Sevlievo, Tryavna and Drianovo. Gabrovo municipality has a population of about 64 000 people on a territory of 555 sq. km. with 1 city and 133 villages. The city of Gabrovo is situated at the foot of the central Balkan Mountains, in the valley of the Yantra River. Gabrovo is known as the longest city in Bulgaria, stretching over 25 km along the Yantra River. The geographic centre of Bulgaria - Uzana - is located near the city. The territory of Gabrovo municipality is covered more than 50% by forests and it belongs to the important mountainous regions of Europe. Because of that Gabrovo is strongly affected by the climate change and important solutions has to be taken to become climate neutral.

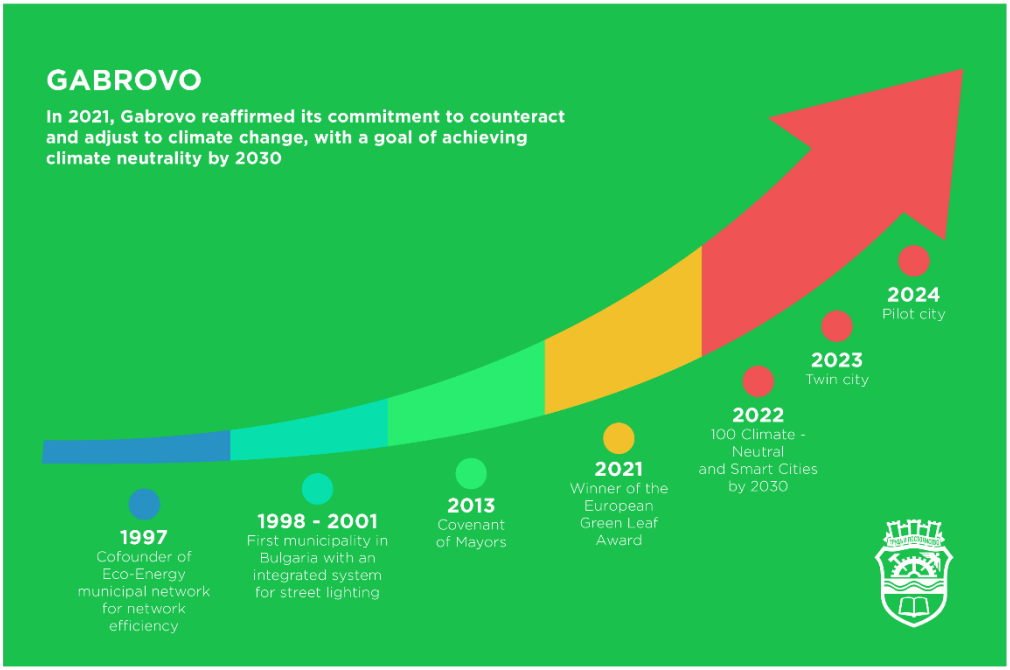
During the Bulgarian Revival period, Gabrovo, known as the "Bulgarian Manchester," was home to the first Bulgarian secular school, Aprilov National School, founded in 1835. The city's strong educational traditions fostered innovation and entrepreneurship. Figures like Ivan Berov, dubbed "the Japanese of the Balkans," introduced electricity and other innovations, while Pencho Semov, known as the "Bulgarian Rockefeller," showcased entrepreneurial talent in Gabrovo.

Presently Gabrovo ranks second in Bulgaria in both economic and social development after Sofia – the Capital of Bulgaria. Gabrovo Province ranks fifth in GDP per capita, average income in the district is higher than the national average, and salaries have been rising at a stable rate. The most important industrial sectors are: mechatronics, robotics, electronics, machine building, and CNC equipment manufacturing, plastics and textile industry.

Gabrovo, with over 3500 companies, prioritizes sustainable economic development through its Smart Specialization Strategy focused on circular economy. More than 50% of these companies are export-oriented and advanced innovators, and the city is actively working on creating carbon-neutral industrial zones in collaboration with the business community.

Gabrovo faces significant climate-related challenges due to extreme weather events. Prolonged droughts followed by torrential rains and hail have caused severe damage to populations, farmers, businesses, and nature. Immediate and bold measures are crucial for Gabrovo to adapt to climate change. Recent data shows that the city's average annual temperature has risen by 1.3°C since 1961, with doubled hot days (temperatures exceeding 30°C). Precipitation patterns have shifted, resulting in more intense rainfall and less snowfall. By 2100, projections indicate a potential 3.9°C temperature increase, quadrupling hot days, an 11% decrease in precipitation, and complete snow cover loss. Indeed, the impact of climate change is far-reaching, affecting various aspects of our lives. Higher temperatures, droughts, and extreme weather events strain water resources, disrupt ecosystems, and challenge infrastructure resilience. Gabrovo's commitment to climate action is not only crucial for its own well-being but also contributes to the broader goal of achieving climate neutrality within the European Union.

Gabrovo's GHG emissions journey



Gabrovo is actively pursuing climate neutrality by 2030, with support from the EU Mission for 100 climate-neutral and smart cities. The municipality's commitment to citizens' well-being and a sustainable climate transition is evident through strategic plans integrated into the Gabrovo Integrated Development Plan (2021-2027), which are:

- *Sustainable Energy and Climate Action Plan - SECAP 2022-2030*
- *Sustainable Urban Mobility Plan – SUMP 2021-2030*
- *Waste management programme of Gabrovo Municipality 2021-2028*
- *Program to promote the use of energy from renewable sources and biofuels - 2021-2030*
- *Strategy for sustainable development of tourism in Gabrovo Municipality 2021-2027*
- *Strategy for smart specialization of Gabrovo Municipality 2021-2030*
- *Environmental Protection Program 2023-2027*

Gabrovo actively participates in European initiatives and holds distinguished membership in EU bodies related to governance and climate change. As part of the "Covenant of Mayors" initiative, Gabrovo commits to regular inventories of Greenhouse Gas (GHG) emissions, following the 2006 IPCC Guidelines. These inventories cover CO_2 and CH_4 emissions, with 2008 as the base year, and are conducted biennially across the entire administrative boundary of Gabrovo municipality.

Gabrovo distinguishes itself among Bulgarian municipalities through proactive energy efficiency and smart city projects. Guided by its Integrated Development Plan 2027, SECAP 2030, SUMP 2030, and S3 2030, Gabrovo takes an integrated approach to sustainable development. The city embraces innovative solutions, adopts clean technologies, and collaborates with local businesses, academia, and civic sectors following the quadruple-helix principle. Gabrovo's vision revolves around being green, innovative, and smart, fostering sustainable economic growth and an environmentally conscious transition.

Gabrovo, guided by the Climate City Contract (CCC), seeks to transform its approach by engaging with local, regional, and national stakeholders. The city's ambitious objective is to achieve climate neutrality by 2030. This collaborative effort aims to break down conventional silos and challenge business-as-usual practices.
The development of Gabrovo's 2030 Climate Neutrality Action Plan involved co-creation processes, engaging the mission Transition Team.
The recently established transition team in Gabrovo has played an active role in preparing the Climate City Contract (CCC). This team's creation marks a significant shift, breaking down silos on both administrative and organizational levels within the municipality. As a newly established structure, the transition team fosters collaboration and innovative approaches toward achieving climate neutrality by 2030.
Gabrovo's climate city ecosystem comprises of stakeholders from various sectors, expertise and level of influence, such as: locally - citizens, academia, schools, media; local and national level - business, NGOs, government – ministries and agencies, local municipal facilities. This new establishment has set the foot forward towards more inclusive and participatory citizenship practice.

The main goal of the Gabrovo CCC and SECAP is: Reduction of greenhouse gas emissions by 80.5% compared to 2008 levels and achieving climate neutrality by 2030. This ambitious target reflects the city's commitment to sustainability and climate neutrality.

Gabrovo's Action Plan aligns with other Climate City Contract components:

2030 Climate Neutrality Commitment: The Action Plan embodies the climate-neutrality ambition shared by the municipality and all stakeholders. It outlines specific actions to achieve climate neutrality, building upon existing efforts as stated in the 2030 Climate Neutrality Commitment.
2030 Climate Neutrality Investment Plan: The Investment Plan closely relates to the Action Plan, assessing the feasibility and economic viability of defined actions. By mapping costs and necessary capital, the Investment Plan serves as a comprehensive long-term economic and financial strategy toward achieving climate neutrality by 2030. Gabrovo also intends to align existing climate action plans, projects, and strategies with the development and subsequent implementation of the 2030 Climate Neutrality Action Plan.
Gabrovo aims to integrate elements from existing sources while developing its 2030 Climate Neutrality Action Plan. Similar to other European cities, Gabrovo focuses on strategies to address climate change and reduce greenhouse gas emissions across various areas: *Energy&Built environment (buildings), Waste&Circular economy, Mobility&Transport, Green infrastructure&NBS (nature-base solutions).*
The goal is to create a harmonious and coherent Action Plan that aligns with existing climate change initiatives aligned with Gabrovo Integrated Development Plan. By complementing measures already implemented, Gabrovo strives to achieve climate neutrality effectively.
The implementation of the activities set in the climate city contract for Gabrovo it is crucial to undertake capacity building in Bulgarian municipalities by improving the competencies of municipal employees in the field of climate change mitigation and adaptation.
This radical change in attitude towards global and local climate change requires an unprecedented effort to work collaboratively with multiple stakeholders to connect the interests and motivators of citizens, the private sector, academia and administrations in the city of Gabrovo while developing and implementing a comprehensive plan for climate neutrality.
Gabrovo is well known as one of the most proactive, innovative and entrepreneurial cities in Bulgaria with a rich history and vibrant culture. It is also one of the most proactive Bulgarian municipalities in acquisition of EU funds and it is an active partner in many EU projects focused on innovations, energy efficiency, innovative and sustainable procurement, energy communities and smart cities, funded by Horizon Europe, Horzion 2020, Interreg Europe, Interreg Danube, Erasmus+, Urbact and others.

In its journey towards becoming a climate-neutral and smart city, Gabrovo has made significant strides over the past 20 years by developing and implementing sustainable energy policies, strategies, and projects in key sectors such as buildings, transportation, waste management, street lighting, renewable energy integration, smart grids, and energy communities.
As Gabrovo aims to achieve climate neutrality and become a smart city by 2030, this document serves as a testament to the city's commitment to the Sustainable Development Goals (SDGs). The vision is based on the collective efforts and collaboration of all relevant stakeholders and the Gabrovo community. The present CCC Action Plan presents the roadmap of Gabrovo city that outlines the main strategies and actions to reduce greenhouse gas emissions and achieve climate neutrality by 2030.

Developed through a collaborative effort involving Gabrovo Municipality, regional and national partners, the local business community, researchers, and academia, this plan is a testament to our commitment to addressing one of the most pressing issues of our time: climate change. It is not merely a plan but a pledge to future generations that we are dedicated to preserving the environment and ensuring a sustainable future.
The document provides a detailed information about Gabrovo climate neutrality goals, planned actions and measures, timeline and expected outcomes, to be achieved. Gabrovo's Climate City Contract identifies a portfolio of actions by the city and its stakeholders, impact pathways and investment plan in the focus areas: energy systems and built environment, mobility and transport, waste and circular economy; green infrastructure and nature-based solutions. The progress of AP implementation will be monitored and evaluated by the described at the end of the document set of indicators.
The goals and priorities of Gabrovo CCC are subordinated to Gabrovo Integrated Development Plan 2021 - 2027 and its vision: "Gabrovo - a green, innovative and accessible municipality, with a rich cultural heritage and sustainable tourism, open to the people."
The main goal of the Gabrovo CCC and SECAP is: Reduction of greenhouse gas emissions by 80.5% compared to 2008 levels and achieving climate neutrality by 2030.
Gabrovo has outlined a comprehensive set of measures to achieve climate neutrality by 2030. These measures include:

- Increasing the use of renewable energy sources (RES)
- Enhancing energy efficiency
- Retrofitting buildings and installations sustainably (across public, private, and tertiary sectors)
- Promoting electric mobility (cars and buses) to reduce traffic emissions
- Implementing circular economy practices by minimizing waste and maximizing material reuse
- Exploring nature-based innovative solutions for sustainable green infrastructure
- Strengthening collaboration, conducting training sessions, workshops, and awareness campaigns within the Gabrovo Climate Change ecosystem

The successful implementation of Gabrovo CCC Action Plan was developed and will be implemented in strong partnership and collaboration with all actively engaged stakeholders. This includes local authorities and institutions, local business community, academia, NGOs and other key players in Gabrovo and the region.

Establishment of a new governance model

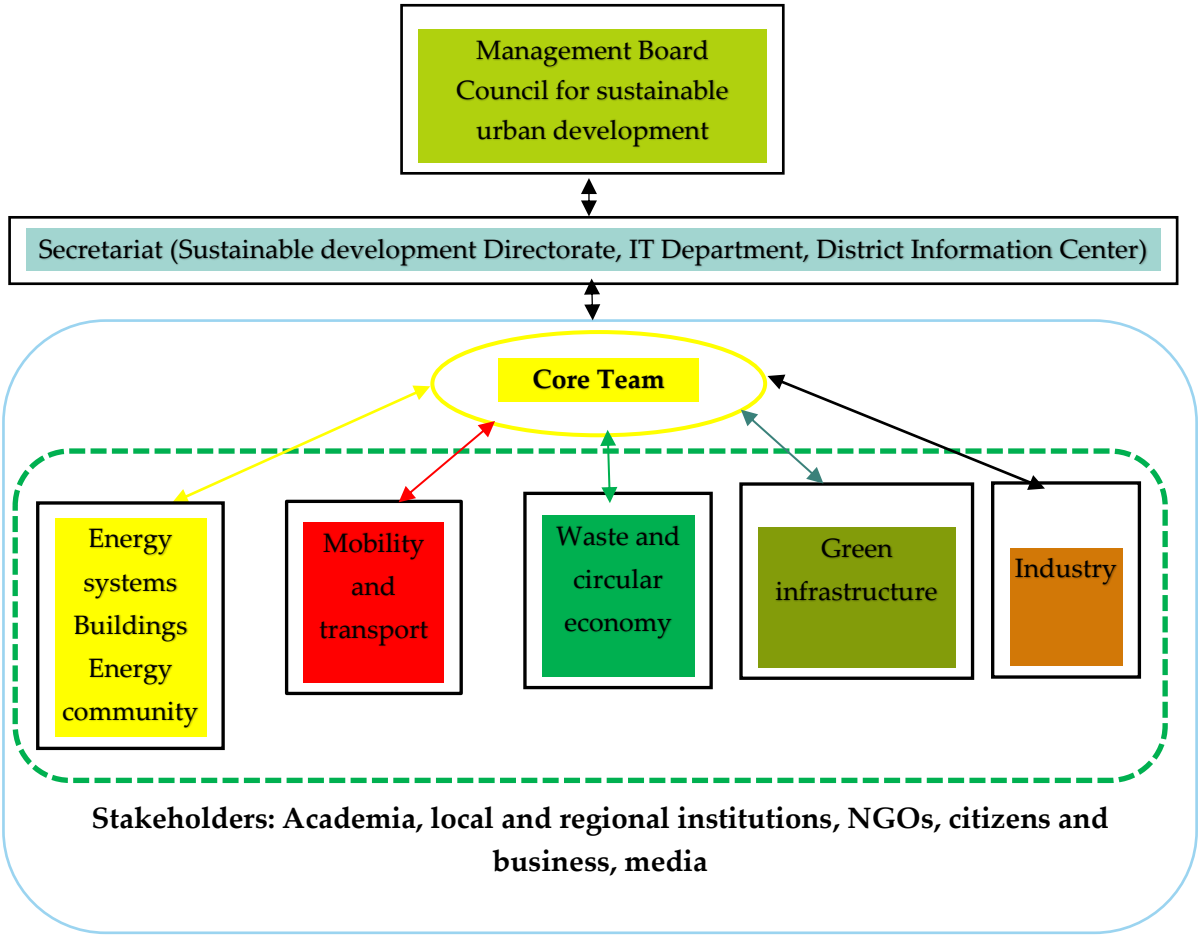
To ensure the efficient and successful implementation of Gabrovo's CCC Commitment, a dedicated Transition Team was established by Mayor Tanya Hristova in July 2024. This team operates under the oversight of the Managment Board (MB), which role is played by Gabrovo Council for Sustainable Urban Development. The MB is responsible for approving the integrated territorial investments outlined in the Gabrovo Integrated Development Plan 2027.

The Transition Team's composition is diverse and dynamic, involving not only Gabrovo Municipality's administration but also representatives from the quadruple-helix sectors. These sectors include regional and national authorities, business leaders, academia, and healthcare professionals.

The Transition Team's structure and responsibilities are carefully organized to leverage the unique skills and knowledge of each member. While maintaining simplicity, the team ensures effective communication. Their multifaceted duties include synchronizing efforts across various sectors, aligning initiatives with climate neutrality objectives, and fostering collaborative communication among stakeholders. This approach cultivates teamwork and mutual respect.
Gabrovo CCC has full political commitment the driving force behind Gabrovo's journey towards climate neutrality. Their dedication, expertise, and collaborative spirit are what will guide us towards a sustainable future. Together, we are making Gabrovo a leader in climate action.

The Transition Team is the center for the implementation of the planned actions in the 2030 Climate Neutrality Action Plan and to ensure the 2030 Climate Neutrality Commitments are achieved. The Municipality of Gabrovo brought together members that enriched the team, bridging the municipality and the ecosystem of multiple actors across society towards climate neutrality by 2030. With this in mind, the Gabrovo Transition Team was established to lead these efforts.

Gabrovo Transition Team



The Transition Team

The purpose of the Transition Team is to develop a new inclusive model for urban development by involving various stakeholders, ensuring transparency and information exchange at the concept development stage, and improving interaction to encourage civic participation in decision-making. The lessons learned, which were the driving force behind the formation of this team, underscore the importance of dialogic coordination, broad invitations for participation without exclusion, and engaging the local community in the use, implementation, and long-term sustainability of projects. Additionally, it is crucial to maintain structured processes with clear rules, distributed responsibilities, and tasks. Balancing formal and informal communication, utilizing unified portals for comprehensive and up-to-date information, simplifying project presentations for the general public, integrating communication channels, and disseminating timely information are also essential. These lessons highlighted the necessity for a dedicated team to address these aspects effectively.

Structure and functions:

Management Board (MB): The functions of the MB is played by Gabrovo Council for Sustainable Urban Development, appointed by Order No. 1460 dated 22.07.2024.

The Management Board represents the four pillars of the quadruple helix governance model by comprising members from business, academia and research, government, and society (citizens). The stakeholders involved in the process and related to the Council of Urban Sustainable Development include local communities (citizens and/or their representatives), other municipalities, central executive authorities, regional authorities, the private sector, environmentalists and environmental protection organizations, trade unions and employer organizations, service providers (utilities), scientific and research organizations (universities), funding organizations, and the media.

The MB has supervisory functions and monitors the progress of the implementation of Gabrovo's CCC by observing the results of the agreement's monitoring. It evaluates the effectiveness of the work of the various departments in achieving the goals of Gabrovo CCC by 2030 and provides recommendations for improving their work. The MB convenes at least twice a year for organized meetings, either in person, online, or in a hybrid format to structure the processes in the creation, implementation, monitoring, and evaluation of sustainable urban development policies at the local level, by concentrating and directing the efforts of stakeholders; increasing the efficiency of resource utilization and more successful implementation of Integrated Territorial Investments (ITI); strengthening the pluralistic approach in local governance. The Council of Sustainable Urban Development is a natural extension of the already established and implemented practices of the Municipality of Gabrovo. Since the early 2000s, the municipality has been organizing Climate and Energy Days in collaboration with Eneffect. These initiatives have laid a strong foundation for the Council's current efforts in promoting sustainable urban development and citizens' engagement.

Secretariat: Directorate for Sustainable Development, in collaboration with ICT Department and Gabrovo District Information Center (communicator).

The Secretariat organizes the work of the Transition Team of Gabrovo Municipality, including planning and organizing the schedule and meetings of the MB, as well as all operational meetings for the respective departments. It prepares the agenda and minutes of all meetings, publishes the results of the work on the Gabrovo CCC on the designated platform, invites participants to the meetings, and all stakeholders in the respective departments. It ensures the technical support for the meetings and assists and coordinates the work of the Transition Team, including all planned campaigns and seminars to enhance the capacity of the community, including citizens and businesses. It organizes the conduct and reporting of the results of the monitoring of Gabrovo CCC and their dissemination to the general public.

The rationale behind focusing on these five areas is Gabrovo's extensive experience in these domains. The Gabrovo municipality has been engaged in projects within these areas for years, thereby accumulating substantial expertise and knowledge. This experience, coupled with the already achieved reductions in CO2 emissions and the implementation of new greenhouse gas (GHG) measures, underscores the municipality's commitment to sustainable development towards climate neutrality by 2030. The Transition Team is divided by the areas of interventions in the focus of Gabrovo CCC, as follows:

1. Energy Systems & Built environment (buildings and energy communities)
2. Mobility & Transport
3. Waste &Circular Economy
4. Green Infrastructure & NBS
5. Public engagement

THE CORE TEAM

Comprises accomplished experts from Gabrovo Municipality. Their primary responsibility is to coordinate the implementation of planned actions across all sectors of Gabrovo CCC. They will oversee and manage the established working groups, collaborating closely with appointed organizations and partners.

Gabrovo Transition Team operates under the leadership of Gabrovo Municipality and involves key directorates, including the Directorate for Infrastructure and Environment, the Directorate for Territorial Planning, and the Directorate for Education and Social Activities. These directorates play essential roles in coordinating and implementing climate action initiatives.

Communication efforts supporting the transition team's work are overseen by an expert team within the transition team itself. This expert team is responsible for public engagement, capacity building, and organizing information campaigns.

The creation of the Gabrovo Transition Team was a collaborative effort, with strong partnerships and commitments from regional governmental institutions, the Technical University of Gabrovo, local companies, the Regional Innovation Center "Ambitious Gabrovo," EnEffect Consult Sofia, Bulgarian ministries, and other interested parties.

Community development is a process where members come together to take collective action and generate solutions to common problems, often involving "capacity building" to improve the community. This process is similar to generalist social work practice models, which include steps such as exploration, engagement, assessment, planning, implementation, goal attainment, and termination. Implementing these initiatives is crucial for Gabrovo's ambition to achieve climate neutrality by 2030. Engaging citizens through online platforms, surveys, and public forums ensures active community involvement in decision-making, fostering a sense of ownership and responsibility towards climate action. Educational campaigns and integrating climate education into school curriculums raise awareness and instill sustainable practices from a young age. Encouraging community-led projects and collaborating with local businesses promote innovative and sustainable solutions, while regular updates and feedback mechanisms ensure transparency and continuous improvement. Together, these efforts create a cohesive and informed community dedicated to reducing greenhouse gas emissions and achieving a sustainable future.

Gabrovo's CCC process

As previously mentioned, Gabrovo takes a holistic approach to climate neutrality, considering various sectors such as waste management, land use, and industrial processes, along with citizen awareness and participation.

Recognizing that Gabrovo cannot achieve climate neutrality by 2030 in isolation, the municipality is committed to establishing meaningful partnerships with stakeholders. These stakeholders include businesses, industry representatives, associations, organizations, academia, and citizens. They collectively bear responsibility for a significant share of emissions within the municipality and play a crucial role in implementing climate action.

Most importantly, this process is not a one-time event; it serves as an opportunity to foster stronger relationships between the municipality and stakeholders while promoting synergies among different groups. The ultimate goal is to initiate a transformative process that enables integrated systemic change.

Table I-1.1: Climate Neutrality Target by 2030

Climate Neutrality Target by 2030			
Sectors	**Scope 1**	**Scope 2**	**Scope 3**
Stationary energy	Included	Included	-
Transport	Included	Included	-
Waste	Included	-	-
IPPU	-	-	-
AFOLU	Included	-	-
Geographical boundary	**Same as city administrative boundary**	**Smaller than city administrative boundary**	**Larger than city administrative boundary**
			X
Map			

2 Part A – Current State of Climate Action

The city of Gabrovo is widely recognised in Bulgaria as front-runner on climate and energy topics and has pledged itself to lead on climate action, setting forth ambitious Goals and projects. Gabrovo has proved its place as an innovative, entrepreneurial, and industrious city through successful projects that managed to reduce CO2 eq emissions already by 32,9% until 2018. It has won a few accolades along the way: being a founder of the EcoEnergy municipal network in 1997, it became the first Bulgarian Municipality with an integrated system for street lighting back in 1998 and the first with energy efficiency demonstration zone in 2005. The city became member of the Covenant of Mayors in 2013, completed multiple projects in the framework of its SEAP, and won the European Green Leaf Award in 2021; in 2022, it won in the Green Municipality category in National Mayor Awards with its vision to become the first Bulgarian climate-neutral city.

The challenges however remain and even grow stronger, as despite the multiple projects in public infrastructure, the drive to engage residential and commercial building owners, involve enterprises and transform private transportation is becoming even more demanding due the overlapping energy and economy crises. The fight for every saved kilowatt-hour is getting harder, and the pressure from disinformation and rejection of European values is being felt deeper and deeper.

2.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory

GhG Emissions Baseline inventory
The Sustainable Energy and Climate Action Plan of Gabrovo Municipality by 2030 (SECAP) was developed in connection with the accession of the municipality, approved by Decision No 129 / 25.07.2013 of the Municipal Council - Gabrovo and the commitments to the Covenant of Mayors. The preparation of the SECAP is in line with all existing strategic and programming documents operating on the territory of the municipality and the goals set by the Covenant of Mayors by 2030. The plan has been developed in accordance with the guidelines set by the Covenant of Mayors. To identify the best areas of action to reduce CO_2 eq emissions by at least 40% by 2030, the SECAP uses the results of the **2008 Baseline** CO_2 eq Emission Inventory and the trend towards **interim year 2018**. In connection with the development of the 2030 Climate Neutrality Action Plan, the greenhouse gas inventory was updated to include emissions from stationary sources in industry and the absorption of carbon dioxide by forests. The GHG inventory has been developed according to the requirements of the Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP)' PART 2 – Baseline Emission Inventory (BEI) and Risk and Vulnerability Assessment (RVA) and IPCC 2006. The GHG inventory includes CO_2 and CO_2 equivalent emissions (emissions from electricity consumed, and CH_4 emissions from the waste sector). Total emissions are expressed in CO_2 equivalent with the application of GWP in accordance with the Fifth Assessment Report – IPCC. The GHG inventory is presented in four main groups of sources: 1. Stationary combustion processes: • Municipal buildings, equipment/facilities • Municipal street lighting • Residential buildings • Tertiary (non-municipal) buildings, equipment/facilities • Industrial facilities 2. Mobile combustion processes

- Municipal fleet of vehicles
- Public transport
- Private and commercial transport

3. Domestic solid waste
4. AFOLU

A-1.1: Final energy use by source sectors

The total energy consumption on the territory of the municipality in 2008 was 844 574 MWh.

The main energy user on the territory of the municipality was the Private and Commercial Transportation subsector with 43.2% of the total energy consumption followed by subsector Industrial facilities with 35.9% of the energy on the territory of the municipality. Residential buildings subsector consumes 15.7% of the energy on the territory of the municipality.

The final energy consumption by type of energy and sectors is presented in *Table A-1.1.1* and *Figure 1.* 30.7% of the energy consumed is electricity used in the buildings and facilities sector, followed by diesel fuel in the transport sector (26.4%) (See *Table A-1.2.1* and *Figure 3*).

Table A-1.1.1: Final energy use by source sectors, 2008

Base year - 2008	**Unit - MWh/year**			
	Scope 1	**Scope 2**	**Scope 3**	**Total**
Buildings and facilities	186 880	283 646	-	470 527
Natural gas	0	-	-	0
Gas oil	28 025	-	-	28 025
Lignite coal	7 814	-	-	7 814
Other coal	84 783	-	-	84 783
Other fossil fuels	42 170	-	-	42 170
Biofuels	14 838	-	-	14 838
Other biomass	6 547	-	-	6 547
LPG	2 703	-	-	2 703
Heat	-	24 005	-	24 005
Electricity	-	259 641	-	259 641
Transport	373 441	607	-	374 048
CNG	3 136	-	-	3 136
LPG	52 804	-	-	52 804
Diesel	222 642	-	-	222 642
Gasoline	94 858	-	-	94 858
Electricity	-	607	-	607
Waste	-	-	-	-
Industrial Process and Product Use (IPPU)*	-	-	-	-
Agricultural, Forestry and Land Use (AFOLU)	-	-	-	-

* - Emissions from fuel combustion in buildings and facilities are included in Buildings and facilities

The total energy consumption on the territory of the municipality in 2018 was 807 338 MWh.

The primary energy consumer within the municipality was the Private and Commercial Transportation subsector, accounting for 44.5% of the total energy consumption. Following closely was the Industrial Facilities subsector, responsible for 33.9% of the energy usage within our territory. The Residential Buildings subsector consumed 16.0% of the energy. These figures highlight the distribution of energy demand across different sectors in our community.

The breakdown of final energy consumption by energy type and sectors is detailed in Table A-1.1.2 and Figure 2. Notably, 32.4% of the energy consumed belongs to the transport sector, primarily in the form of diesel fuel. Additionally, the buildings and facilities sector relies significantly on electricity, accounting for 29.6% of the total energy usage (refer to Table A-1.2.2 and Figure 4)

Table A-1.1.2: Final energy use by source sectors, 2018

Interim year - 2018	**Unit - MWh/year**			
	Scope 1	**Scope 2**	**Scope 3**	**Total**
Buildings and facilities	170 325	258 628	-	428 953
Natural gas	33 724	-	-	33 724
Gas oil	13 247	-	-	13 247
Lignite coal	1 247	-	-	1 247
Other coal	54 241	-	-	54 241
Other fossil fuels	5 129	-	-	5 129
Biofuels	54 821	-	-	54 821
Other biomass	3 469	-	-	3 469
LPG	4 448	-	-	4 448
Heat	-	19 328	-	19 328
Electricity	-	239 300	-	239 300
Transport	378 385	-	-	378 385
CNG	5 337	-	-	5 337
LPG	48 046	-	-	48 046
Diesel	261 848	-	-	261 848
Gasoline	63 154	-	-	63 154
Electricity	-	-	-	-
Waste	-	-	-	-
Industrial Process and Product Use (IPPU)*	-	-	-	-
Agricultural, Forestry and Land Use (AFOLU)	-	-	-	-
* - Emissions from fuel combustion in buildings and facilities are included in Buildings and facilities				

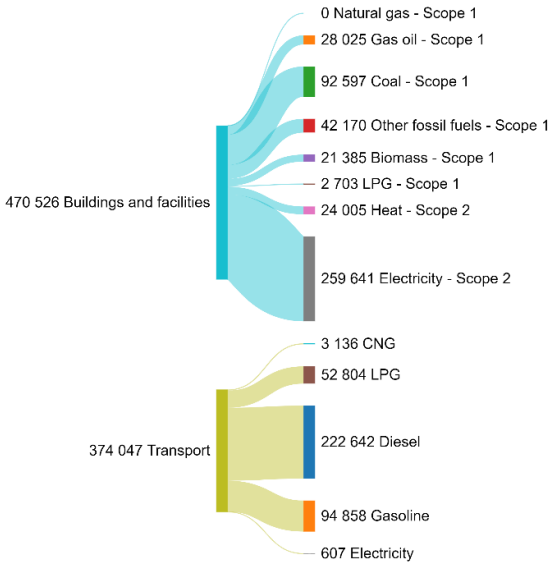


Figure 1 Final energy use by type of energy by sectors in 2008, MWh/year

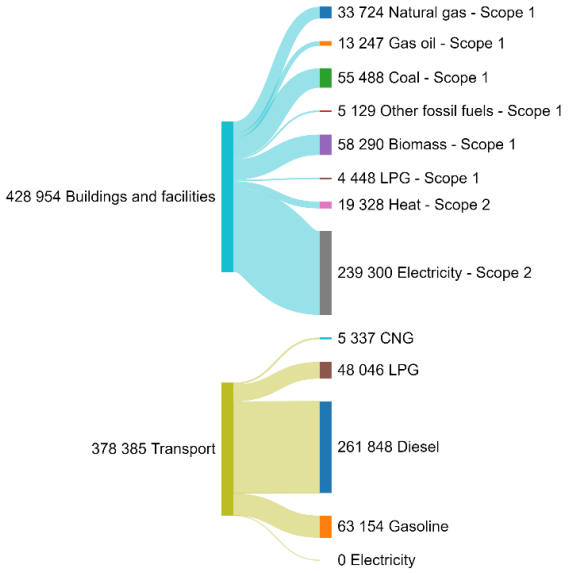


Figure 2 Final energy use by type of energy by sectors in 2018, MWh/year

A-1.2: Activity by source sectors.

Table A-1.2.1: Activity by source sectors, 2008

Base year	2008		
	Scope 1	Scope 2	Scope 3
Sector: Buildings and facilities	186 880	283 646	-
Municipal buildings, including public lighting, MWh	5 069	10 857	-
Tertiary buildings, MWh	10 221	8 599	-
Residential buildings, MWh	7 448	124 833	-
Industrial facilities, MWh	164 142	139 357	-
Sector: Transport	373 441	607	-
Municipal fleet of vehicles, MWh	3 879	-	-
Public Transportation, MWh	4 933	607	-
Private and Commercial Transportation, MWh	364 629	-	-
Sector: Waste	29 000	-	-
Waste disposal, t	29 000	-	-
Sector: Agricultural, Forestry and Land Use (AFOLU)	-76 007	-	-
Absorption of CO2, t CO2	-76 007	-	-

Table A-1.2.2: Activity by source sectors, 2018

Interim year	2018		
	Scope 1	Scope 2	Scope 3
Sector: Buildings and facilities	170 325	258 628	-

Interim year	2018		
	Scope 1	Scope 2	Scope 3
Municipal buildings, including public lighting, MWh	5 147	7 665	-
Tertiary buildings, MWh	5 045	7 915	-
Residential buildings, MWh	8 128	121 048	-
Industrial facilities, MWh	152 005	122 000	-
Sector: Transport	378 385	-	-
Municipal fleet of vehicles, MWh	9 839	-	-
Public Transportation, MWh	8 941	-	-
Private and Commercial Transportation, MWh	359 605	-	-
Sector: Waste	17 911	-	-
Waste disposal, t	17 911	-	-
Sector: Agricultural, Forestry and Land Use (AFOLU)	-41 088	-	-
Absorption of CO2, t CO2	-41 088	-	-

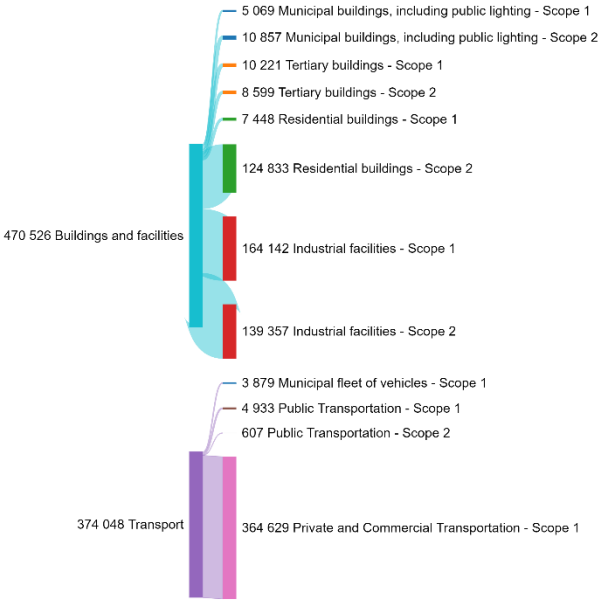


Figure 3: Final energy use by sectors in 2008, MWh/year

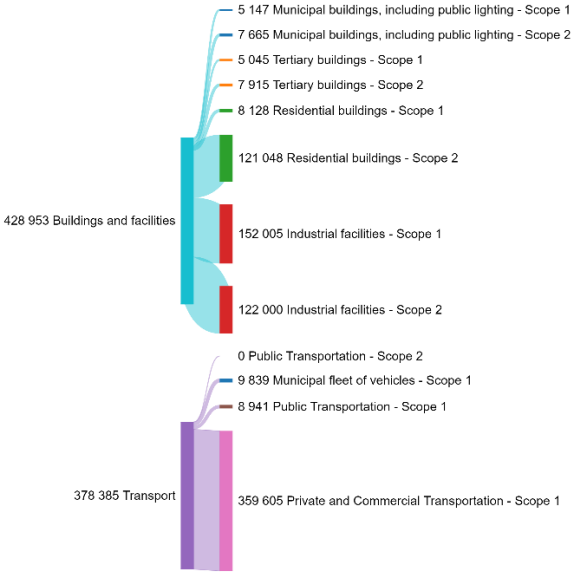


Figure 4: Final energy use by sectors in 2018, MWh/year

A-1.3: Emission factors applied

For specific emissions per unit activity, we utilized both default and national emission factors. The default factors align with the IPCC principles and are outlined in the IPCC Guidelines 2006 (IPCC, 2006). Meanwhile, national emission factors are derived from the National Inventories of GHG emissions in the Republic of Bulgaria.

Notably, CO2 emissions resulting from the sustainable use of biomass or biofuels are considered zero. Additionally, the emission factor for heat production was obtained from the Annual Reports on the

European Emissions Trading System (ETS) of TOPLOFIKATSIYA GABROVO EAD, specifically focusing on district heating in Gabrovo.

Table A-1.3: Emission factors applied

Primary energy/ energy source	t CO2 eq /MWh	
	2008	2018
Electricity	0.819	0.461
Heat	0.447	0.073
Natural gas	0.204	0.204
LPG	0.237	0.227
Gas oil	0.261	0.264
Diesel	0.268	0.267
Gasoline	0.254	0.249
Lignite coal	0.334	0.351
Other coal	0.347	0.329
Other fossil fuels	0.276	0.279

A-1.4: GHG emissions by source sectors

Total GHG emissions on the territory of the municipality in 2008 are 324 566 t CO2eq with LULUCF and 400 573 t CO2eq without LULUCF. GHG emissions by source sectors are presented in *Table A-1.4.1* and *Figure 5*.

The main source of GHG emissions were Buildings and facilities sector with 68.6% of total emission without LULUCF, followed by Transport sector (24.3%) and Waste sector with 7.0%.

In the LULUCF sector 76 007 tons of CO2 were absorbed in 2008.

Table A-1.4.1: GHG emissions by source sectors, 2008

Base year		2008			
Unit		t CO2equivalent/year			
		Scope 1	Scope 2	Scope 3	Total
Buildings and facilities		51 592	223 387	-	274 979
Transport		96 973	497	-	97 470
Waste		28 124	-	-	28 124
Industrial Process and Product Use (IPPU)		-	-	-	-
Agricultural, Forestry and Land Use (AFOLU)	Sources (positive emissions)	-	-	-	-
	Sinks (negative emissions)	-76 007	-	-	-76 007
Total		100 681	223 884	-	324 566

In 2018, the total greenhouse gas (GHG) emissions within the municipality amounted to 216,743 t CO2eq with land use, land-use change, and forestry (LULUCF) considered, and 257,831 t CO2eq without LULUCF. The primary source of GHG emissions is the Buildings and Facilities sector, accounting for 55.4% of the total emissions (excluding LULUCF). It is followed by the Transport sector (37.9%) and the Waste sector (6.8%). Additionally, the LULUCF sector absorbed 41,088 tons of CO2 in 2018

Table A-1.4.2: GHG emissions by source sectors, 2018

Interim year		2018			
Unit		t CO2equivalent/year			
		Scope 1	Scope 2	Scope 3	Total
Buildings and facilities		31 117	111 601	-	142 719
Transport		97 609	-	-	97 609
Waste		17 503	-	-	17 503
Industrial Process and Product Use (IPPU)		-	-	-	-
Agricultural, Forestry and Land Use (AFOLU)	Sources (positive emissions)	-	-	-	-
	Sinks (negative emissions)	-41 088	-	-	-41 088
Total		105 142	111 601	-	216 743

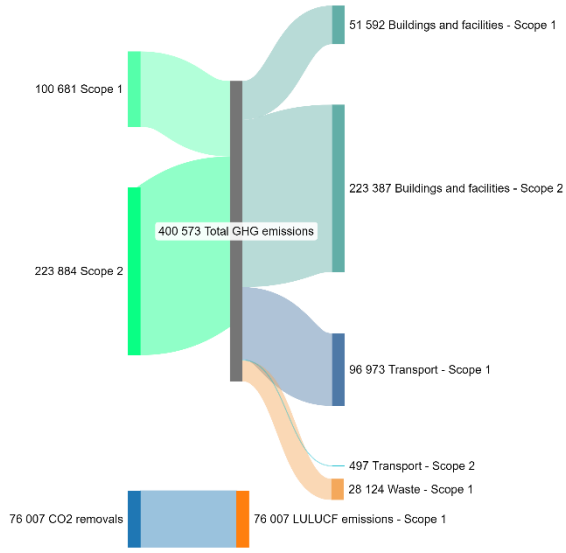


Figure 5: GHG emissions by source sectors and scopes 2008, t CO2 eq

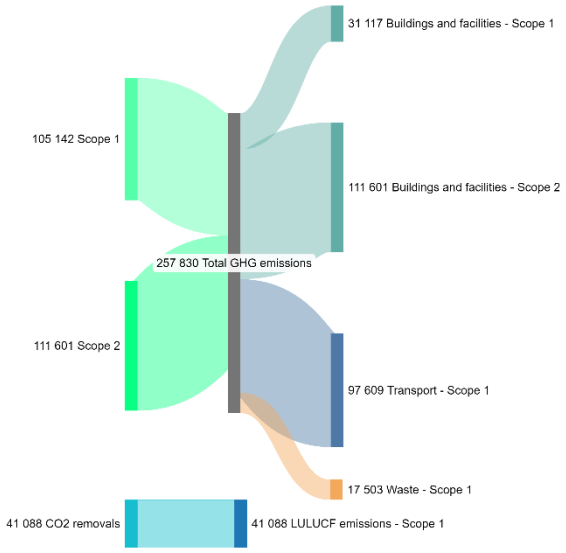


Figure 6: GHG emissions by source sectors and scopes 2018, t CO2 eq

A-1.5: Description and assessment of GHG baseline inventory

As a result of targeted activities aimed at reducing the GHG emissions under the Convention of Mayors by a minimum of 20% by 2020 (according to SEAP - Gabrovo) and by a minimum of 40% by 2030 (SECAP - Gabrovo), the municipality has observed a trend in emissions reduction, as depicted in Figure 7.

Figure 7 also includes data from 2020, which was inventoried in accordance with the Covenant of Mayors. However, 2020 was not considered an interim year due to the impact of the COVID-19 pandemic on emissions.

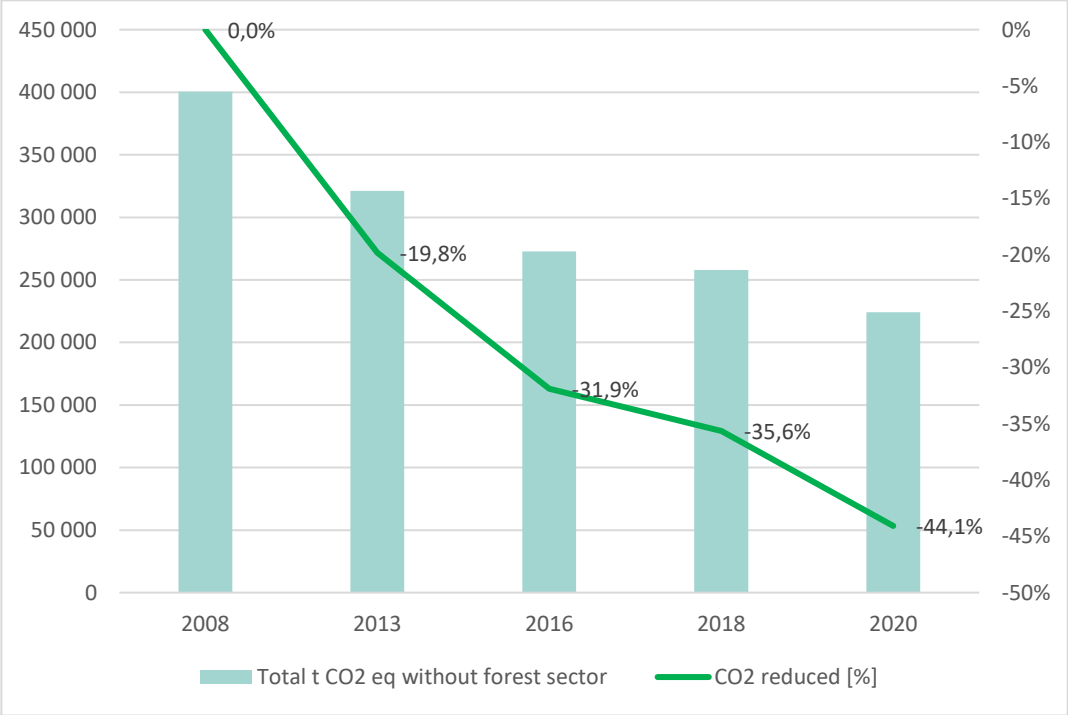


Figure 7: Trend of GHG emissions and percentage reduction for period 2008 – 2020

Data showed that emissions from all sectors in the Municipality of Gabrovo decreased, except for the transport sector.

The most significant percentage reduction in greenhouse gas (GHG) emissions occurred in the buildings and facilities sector. Specifically, emissions from stationary combustion processes decreased by an impressive 48.1%. Additionally, the waste sector saw a substantial reduction of 37.8% in emissions. These positive trends reflect our commitment to sustainable practices and environmental stewardship

In the buildings and facilities sector, industrial facilities and residential buildings are the primary sources of greenhouse gas (GHG) emissions. Meanwhile, in the transport sector, private and commercial transportation significantly contribute to emissions.

Decrease/increase of GHG emissions:

1. Buildings and facilities

- **Municipal buildings, including public lighting**

The reduction in greenhouse gas (GHG) emissions from municipal buildings primarily results from energy efficiency measures and the transition to lower-emission fuels. Specifically: Implementing energy-saving practices in municipal buildings has led to reduced overall energy consumption. By shifting away

from solid and liquid fossil fuels, as well as electricity, and adopting natural gas and biofuels, we've further curbed emissions. Similarly, the decrease in GHG emissions from public lighting can be attributed to a reduction in the emission factor for electricity. These efforts align with our commitment to sustainability and environmental responsibility.

- **Tertiary buildings**

The reduction in greenhouse gas (GHG) emissions from tertiary buildings primarily results from energy efficiency measures and the transition to lower-emission fuels. Specifically: Energy Efficiency Measures: Implementing energy-saving practices in tertiary buildings has led to a decrease in overall energy consumption. Transition to Lower-Emission Fuels: By shifting away from solid and liquid fossil fuels and increasing the use of natural gas and biofuels, we've effectively curbed emissions. These efforts align with our commitment to sustainability and environmental responsibility

- **Residential buildings**

The reduction of GHG emissions in **residential buildings** is mainly due to the energy efficiency measures and transition to using lower emission fuels. A decrease in the total energy used, reduced consumption of solid fossil fuels, and increased consumption of natural gas and biofuels is observed.

The reduction in greenhouse gas (GHG) emissions from residential buildings can be attributed to energy efficiency measures and the transition to lower-emission fuels. Specifically: Implementing energy-saving practices in residential buildings has led to a decrease in overall energy consumption.

By shifting away from solid fossil fuels and increasing the use of natural gas and biofuels, we've effectively curbed emissions.

- **Industrial facilities**

The reduction of greenhouse gas (GHG) emissions in industrial facilities primarily results from energy efficiency measures, modernization, and the transition to lower-emission fuels. As total energy consumption decreases, solid and liquid fossil fuels as well as electricity usage are reduced, while natural gas, LPG, and biofuel consumption increase.

2. Transport

- **Municipal fleet of vehicles**

The rise in greenhouse gas (GHG) emissions from municipal vehicle fleets primarily results from the heightened overall fuel consumption, particularly of diesel fuel.

- **Public Transportation**

The rise in greenhouse gas (GHG) emissions from public transportation primarily results from the heightened overall fuel consumption, particularly of diesel fuel

- **Private and Commercial Transportation**

The reduction in greenhouse gas (GHG) emissions from private and commercial transportation primarily results from the overall decrease in fuel consumption, particularly diesel fuel. Despite a 14.2% increase in diesel fuel consumption, there was a corresponding 33.5% decrease in gasoline consumption.

3. Waste

Gabrovo has taken proactive measures to reduce greenhouse gas emissions by preventing waste formation, promoting changes in public attitudes, and implementing high-quality separate waste collection, reuse, and recycling practices. The initiation of the 'Construction of a Regional Waste

Management System in the Gabrovo Region' represents a significant step toward improving waste management practices and fostering a shift in public perception regarding waste separation.

4. Agricultural, Forestry and Land Use (AFOLU)

The forest sector experienced a significant decline in (carbon) C absorption, with a reduction of 45.9%. The most substantial drop occurred in 2016, reaching -54.2%. Subsequently, forest sector absorption gradually increased, albeit at a slow pace in the subsequent years.

Table A-1.5.1: GHG emissions and percentage change 2018 to 2008 by sectors

	t CO2 eq /year		CO2 eq reduction
	2008	2018	%
TOTAL (without AFOLU)	400 573	257 831	-35.6
Sector: Buildings and facilities	**274 979**	**142 719**	**-48.1**
Municipal buildings, including public lighting	8 601	3 966	-53.9
Tertiary buildings	9 306	4 472	-51.9
Residential buildings	97 988	50 595	-48.4
Industrial facilities	159 084	83 685	-47.4
Sector: Transport	**97 470**	**97 609**	**0.1**
Municipal fleet of vehicles	996	2 611	162.2
Public Transportation	1 820	2 228	22.4
Private and Commercial Transportation	94 654	92 771	-2.0
Sector: Waste	**28 124**	**17 503**	**-37.8**
Sector: Agricultural, Forestry and Land Use (AFOLU)	**-76 007**	**-41 088**	**-45.9**

2.2 Module A-2 Current Policies and Strategies Assessment

A-2.1: Description & assessment of policies

Table A-2.1: List of relevant policies, strategies & regulations

Type	Level	Name& Title	Description	Relevance	Need for action
Policy	EU	European green deal	The European Commission has adopted a set of proposals to make the EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.	The European Green Deal is highly relevant to the implementation of Gabrovo's Climate Change and Carbon (CCC) plan.	By integrating the European Green Deal with Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with EU policies for a sustainable future.
Regulation	EU	EU Directive on Energy Efficiency and Energy Efficiency Act	The Energy Efficiency Directive (EU/27/2012) entered into force on 4 December 2012 and its amendment (EU/2018/2002) on 24 December 2018. The Energy Efficiency Directive lays down energy efficiency targets at the EU and national level, the National energy saving obligation and measures and obligations to promote energy efficiency. As part of the Fit for 55 Package, the Commission submitted its	The EU Directive on Energy Efficiency and the Energy Efficiency Act are highly relevant to Gabrovo's Climate Change and Carbon (CCC) plan. These legislative frameworks aim to improve energy efficiency across the EU, contributing to the overall reduction of greenhouse gas emissions and supporting the transition to a sustainable energy system. The EU Directive on Energy Efficiency sets binding targets for energy savings,	By integrating the EU Directive on Energy Efficiency and the Energy Efficiency Act with Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align

Type	Level	Name& Title	Description	Relevance	Need for action
			proposal on the Energy Efficiency Directive recast on 14 July 2021. The target to reduce energy consumption by 32.5% in the EU will be tightened significantly to 36–39% and the target will become binding. Based on the Commission's formula for 2030 Climate Neutrality Action Plan 19	which align with Gabrovo's goals of reducing energy consumption and emissions, build capacity, and align with EU policies for a sustainable future.	with EU policies for a sustainable future.
Regulation	EU	The Renewable Energy Directive, (RED II; 2018/2001).	The directive provides a comprehensive policy framework that supports the development of renewable energy projects	The Renewable Energy Directive (RED II; 2018/2001) is highly relevant to Gabrovo's Climate Change and Carbon (CCC) plan. This directive aims to promote the use of renewable energy across the EU, setting binding targets and providing a framework for the development of RES This aligns with Gabrovo's goals of increasing renewable energy use and reducing greenhouse gas emissions.	Gabrovo can utilize to enhance its renewable energy infrastructure and implement in its activities relevant to CCC implementation.
Regulation	EU	The Fit for 55 package	The European Climate Law makes reaching the EU's climate goal of reducing EU emissions by at least 55% by 2030 a legal obligation.	The law mandates a 55% reduction in EU emissions by 2030, aligning with Gabrovo's own emission reduction targets and ensuring compliance with EU-wide goals. It provides a structured framework for climate action, helping Gabrovo align its local policies with broader EU strategies.	Gabrovo can enhance its efforts to achieve its climate goals, ensuring a sustainable and resilient future for its citizens.

Type	Level	Name& Title	Description	Relevance	Need for action
				The law facilitates access to EU funding and technical support for projects that contribute to emission reductions, which Gabrovo can leverage for its CCC initiatives.	
Regulation	EU	EU legislation on buildings and construction	The Energy Performance of Buildings Directive EPBD; 2010/31, 2018/44. Construction-related matters such as construction product approvals, the environmental impacts of buildings and the energy efficiency of buildings and construction products. The legislation contains, for example, regulations for urban buildings to utilize solar energy. From 2027, each new government building or private office building larger than 250 square meters must have solar panels.	EU legislation on buildings and construction is highly relevant to Gabrovo's Climate Change and Carbon (CCC) plans. Key directives and regulations include the Energy Performance of Buildings Directive (EPBD), the Energy Efficiency Directive (EED), and the Renewable Energy Directive (RED). These policies aim to improve energy efficiency, promote renewable energy, and decarbonize the building sector.	Implement measures to enhance the energy performance of buildings, such as insulation, energy-efficient windows, and heating systems. Increase the use of renewable energy sources like solar and wind power in building projects. Focus on renovating existing buildings to meet nearly zero-energy standards. Ensure all construction projects comply with EU standards and regulations, including the Euro codes for structural design.

Type	Level	Name& Title	Description	Relevance	Need for action
					Involve local stakeholders, including citizens, industry, and academia, in the planning and implementation process to ensure inclusive and effective measures. Regularly monitor and report on the progress of energy efficiency and renewable energy initiatives to ensure compliance with EU targets.
Plan	EU	RePowerEU	In response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine, the European Commission is implementing its REPowerEU Plan. Launched in May 2022, REPowerEU is helping the EU to save energy, produce clean energy and diversify its energysupplies.	Cities have a significant role in accelerating the energy transition described in the RePowerEU plan. REPowerEU Plan entails additional public and private sector investment by 2027. This plan aligns well with Gabrovo's CCC plan and SECAP, which seeks to	To implement the REPowerEU plan in Gabrovo, several actions are necessary: Investment in Renewable Energy, Energy Efficiency Measures,

Type	Level	Name& Title	Description	Relevance	Need for action
				achieve an 80.5% reduction in greenhouse gas emissions by 2030.	Infrastructure Development. renewable energy and storage capacities is crucial for the successful implementation of these plans. Stakeholder Engaging all levels of society, including citizens, local and national stakeholders, is essential to ensure the inclusivity and effectiveness of the initiatives.
Initiative	EU	New European Bauhaus	The New European Bauhaus is a creative and interdisciplinary initiative that connects the European Green Deal to our living spaces and experiences.	The New European Bauhaus initiative aims to create beautiful, sustainable, and inclusive living spaces, aligning perfectly with the goals of CCC Gabrovo 2030. By integrating this initiative, Gabrovo can foster innovation ecosystems and projects that address both local and global challenges. This approach will help Gabrovo adapt to new national and EU policies, societal changes, and	The CCC Gabrovo 2030 plan, with its Quadruple Helix governance model, can leverage the strengths of government, industry, academia, and civil society to drive these initiatives. This collaborative model

Type	Level	Name& Title	Description	Relevance	Need for action
				evolving framework conditions, ensuring that the municipality remains at the forefront of sustainable development.	will enhance the effectiveness of climate action measures, ensuring they are inclusive, innovative, and beneficial to all stakeholders.
Initiative	EU	New European Innovation Agenda; 100 Intelligent Cities Challenge & Digital Cities Challenge; European Capital of Innovation	The New European Innovation Agenda aims to position Europe at the forefront of deep tech innovation and start-ups. It focuses on addressing societal challenges through new technologies and innovation procurement. Gabrovo is among the 100 cities chosen for the 100 ICC. This initiative supports cities in building ecosystems for smart, green, climate-neutral growth. It emphasizes green industrial transition, new business models, and joint investments in urban solutions	These initiatives offer opportunities for Gabrovo, to enhance innovation, sustainability, and digital transformation; Gabrovo's participation can contribute to its intelligent development, especially in areas like e-government and citizen participation	Gabrovo can benefit by fostering innovation ecosystems, supporting deep-tech start-ups, and participating in regional innovation projects.
Program	EU	Life 2021-2027	The LIFE program plays a significant role in implementing EU legislation, including directives related to habitats and	This program aims to facilitate the shift towards a sustainable, circular, energy-efficient, renewable energy-based, climate-neutral, and resilient	Involve local stakeholders, including government, industry,

Type	Level	Name& Title	Description	Relevance	Need for action
			birds. The proposed new program for the period 2021–2027 is based on the results of the mid-term evaluation of the current program, as well as the impact assessment. The LIFE program is one of the EU's flagship programs, and the Commission proposes the largest proportional increase in its budget, amounting to €5.45 billion between 2021 and 20271.	economy. It focuses on protecting and improving the quality of the environment, including air, water, and soil, as well as addressing biodiversity loss and ecosystem degradation. LIFE provides financial support for projects that align with Gabrovo's goals of reducing greenhouse gas emissions and adapting to climate change. The program encourages the development and implementation of innovative technologies and solutions, which can be integrated into Gabrovo's climate action initiatives. LIFE supports capacity-building activities that can enhance the skills and knowledge of local stakeholders, ensuring effective implementation of climate action measures. The program helps align local actions with EU policies, ensuring that Gabrovo's initiatives are in line with broader European goals.	academia, and civil society, in the planning and development of projects to ensure broad support and collaboration. Build on existing initiatives and frameworks, such as the SECAP and CCC plans, to create synergies and maximize the impact of new projects. Establish robust monitoring and reporting mechanisms to track the progress of funded projects and ensure compliance with LIFE Programme requirements.
Program	EU	The "Environment and Climate Change" program	The "Environment and Climate Change" program aims to improve the environmental status	The program focuses on priority areas such as marine waters, climate,	The program provides financial support for projects that

Type	Level	Name& Title	Description	Relevance	Need for action
			and reduce pollution effects by contributing to the overall goals of the Financial Mechanism of the European Economic Area. The total budget for the program is €15.29 million, with €2.29 million in national funding. The implementation of the "Environment and Climate Change" program is planned to continue until 2024	circular economy, and resource management. It targets municipalities, educational and scientific organizations, the private sector, and civil society. Expected results include guaranteed sustainability in project implementation, favorable collaborations with donor countries' partners, and long-term benefits for the environment. Highly relevant to Gabrovo 2030, particularly in the context of the CCC plan. This program supports projects that aim to mitigate climate change, enhance environmental protection, and promote sustainable development, aligning well with Gabrovo's goals.	contribute to reducing greenhouse gas emissions and adapting to climate change. Encourages the development and implementation of innovative technologies and solutions, which can be integrated into Gabrovo's climate action initiatives. Enhances the skills and knowledge of local stakeholders, ensuring effective implementation of climate action measures. Helps align local actions with EU policies, ensuring that Gabrovo's initiatives are in line with broader European goals.

Type	Level	Name& Title	Description	Relevance	Need for action
Plan	National	National Recovery and Resilience Plan (NRRP)	The "Support for Sustainable Energy Renovation of Residential Building Stock" is part of the National Recovery and Resilience Plan (NRRP).	It aims to improve the environmental status and reduce pollution effects by contributing to energy efficiency measures in multifamily residential buildings. Through this program, up to 80% non-repayable funding is available for energy efficiency enhancements.	Identify and Prioritize Projects: Gabrovo should identify projects that align with the NRRP's objectives and can benefit from its funding. This includes projects focused on energy efficiency, renewable energy, and climate adaptation. Prepare comprehensive project proposals that meet the criteria set by the NRRP, highlighting the expected environmental and climate benefits. Engage Stakeholders: Involve local stakeholders, including government, industry, academia, and civil society, in the

Type	Level	Name& Title	Description	Relevance	Need for action
					planning and development of projects to ensure broad support and collaboration. Build on existing initiatives and frameworks, such as the SECAP and CCC plans, to create synergies and maximize the impact of new projects. Establish robust monitoring and reporting mechanisms to track the progress of funded projects and ensure compliance with NRRP requirements.
Strategy	National	National strategy for adaptation to climate change to 2030	The National Strategy for Climate Change Adaptation and the Action Plan covering the period until 2030 have been approved by the Bulgarian Council of Ministers. The strategy outlines risks related to climate change	Outlines risks related to climate change and vulnerabilities across economic sectors (including agriculture, forestry, biodiversity, water, energy, transport, urban environment, health, tourism, and disaster risk management). It	Ensure that Gabrovo's CCC plan is aligned with the national strategy's objectives and guidelines. Focus on projects that address key

Type	Level	Name& Title	Description	Relevance	Need for action
			and vulnerabilities across economic sectors (including agriculture, forestry, biodiversity, water, energy, transport, urban environment, health, tourism, and disaster risk management). It also addresses intersectional relations, macroeconomic consequences, and institutional contexts. Formulates specific adaptation measures for each sector, along with implementation schedules, required resources, and responsible institutions. The goal is to enhance Bulgaria's capacity for climate change adaptation and prioritize key directions until 2030. The document remains valid until the end of 2030.	emphasizes the need for climate adaptation action at both economy-wide and sectoral levels.	vulnerabilities and leverage national support for adaptation measures. Prepare comprehensive project proposals that meet the criteria set by the national strategy, highlighting the expected benefits for climate resilience. Involve local stakeholders, including government, industry, academia, and civil society, in the planning and implementation process to ensure broad support and collaboration. Apply for funding and technical support from national programs to enhance the implementation of

Type	Level	Name& Title	Description	Relevance	Need for action
					local adaptation projects. Establish robust monitoring and reporting mechanisms to track the progress of adaptation measures and ensure compliance with national guidelines
Plan	Local	Sustainable Energy and Climate Action Plan - SECAP 2022-2030	The Sustainable Energy and Climate Action Plan (SECAP) 2022-2030 is a strategic framework designed to help municipalities achieve their climate and energy goals. It builds on the previous SEAP (Sustainable Energy Action Plan) and incorporates more ambitious targets and measures to address climate change and promote sustainable energy use.	The SECAP set out clear targets for reducing greenhouse gas emissions, increasing energy efficiency, and promoting renewable energy sources. For Gabrovo, it aimed at least a 40% reduction in emissions by 2030 compared to 2008 levels in: buildings, transport, energy supply, and waste management, ensuring a holistic approach to sustainability. SECAP aligns with EU climate and energy policies, ensuring that Gabrovo's actions are consistent with broader European goals and can benefit from EU funding and support. The plan emphasizes the importance of involving all levels of society, including citizens, local businesses,	Gabrovo's CCC plan and SECAP is targeting an 80.5 % reduction in greenhouse gas emissions, including industry, based on SECAP measures. The plan includes both long-term and short-term goals to support decarbonization and climate change adaptation in Gabrovo, with an inclusive investment plan involving citizens, local, and

Type	Level	Name& Title	Description	Relevance	Need for action
				and national stakeholders, to ensure inclusive and effective implementation.	national stakeholders. Establish robust monitoring and reporting mechanisms to track the progress of the SECAP and make adjustments as needed to stay on track with the targets
Programme	Local	Waste management Programme of Gabrovo Municipality 2021-2028	The Waste Management Programme of Gabrovo Municipality 2021-2028 is crucial for the successful implementation of the CCC Gabrovo 2030 plan. This program aims to reduce the harmful impact of waste on the environment and public health by preventing waste generation and promoting efficient resource use. Management Programme with the CCC Gabrovo 2030 plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, and ensure sustainable development.	Relevance to Gabrovo CCC: Alignment with Climate Goals: The waste management program Supports Gabrovo's climate goals by reducing greenhouse gas emissions from waste disposal and promoting recycling and composting.	By focusing on efficient resource use, the program aligns with the CCC plan's objectives of sustainability and circular economy. The program emphasizes public participation, ensuring that citizens are involved in waste management practices, which is essential for the inclusive approach of the CCC plan. Utilize intelligent waste management

Type	Level	Name& Title	Description	Relevance	Need for action
					systems, such as smart bins and data-driven waste collection, to improve efficiency and reduce waste. Increase efforts to promote recycling and composting at the household and community levels, reducing the volume of waste collected. Conduct awareness campaigns to educate citizens about the importance of waste reduction, recycling, and proper waste disposal. Establish robust monitoring and reporting mechanisms to track progress and make necessary adjustments to the waste management strategies.

Type	Level	Name& Title	Description	Relevance	Need for action
Programme	National	Environmental Protection Program 2023-2027	The Environmental Protection Program 2023-2027 aims to enhance Bulgaria's environmental sustainability through several key initiatives. It focuses on modernizing water and sanitation infrastructure to ensure sustainable water management and reduce vulnerability to climate impacts. The program promotes a circular economy by encouraging efficient resource use and sustainable waste management practices. It also emphasizes biodiversity conservation by protecting and restoring ecosystems, which is vital for maintaining natural resilience against climate change. Additionally, the program addresses environmental risks such as floods, landslides, and forest fires, enhancing disaster preparedness. Public engagement and education are also prioritized to increase awareness and participation in environmental protection efforts.	The program allocates significant funds to modernize water and sanitation infrastructure in regions including Gabrovo. This supports Gabrovo's efforts to ensure sustainable water management and reduce circular economy and efficient resource use, the program helps Gabrovo implement sustainable waste management practices. This aligns with the CCC Plan's goals of reducing environmental pollution and enhancing resource efficiency.	The program includes measures to protect and restore ecosystems, which is vital for maintaining Gabrovo's natural resilience against climate change. This supports the CCC Plan's focus on preserving local biodiversity. The program addresses risks such as floods, landslides, and forest fires. Gabrovo can leverage these measures to enhance its climate resilience and disaster preparedness. The program emphasizes public awareness and participation in environmental protection. Engaging the community is

Type	Level	Name& Title	Description	Relevance	Need for action
					essential for the successful implementation of Gabrovo's CCC Plan.
Plan	National	INTEGRATED ENERGY AND CLIMATE PLAN OF THE REPUBLIC OF BULGARIA 2021–2030 (INPEC)	The objectives set out in the INECP are as follows: • promoting low-carbon economic development; • developing a competitive and secure energy sector; • reducing dependence on fuel and energy imports; • ensuring that energy is available at affordable prices to all consumers.	The Integrated Energy and Climate Plan (INPEC) of the Republic of Bulgaria 2021–2030 is highly relevant to Gabrovo's CCC 2030 plan. INPEC aligns with EU binding targets, such as reducing greenhouse gas emissions by at least 40% compared to 1990 levels, increasing energy efficiency by at least 32.5%, and increasing the share of renewable energy to at least 32%. These targets support Gabrovo's goals of reducing emissions and promoting sustainable energy. INPEC emphasizes the integration of climate and energy measures across various sectors, such as energy, transport, and buildings, which is crucial for Gabrovo's holistic approach to climate action.	By integrating the INPEC with Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with EU policies for a sustainable future. Gabrovo should create specific action plans for each sector covered by INPEC such as: Increase investments in renewable energy projects, such as solar and wind power, to meet the targets set by INPEC. Implement energy efficiency measures in

Type	Level	Name& Title	Description	Relevance	Need for action
					buildings and infrastructure, such as retrofitting old buildings and promoting energy-efficient technologies. Develop sustainable transport solutions, including public transportation, cycling infrastructure, and electric vehicle charging stations. Involve local stakeholders, including government, industry, academia, and civil society, in the planning and implementation process to ensure broad support and collaboration.
Plan	Local	Sustainable Urban Mobility Plan – SUMP 2021-2030	SUMP provides a strategic and integrated approach to urban transport, contributing to improved accessibility and	The Sustainable Urban Mobility Plan (SUMP) 2021-2030 is highly relevant to Gabrovo's Climate Change and Carbon (CCC) plan. SUMP aims to	Supports overall target of Gabrovo for 2030 GHG emissions levels and emphasizes

Type	Level	Name& Title	Description	Relevance	Need for action
			quality of life through sustainable mobility solutions.	create a sustainable, efficient, and inclusive urban transport system, which aligns with the goals of reducing greenhouse gas emissions and promoting sustainable development. SUMP provides a strategic and integrated approach to urban transport, contributing to improved accessibility and quality of life through sustainable mobility solutions. Promoting public transport, cycling, walking, and other sustainable transport modes, SUMP helps reduce greenhouse gas emissions, supporting Gabrovo's CCC targets.	the involvement of all relevant stakeholders, including citizens, local businesses, and government agencies, ensuring an inclusive approach to urban mobility.
Strategy	Local	Strategy for smart specialization of Gabrovo Municipality 2021-2030	This strategy focuses on fostering economic transformation through high-tech industries, knowledge-intensive services, and digitalization, which align with the goals of reducing greenhouse gas emissions and promoting sustainable development. The strategy emphasizes the development of sectors such as mechatronics, informatics, ICT, and clean technologies, which are	By integrating the Strategy for Smart Specialization with the CCC Gabrovo 2030 plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with EU policies for a sustainable future.	By promoting innovation and technology transfer, the strategy supports the adoption of advanced technologies that can enhance energy efficiency and reduce emissions. The focus on clean technologies and a

Type	Level	Name& Title	Description	Relevance	Need for action
			crucial for achieving the CCC plan's emission reduction targets. Recycling and waste reduction initiatives.		circular economy aligns with the CCC plan's objectives of sustainability and resource efficiency.
Strategy	Local	Strategy for sustainable development of tourism in Gabrovo Municipality 2021-2027	The Strategy for Sustainable Development of Tourism in Gabrovo Municipality 2021-2027 is highly relevant to the CCC Gabrovo 2030 plan. This strategy aims to promote sustainable tourism practices that align with the municipality's broader goals of reducing greenhouse gas emissions and fostering sustainable development.	The strategy emphasizes sustainable tourism practices, such as eco-friendly accommodations and activities, which contribute to reducing the environmental impact of tourism. By promoting tourism, the strategy supports local economic growth, which can provide funding and resources for other sustainability initiatives under the CCC plan. The strategy involves local communities and stakeholders in tourism development, ensuring that tourism growth is inclusive and benefits all sectors of society. Encourages efficient use of resources, such as water and energy, in tourism facilities, aligning with the CCC plan's objectives of sustainability and resource efficiency.	Develop and promote eco-friendly tourism options, such as nature trails, cultural heritage tours, and sustainable accommodations1. Increase investments in sustainable tourism infrastructure, such as energy-efficient buildings and waste management systems. Involve local communities in tourism planning and development to ensure that tourism growth is inclusive and benefits all sectors of society.

Type	Level	Name& Title	Description	Relevance	Need for action
Strategy	National	Strategy for Sustainable Energy Development of the Republic of Bulgaria until 2030 to 2050.	Outlines general European policies and goals related to energy development and climate change mitigation, while also considering national specifics in energy resources, production, transmission, and distribution. Emphasizes on energy security, efficiency, liberalization of the electricity and gas markets, and integration into the overall European energy market.		Addresses the development and implementation of new energy technologies. The Integrated National Plan for Energy and Climate (INPEC) for Bulgaria until 2030 complements this strategy by
Strategy	National	National Strategy for Disaster Risk Reduction 2018-2030	Outlines a vision for reducing disaster risk in the territory of the Republic of Bulgaria. Developed in accordance with international approaches, it aligns with the Sendai Framework for Disaster Risk Reduction 2015-2030, the Paris Agreement on climate change, and the UN's Sustainable Development Goals.	Aims to enhance preparedness, response capabilities, and post-disaster recovery while adhering to the principle of "building back better." It replaces the previous 2014-2020 strategy.	Promotes activities to adapt to climate change through the CCC Gabrovo 2030 plan.
Programme	National	National Development Programme BULGARIA 2030	This detailed version of the National Development Programme BULGARIA 2030 builds on the vision, goals and priorities for the socio-economic	The programme sets national priorities such as a circular and low-carbon economy, clean air, and biodiversity, which support Gabrovo's goals of reducing greenhouse gas emissions	By integrating the National Development Programme BULGARIA 2030 with

Type	Level	Name& Title	Description	Relevance	Need for action
			development of Bulgaria in the period 2021- 2030, approved by Decision of the Council of Ministers No. 33 of 20.01.2020. The National Development Programme BULGARIA 2030 is a strategic framework document of the highest order in the hierarchy of national programming documents, determining the vision and general goals of the development policies in all sectors of general government, including their territorial dimensions	and promoting sustainable development. It provides a framework for accessing EU and national funding for projects that contribute to these priorities, which Gabrovo can leverage for its CCC initiatives. The programme emphasizes integrated development across various sectors, such as education, science, industry, and transport, ensuring a holistic approach to achieving climate goals. Encourages the adoption of innovative technologies and practices, which can be integrated into Gabrovo's climate action plans. Ensures that Gabrovo's CCC plan is aligned with the national priorities and objectives outlined in the National Development Programme. Focuses on projects that address key areas such as renewable energy, energy efficiency, and sustainable transport, leveraging national support.	Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with EU policies for a sustainable future
Programme	EU	Energy from RS and biofuels - 2021-2030.	The Program to Promote the Use of Energy from Renewable Sources and Biofuels (2021-2030)	By promoting renewable energy and biofuels, the program supports Gabrovo's goal of reducing	By integrating the Program to Promote the Use of Energy

Type	Level	Name& Title	Description	Relevance	Need for action
		Part of the broader EU initiatives to increase the share of renewable energy and biofuels in the energy mix, contributing to the reduction of greenhouse gas emissions and promoting sustainable development.	is highly relevant to Gabrovo's Climate Change and Carbon (CCC) 2030 plan. This program aims to increase the share of renewable energy and biofuels in the energy mix, contributing to the reduction of greenhouse gas emissions and promoting sustainable development.	greenhouse gas emissions, aligning with the CCC plan's targets. Increasing the use of local renewable energy sources and biofuels enhances energy security and reduces dependence on imported fossil fuels. The development of renewable energy projects and biofuel production can stimulate local economic growth, creating jobs and fostering innovation. The program encourages sustainable practices in energy production and consumption, contributing to the overall sustainability goals of Gabrovo.	from Renewable Sources and Biofuels with Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with EU policies for a sustainable future.
Strategy	National	Long-term National Strategy for the Renovation of Residential and Non-Residential Building Stock until 2050	Covers both residential and non-residential buildings. Objective: Aims to transform the national building stock into a highly energy-efficient and decarbonized state by 2050. Measures: Includes comprehensive strategies for energy efficiency, decarbonization, and modernization of all types of buildings.		The strategy will assist with Gabrovo's CCC plan, the municipality can enhance its efforts to achieve its climate goals, foster innovation, build capacity, and align with national and EU policies for a sustainable future.

Type	Level	Name& Title	Description	Relevance	Need for action
Strategy	National	National Programme for Energy Efficiency of Multi-Family Residential Buildings;	Scope: Specifically targets multi-family residential buildings. Objective: Focuses on improving energy efficiency in multi-family residential buildings. Measures: Provides funding and support for energy-saving renovations, such as insulation, window replacement, and heating system upgrades.		The programme is aligned with Gabrovo's 2030 vision, as it aims to improve energy efficiency, reduce energy consumption, and enhance the living conditions in multi-family residential buildings. This aligns with Gabrovo's goals for sustainable development and environmental protection.
Strategy	National	Integrated Transport Strategy until 2030;	The Integrated Transport Strategy for the period until 2030 is a key national document aimed at enhancing Bulgaria's transport sector.	Its relevance to Gabrovo's 2030 CCC Plan can be seen in several areas: Improving Transport Connectivity: The strategy focuses on improving both internal and external transport connectivity. For Gabrovo, this means better integration with national and European transport networks, which can enhance the city's resilience to climate impacts by ensuring efficient movement of goods and people.	Gabrovo's CCC Plan can leverage this by adopting cleaner transport technologies and practices, reducing greenhouse gas emissions, and improving air quality. The strategy emphasizes increasing energy efficiency in the transport sector

Type	Level	Name& Title	Description	Relevance	Need for action
					ensuring that its transport infrastructure is resilient to climate change impacts, such as extreme weather events. Enhancing the safety and security of the transport system is another key objective. This aligns with Gabrovo's goals of creating a safe and sustainable urban environment.
Strategy	National	National Strategy for Development of Scientific Research in Bulgaria for the period 2017—2030	The national strategy promotes scientific research and innovation, which can lead to the development of new technologies and methods for climate adaptation.	Gabrovo can leverage these advancements to improve its local climate resilience measures. The national strategy's policies for effective funding and legislative changes can support Gabrovo's CCC Plan by providing the necessary resources and regulatory framework to implement climate adaptation measures effectively	By focusing on developing human potential in scientific fields, the strategy ensures a skilled workforce that can contribute to Gabrovo's climate initiatives. This includes training and retaining experts who can work on local

Type	Level	Name& Title	Description	Relevance	Need for action
					climate adaptation projects.
Strategy	National	The National Action Plan for Climate Change Adaptation	The National Action Plan for Climate Change Adaptation (NAPCC) is a comprehensive strategy designed to address climate change impacts and enhance ecological sustainability. It includes various missions focusing on areas like energy efficiency, sustainable agriculture, and water conservation.	Gabrovo's CCC Plan aligns with the principles of the NAPCC by focusing on local adaptation measures.	By improving energy efficiency in buildings, promoting sustainable land use, and enhancing water management systems. By integrating these strategies, Gabrovo aims to reduce its vulnerability to climate change and ensure adaptation to change

The Sustainable Energy and Climate Action Plan (SECAP) for Gabrovo Municipality, developed in alignment with the Covenant of Mayors, outlines specific measures to reduce greenhouse gas (GHG) emissions by at least 40% by 2030. Based on an inventory of CO_2 eq emissions from 2008 to 2018, SECAP identifies key areas for action and sets clear reduction targets, timeframes, and responsibilities.

The SECAP builds upon existing GHG reduction efforts while introducing new initiatives, including:

- Restricting the use of high-emission solid fuels and heating appliances.
- Upgrading municipal buildings to achieve maximum energy efficiency, with new constructions meeting nearly zero-energy standards.
- Installing renewable energy systems (RES) in renovated municipal buildings and implementing monitoring mechanisms for RES production and consumption.
- Renovating residential buildings to higher energy efficiency classes (A and B).
- Encouraging efficiency improvements in existing residential and commercial buildings, including the construction of zero-energy and energy-positive structures.
- Piloting projects for zero-energy and energy-positive buildings.
- Transitioning to LED street lighting.
- Enhancing source-separated municipal solid waste (MSW) collection, bio-waste utilization, and underground waste collection.
- Additionally, composting biodegradable waste and using the resulting compost in erosion-prone areas, parks, and gardens.
- Establishing a carbon-neutral industrial zone.

Particular attention is paid to the transport sector, where growth in GHG emissions is reported. It is envisaged: gradual replacement of the public transport fleet with electric and CNG and of the fleet of intra-departmental transport with electric transport; encouraging the use of electric vehicles in private and commercial transport; creation of zones with limited access of cars and expansion of the zones for paid parking and the rules for their use; regulatory framework supporting the construction of charging stations for electric cars, etc.

The SECAP introduces adaptation measures to the CC, with the measures envisaged aimed at:

- Connection with the city center and urban landscaping through separate green wedges, river valleys, eco-trails, bicycle and other tourist routes.
- The long-term tree vegetation in the urban environment, protection and improvement of its condition, compensatory landscaping and development of a list of tree species suitable for landscaping within the municipality of Gabrovo, taking into account the expected future climatic conditions. Exploring the possibility of storing rainwater and using it to irrigate city parks and gardens, as well as to build boreholes for the same purpose.
- Maintaining the conductivity of the riverbeds and creating and maintaining a public flood register on the territory of Gabrovo Municipality.
- Introduction of highly effective fire protection systems in the building stock and facilities.
- Forest areas, abandoned agricultural land, forests and eroded and threatened by erosion areas, protection and improvement of the condition of suburban parks, etc.

***Figure 8* presents the GHG emissions trend and projections by sector from 2008 to 2030.**

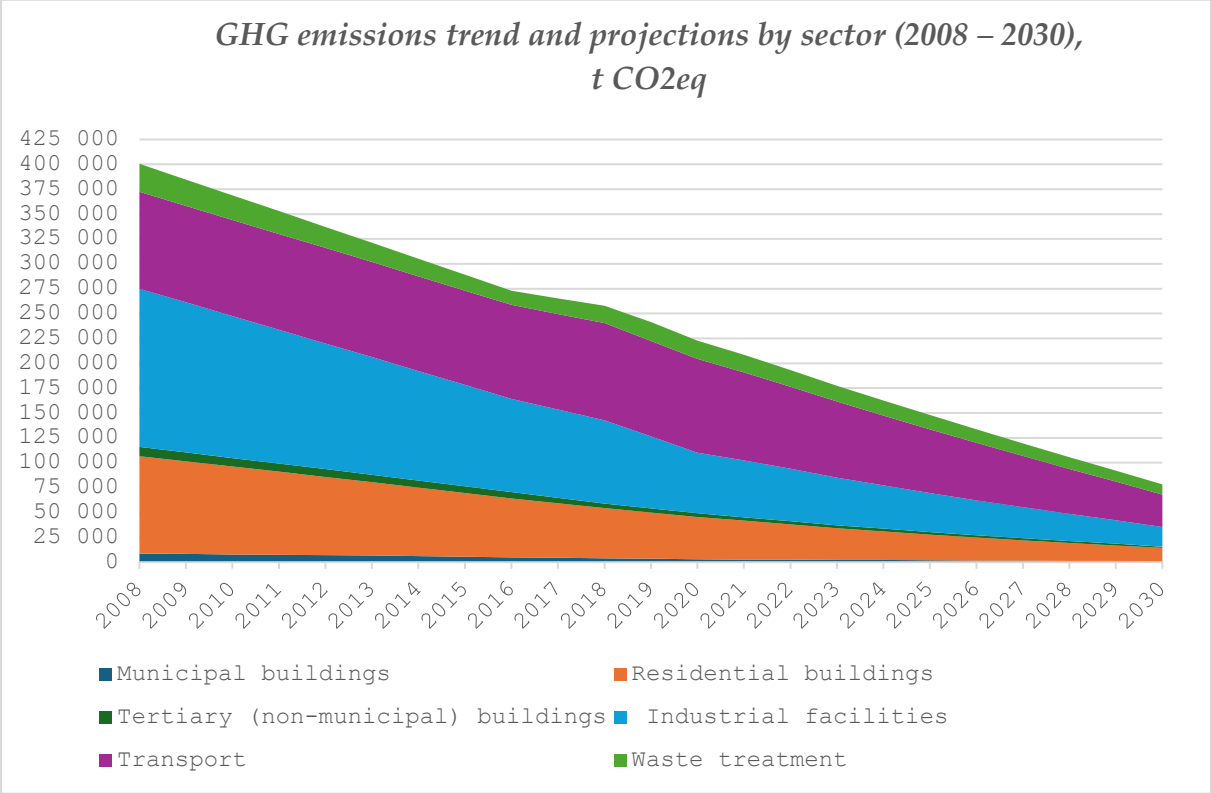


Figure 8 GHG emissions trend and projections by sector (2008 – 2030), t CO2eq

Table A-2.2: City´s emissions gap and residual emissions

	-1	-2		-3		-4		-5	-6	
	Baseline emissions 2008	**Emissions Reduction Target 2030**		**Emissions Reduction Target 2030 through SECAP**		**Emissions Gap (4) = (2) – (3)**		**Emissions reduction through the CCC Action Plan to address the Gap**	**Residual emissions (6) = (1) – (2)**	
	t CO2 eq	t CO2 eq	% reduction to 2008	t CO2 eq	% reduction to 2008	t CO2 eq	%	CO2 eq	t CO2 eq	% of 2008
Buildings and facilities	274 979	239 586	87.1	170 404	62.0	69 182	25.2	69 182	35 393	12.9
Transport	97 470	64 977	66.7	6 823	7.0	58 154	59.7	58 154	32 493	33.3
Waste	28 124	17 717	63.0	17 717	63.0	0	0	0	10 407	37.0
TOTAL (without AFOLU)	400 573	322 280	80.5	194 943	48.7	127 337	31.8	127 337	78 293	19.5

STRATEGY FOR RESIDUAL EMISSIONS

The Residual emissions will be compensated through offsetting, as well as regular reviews of the planned actions and policies to ensure their impact is enhanced. Municipalities can participate in offsetting through: purchasing carbon credits – financing projects for renewable energy, reforestation, waste management, or energy efficiency; developing local projects – investing in green infrastructure projects at the local level, such as reforestation, renewable energy, or energy efficiency programs; partnering with other organizations – collaborating with national or international offsetting programs.

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

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

The 2015 Paris Agreement promotes stronger climate action and has created political pressure for more ambitious climate action worldwide. It emphasizes the importance of parliamentary action in promoting the implementation of the Paris Agreement at all levels of governance. Participatory business models can bring more inclusive, deliberative approaches to the policy-making process and encourage greater citizen participation in the energy transition. Small-scale, community-driven initiatives can make a significant difference in people's lives and contribute to efforts to curb global warming.

This section of Gabrovo AP describes barriers, gaps and opportunities related to the main systems, included in Gabrovo CCC's climate neutrality target.
The main stakeholders of these systems and the links among them are represented in Table A-3.2.
All mitigation and adaptation measures in the domains, included in Gabrovo CCC AP, are influenced and consider the technological/infrastructural, institutional/ regulatory, organisational, financial, political, social and behavioral systems.
To achieve its climate neutrality goal Gabrovo will work collaboratively with all relevant stakeholders to study their needs, to connect the interests and to motivate citizens, the private sector, academia and all relevant institutions in the city of Gabrovo while implementing Gabrovo CCC Action plan for climate neutrality across all sectors, including:

- Energy systems and Built environmen
- Waste & circular economy
- Mobility & Transport
- Green infrastructure & nature-based solutions
- Stakeholder engagement - citizens, research organisations, business.

Developing Gabrovo CCC AP, the collaborative business model was used to bring more inclusive, deliberative approaches to the policy-making process and encourage greater citizen participation in the energy transition. Small-scale, community-driven initiatives have been taken into account, which can make a significant difference in people's lives and contribute to efforts to curb global warming.
For all above mentioned sectors the main barriers, which can be listed based on their influence and level of importance are related to:

- Technology
- Finance and business models
- Governance, policy and regulation
- Capacity and capabilities
- Democracy, social innovation and social change

The green transformation of Gabrovo will happen based on a research work and innovative approach introducing new advanced technologies in all sectors, developed business models and found available funding, developed new regulations and multi-level governance approach, introduced real time data collection tools and systems through smart cities projects and digitalization, fostering innovations through established good collaboration between business and academia in Gabrovo innovation ecosystem, legitimacy of top-down decisions, increased capacity of all local and political stakeholders involved in the process. Those structural barriers are standing in the way of the transformation, where innovations are the most important and needed.

BARRIERS & OPPORTUNITIES DESCRIBED BY SECTORS

Energy systems

Barriers to Energy Systems in Bulgaria:

- **Monopoly Control**: Local energy system is operated by one company, which is a monopolist in providing approvals for installation of PVs and can put some limitations for companies based on the capacity of the grid
- **Knowledge Gaps**: There is a lack of knowledge, skills, and capacity for new RES-based technologies.
- **Restrictive Support Schemes**: National support schemes under the Bulgarian Recovery and Resilience Plan are restrictive, only supporting energy production for personal use with mandatory battery installation.
- **Financial Constraints**: Lack of finance and adapted business models both in public and private sectors.
- **Investment Slowdown**: Investments in energy infrastructure and renewable energy production are hindered by financial insecurities and restrictive regulations.
- **System Overload**: The energy system is operating at its limits due to rapid electrification (e.g., EV charging, local renewable production).
- **Low number of established energy communities in Bulgaria**: Gabrovo hosts the first energy community in Bulgaria. There is a low level of knowledge about the benefits and lack of capacity in local stakeholders.
- **Public-Private Partnership Issues**: Public-private partnerships are not well-recognized or legitimized, hindering the development of decentralized energy communities that could distribute energy to the public grid

Opportunities for energy systems:

- **Electrification is important for reducing emissions in heat production. Electricity can be used to generate heat particularly with heat pumps that utilise waste heat**
- **Establishment of new energy communities based on PPPs**
- **Batteries and heat storages and flexible consumption of electricity and heat will allow for increased non-combustion-based energy production**

Electrification through Heat Pumps

- **Waste Heat Utilization:** Explore the potential of heat pumps that can harness waste heat from industrial processes, data centers, or other sources to provide heating and hot water. This can significantly reduce emissions from traditional combustion-based heating systems.
- **Incentive Programs:** Implement government incentives or subsidies to encourage the adoption of heat pumps, making them more affordable for residents and businesses.
- **Technology Partnerships:** Collaborate with technology providers to develop and deploy innovative heat pump solutions that are tailored to the specific needs and conditions of Gabrovo.

Development of Energy Communities

- **Community Engagement:** Foster active participation from local residents, businesses, and organizations in the creation and management of energy communities.
- **Shared Energy Projects:** Encourage collaborative initiatives such as shared solar installations, energy storage systems, or energy efficiency measures.

- **Community-Based Financing:** Explore financing options that support community-led energy projects, such as crowdfunding or community bonds.

Batteries and heat storages

- **Battery Storage:** Invest in battery storage systems to store excess renewable energy generated during peak production periods, ensuring a reliable and stable energy supply.
- **Heat Storage:** Implement heat storage solutions, such as thermal energy storage tanks, to capture and store excess heat for later use, reducing reliance on peak-time energy consumption.
- **Demand-Side Management:** Promote flexible electricity and heat consumption patterns through smart grids and energy management systems, optimizing the utilization of stored energy.

Built environment

Built environment includes buildings' sector with all permanent and temporary structures, facilities or equipment and public lighting within the city's boundary - residential, commercial, industrial and municipal/public buildings and facilities. The type of impact a municipality has on the energy consumption/GHG emissions of these building types obviously varies, with direct control over municipally-owned buildings/facilities and influence of other building types (i.e., through behavioural campaigns, regulatory measures, financial incentives, etc.).

Barriers to built environment:

- **Private Ownership:** Over 90% of the existing building stock in Gabrovo is privately owned, making large-scale renovations more complex.
- **Knowledge Gap:** A lack of knowledge, skills, and capacity in low-carbon construction, high-energy performance/net-zero energy technologies, and materials hinders progress.
- **Fossil Fuel Dependence:** The reliance on fossil fuels, often due to energy poverty, has led to widespread use of 'point-of-use' fossil fuel heating. Eliminating this practice is crucial for reducing emissions and improving energy efficiency.
- **Central Heating Crisis:** The abrupt closure of the Central Heating company in 2023 without notice created a significant challenge for numerous families in Gabrovo. The municipality is responsible for addressing the resulting fallout.
- **Outdated Buildings:** Many buildings in Gabrovo were constructed before 1990 and have not undergone necessary energy or technical audits.

- **Financial Barriers:** Limited access to funding and a lack of adequate financing are significant obstacles.
- **Municipal Capacity:** The Gabrovo Municipality faces limitations in its ability to oversee the complete retrofitting process for multi-family buildings.
- **Policy Deficiencies:** Existing state policies, governance frameworks, and regulations for building renovation are insufficient to address the sector's specific needs.
- **Geopolitical and Political Challenges:** The timing of investments is hindered by various geopolitical factors, as well as the prolonged political instability in Bulgaria. The absence of a stable government, coupled with municipalities' reliance on centralized state budgets, creates significant challenges for implementing sustainable building renovation initiatives.

Opportunities to built environment:

- **Capacity Building:** Enhance the capabilities of stakeholders involved in building renovation.
- **Technical Assistance:** Provide households with expert guidance on energy audits and business modeling.

- **Innovative Solutions:** Promote the adoption of low-carbon construction techniques and emerging technologies.
- **Building Efficiency:** Improve the thermal performance of building envelopes and technical building services.
- **Energy Management:** Optimize energy management practices within buildings.
- **Sustainable Materials:** Encourage the use of new building materials developed based on circular economy principles, such as component reuse and nature-based **Energy Transition:**
- **Renewable Energy Integration:** Promote the decarbonization of the energy supply by integrating renewable energy sources into individual buildings, groups of buildings, or neighborhood-level systems. This could include solar panels, wind turbines, or geothermal heat pumps.
- **Energy Efficiency:** Implement measures to improve the energy efficiency of buildings, such as upgrading insulation, optimizing heating and cooling systems, and installing smart energy management technologies.
- **Policy and Governance:**
- **One-Stop Shop:** continue the reliance on the established centralized platform that provides comprehensive information, guidance, and support for building owners and contractors seeking low-carbon and smart building solutions.
- **Funding Access:** Facilitate the application process for funding provided by the Bulgarian Recovery and Resilience Plan and other relevant programs.
- **Governance Reform:** Develop new cross-sectoral governance models to streamline the building renovation process and ensure effective coordination between government agencies, municipalities, and private sector stakeholders.
- **Tax Incentives:** Provide tax breaks or reductions for property owners who invest in the construction of passive or near-zero energy buildings.
- **Financial Support:** Explore the provision of loans, grants, or subsidies to help building owners finance renovation projects.
- **Partnerships:**
- **ESCOs and EPCs:** Leverage Energy Services Companies (ESCOs) and Energy Performance Contracting (EPC) models to provide comprehensive energy efficiency solutions and manage energy-related services.
- **Public-Private Partnerships:** Foster partnerships between government agencies, municipalities, and private sector companies to leverage their expertise and resources to accelerate building renovation efforts.
- **Community Engagement:** Involve local communities in the planning and implementation of building renovation projects to ensure that their needs and preferences are taken into account.
- **Skill Development:** Invest in training and education programs to develop the necessary skills and expertise in low-carbon construction, energy efficiency, and renewable energy technologies.
- **Research and Innovation:** Support research and development efforts to develop new and innovative building materials, technologies, and solutions.

Mobility and transport

Mobility and transport sector includes all mobility-related activity within the city of Gabrovo and in accordance with Gabrovo SUMP 2030. The present Gabrovo CCC AP includes measures and activities aiming to create a sustainable urban mobility and to foster electrification of public and private transport. The vast majority of emissions from this sector are typically from on-road transport. This sector covers all transport typologies from private transportation (including commercial) to public services. The city is responsible for all traffic regulation and transport infrastructure within the city boundary, exerting a critical influence in transport management.

Barriers to Sustainable Mobility in Gabrovo

Behavioral Change:

- **Modal Split:** Shifting from private car use to active transport modes (walking, cycling) or public transport requires significant behavioral changes, which can be difficult and slow to achieve.

Environmental Factors:

- **Winter Conditions:** Cold and snowy winters can limit the use of active transport modes, making it challenging to promote sustainable mobility year-round.

Infrastructure Constraints:

- **Charging Infrastructure:** The lack of well-developed charging infrastructure for electric vehicles can hinder the transition to e-mobility.
- **Urban Layout:** Gabrovo's long and narrow layout, with transport infrastructure concentrated along the Yantra River, limits the potential for expanding road infrastructure and integrating biking lanes.

Policy and Funding Challenges:

- **Public Transport Investment:** Implementing sustainable mobility and increasing public transport use requires significant investments, which may be limited by available funding.
- **Electrification:** Electrifying public transport also necessitates investments, and existing funding may not be sufficient to cover the costs.
- **Lack of Incentives:** The absence of national and local incentives to purchase electric cars can discourage their adoption.
- **Resistance to Restrictions:** Reducing the number of cars in the city center may face resistance from residents who value the convenience of private car use and may be reluctant to accept measures that restrict their mobility or lower speed limits.

- **Traffic Congestion:** Gabrovo may experience traffic congestion during peak hours, particularly in the city center. This can discourage public transport use and contribute to air pollution.
- **Accessibility:** Ensuring that public transport and active transport options are accessible to all residents, including those with disabilities, is essential for promoting sustainable mobility.
- **Public Awareness:** Raising public awareness about the benefits of sustainable mobility and the negative impacts of excessive car use is crucial for fostering behavioral change.

Opportunities for Sustainable Mobility in Gabrovo

Infrastructure Development:

- **Active Transport Infrastructure:** Invest in safe and accessible infrastructure for walking, cycling, and public transport, including sidewalks, bike lanes, bus lanes, and pedestrian crossings.
- **Public Transport Expansion:** Expand public transport services, increase route frequency, and improve the quality of service to make it a more attractive alternative to private car use.

Prioritization of Sustainable Transport:

- **Traffic Management:** Prioritize sustainable transport modes in traffic management plans, such as giving priority to buses and cyclists at intersections and allocating road space for active transport.

- **Urban Planning:** Integrate sustainable mobility principles into urban planning and development, ensuring that new developments are well-connected to public transport and pedestrian and cycling networks.

Public Health and Well-being:

- **Active Living:** Promote active mobility as a way to increase physical health and well-being. Create a developed urban environment that encourages people to walk, cycle, and use public transport.
- **Healthy Communities:** Invest in public spaces and amenities that support active lifestyles, such as parks, recreational facilities, and walking and cycling trails.

- **Economic Benefits:** Promoting sustainable mobility can generate economic benefits by reducing traffic congestion, improving air quality, and creating jobs in the transportation sector.
- **Environmental Benefits:** Sustainable mobility can help reduce greenhouse gas emissions and improve air quality, contributing to a healthier and more sustainable environment.
- **Social Equity:** Prioritizing sustainable transport can help address social equity issues by providing access to transportation for all residents, regardless of income or ability level.

Waste & circular economy

Barriers to Circular Economy Implementation in Gabrovo

Knowledge and Capacity:

- **Limited Expertise:** A lack of knowledge and capacity in circular economy principles, technologies, and practices hinders progress.
- **Research Gap:** Insufficient research and expertise in new advanced innovative technologies and solutions for waste management and resource recovery limit the development of effective circular economy strategies.

Financial Constraints:

- **Underfunded R&D:** Limited funding for research and development hampers innovation and the development of new circular economy technologies.
- **Investment Challenges:** The high upfront costs of implementing large-scale waste management and waste disposal projects can be a significant barrier.

Policy and Regulatory Framework:

- **Outdated Regulations:** The existing national regulatory framework may not adequately address the requirements of a circular economy, hindering its implementation.

Social and Cultural Factors:

- **Lack of Waste Separation Culture:** The community may not have a strong culture of waste separation, making it difficult to collect and recycle materials effectively.
- **Traditional Mindsets:** Traditional companies may not be familiar with circular economy models and opportunities, hindering their adoption of sustainable practices.

Economic Challenges:

- **Investment and Operational Costs:** The initial investment and ongoing operational costs associated with implementing circular economy solutions can slow down their development and implementation.
- **SME Consolidation:** The lack of consolidation among small and medium-sized enterprises (SMEs) in the circular economy sector can limit their ability to scale up and compete effectively.

Specific Challenges in Gabrovo:

- **Regional Context:** Gabrovo's specific geographical location, economic structure, and demographic characteristics may present unique challenges and opportunities for implementing a circular economy.
- **Local Resources:** The availability of local resources, such as waste streams, infrastructure, and skilled labor, can influence the feasibility and scalability of circular economy projects.
- **Community Engagement:** Engaging the local community in the transition to a circular economy is essential, but may require overcoming cultural barriers and building trust.

Policy and Regulatory Challenges:

- **Slow Policy Adaptation:** The pace of legislative and policy changes may not keep up with technological innovations, creating barriers to scaling circular economy solutions to the market.

Social and Cultural Factors:

- **Public Awareness and Attitudes:** A lack of knowledge and negative attitudes among citizens can hinder public acceptance and support for circular economy initiatives.

Opportunities for Circular Economy Implementation in Gabrovo

- **Innovation Valley:** The establishment of an innovation valley focused on circular economy, centered in Gabrovo, presents a significant opportunity for fostering innovation, research, and development in this field. The collaboration between Gabrovo Municipality, Gabrovo Technical University, Regional Innovation Center "Ambitious Gabrovo," and the Ministry of Innovations and Growth demonstrates a strong commitment to driving circular economy initiatives.

Quality of Life Improvements:

- **Improved Living Conditions:** Implementing a circular economy can enhance the quality of life by reducing waste, pollution, and resource depletion. It can also create a more sustainable and resilient community.

Capacity Building:

- **SME and Community Empowerment:** Providing training, workshops, and campaigns to increase the capacity of SMEs and the community in re-use, waste reduction, and zero-waste concepts can foster a more circular mindset and drive practical actions.

Waste Management Solutions:

- **Innovative Disposal Methods:** Implementing new and innovative solutions for waste disposal can improve efficiency, reduce environmental impact, and potentially generate valuable resources.

Community Engagement:

- **Waste Separation Culture:** Proactively working with households in different districts to build a new culture of waste separation can significantly improve recycling rates and reduce the amount of waste sent to landfills.

Policy and Regulatory Incentives:

- **Local Tax Incentives:** Introducing new tax incentives for citizens and companies in local regulations can encourage the adoption of circular economy practices and create a more favorable business environment.

Additional Opportunities:

- **Public-Private Partnerships:** Fostering partnerships between government agencies, municipalities, businesses, and academic institutions can leverage their expertise and resources to accelerate the transition to a circular economy.
- **International Cooperation:** Collaborating with other cities and regions with similar challenges and goals can facilitate knowledge sharing, best practices exchange, and joint projects.
- **Research and Development:** Supporting research and development initiatives focused on circular economy technologies and solutions can help drive innovation and competitiveness.

Green infrastructure & nature-based solutions

Barriers:

Infrastructure Vulnerability:

- **Extreme Weather Events:** Climate change is increasing the frequency and intensity of heavy rainfall, long dry periods, thunderstorms, and forest fires, putting existing infrastructure at risk.

Knowledge and Capacity Gaps:

- **Limited Expertise:** A lack of expertise and capacity in developing and implementing new innovative technologies and nature-based solutions for climate change adaptation hinders progress.
- **Underfunded R&D:** Insufficient investment in research and development (R&D) for green and blue infrastructure limits the availability of effective solutions.

Financial Constraints:

- **Funding Shortages:** Limited funding can hinder the implementation of climate change adaptation measures, particularly those requiring significant investments.

Cultural and Behavioral Factors:

- **Low Adaptation Culture:** A low level of cultural awareness and preparedness for climate change can hinder the adoption of adaptation measures.

- **Irrigation Costs:** The high costs of irrigating green areas using city water can be a financial burden, limiting the ability to maintain and expand green spaces.

- **Regional Specificities:** Gabrovo's unique geographical location, topography, and climate may present specific challenges and vulnerabilities to climate change.

- **Social Equity:** Climate change impacts can disproportionately affect vulnerable populations, such as low-income communities and marginalized groups. Addressing these equity concerns is essential for effective adaptation.
- **Long-Term Planning:** Climate change adaptation requires long-term planning and investment to address the cumulative effects of climate change and ensure the resilience of the community.

Opportunities to green infrastructure and NBS:

Strategic Planning:

- **Green Infrastructure Strategy:** Develop a comprehensive Green Infrastructure (GI) Strategy up to 2030 to guide the planning, implementation, and maintenance of green infrastructure assets.

Data-Driven Decision Making:

- **Data Collection Platform:** Establish a data collection platform to monitor climate change indicators, assess the vulnerability of infrastructure and natural systems, and track the effectiveness of adaptation measures.

Water Management:

- **Early Warning Systems (EWS):** Implement Early Warning Systems (EWS) to provide timely alerts for extreme weather events, such as heavy rainfall, floods, and heatwaves.
- **Rainwater Harvesting:** Develop rainwater harvesting systems for green areas to ensure a sustainable and resilient water supply for irrigation.

Research and Innovation:

- **Researcher and Engineer Involvement:** Engage researchers and engineers in climate change adaptation projects to develop innovative solutions and leverage their expertise.
- **Nature-Based Solutions:** Promote the development and implementation of nature-based solutions for biodiversity conservation, climate mitigation, and adaptation. This can include green roofs, green walls, urban forests, and ecological restoration projects.

- **Community Engagement:** Involve local communities in the planning and implementation of climate change adaptation measures to build awareness, foster ownership, and ensure that their needs and priorities are addressed.
- **Public-Private Partnerships:** Foster partnerships between government agencies, municipalities, businesses, and academic institutions to leverage their resources and expertise for climate change adaptation.
- **International Cooperation:** Collaborate with other cities and regions facing similar climate challenges to share knowledge, best practices, and resources.

Citizen Engagement and Social Innovation

Barriers to Citizen Engagement and Social Innovation in Gabrovo

Social Inclusion:

- **Vulnerable Groups:** Engaging passive citizens and including vulnerable groups in decision-making processes can be challenging, requiring targeted efforts and tailored approaches.

Social Innovation Culture:

- **Limited Culture:** A low level of social innovation culture and limited understanding of its potential benefits hinders its adoption and implementation.

Civic Engagement:

- **Inactive Civic Society:** A less active civic society limits the capacity for bottom-up initiatives and citizen-led projects.

Demographic Challenges:

- **Aging Population:** A decreasing population with a high percentage of elderly people impacts the availability of human resources and limit the capacity for active civic engagement.

Resource Constraints:

- **Time and Resources:** Facilitating social innovation requires time, resources, and dedicated staff within the municipality.
- **Funding Shortages:** Limited funding can constrain the ability to support social innovation initiatives and provide necessary resources.

Citizen Engagement Challenges:

- **Limited Resources and Capacities:** Municipality needs to arrange additional resources and capacities to effectively engage citizens and support their participation in decision-making.
- **Passive Citizenship:** A culture of passive citizenship, where citizens are not accustomed to actively influencing policies and projects, hinders meaningful engagement.
- **Data Limitations:** Data collected through surveys and other traditional methods may not be sufficient to inform policy-making processes effectively, limiting the impact of citizen engagement.

- **Trust and Transparency:** Building trust between citizens and government institutions is essential for fostering effective engagement and collaboration.
- **Accessibility:** Ensuring that engagement opportunities are accessible to all citizens, regardless of age, disability, or socioeconomic status, is crucial for inclusive participation.

Capacity Building:

- **Citizen Engagement Training:** Invest in training programs to build the capacity of citizens, community organizations, and public officials in effective citizen engagement techniques.
- **Partnerships:** Establish new partnerships with local organizations, businesses, and academic institutions to strengthen the network of stakeholders involved in social innovation and citizen engagement.

Digital Engagement:

- **Online Platforms:** Utilize digital platforms, such as social media, online forums, and interactive websites, to reach a wider audience and gather input from citizens who may not attend in-person events.

- **Online Surveys and Consultations:** Conduct online surveys and consultations to collect citizen feedback on a range of issues, including climate change, social innovation, and community development.

Community Outreach:

- **Transition Team:** The established transition team will actively work to foster trust and community in Gabrovo through diligent efforts and dedication. By raising awareness of climate change issues and engaging with partners and stakeholders, the team aims to create a more informed and engaged community
- **Targeted Events:** Organize special climate events and workshops tailored to vulnerable groups to ensure their voices are heard and their needs are addressed.

Additional Opportunities:

- **Youth Engagement:** Foster youth engagement in social innovation and climate action through educational programs, competitions, and mentorship opportunities.
- **Social Innovation Grants:** Provide grants or funding to support citizen-led social innovation projects that address community needs and contribute to sustainable development.
- **Community-Based Budgeting:** Implement community-based budgeting processes to allocate resources based on citizen priorities and empower communities to shape their own development.

GOVERNANCE

Barriers to governance in Gabrovo

Interdepartmental Coordination:

- **Silo Mentality:** The lack of cooperation and collaboration among directorates and departments within the administration can hinder effective climate action.

Policy Gaps and Coordination:

- **Misalignment:** National and local governments may experience gaps in policy-making and coordination, leading to inconsistencies and inefficiencies in climate change policies.

Regulatory Challenges:

- **Outdated Regulations:** Some regulations may need to be revised to incorporate new technologies and standards, ensuring that they align with current climate goals.

Resource Constraints:

- **Time and Capacity:** City employees may face limitations in time and resources, hindering their ability to change and develop existing processes to better integrate climate and sustainability considerations.

Bureaucratic Challenges:

- **Heavy Bureaucracy:** Excessive bureaucracy and limiting regulations can create obstacles for implementing climate action initiatives.

Resistance to Change:

- **Negative Attitudes:** Resistance to change and negative attitudes towards climate action can hinder progress and create challenges for implementing sustainable solutions.

- **Political Will:** Strong political will and commitment from both national and local governments are essential for driving effective climate action.
- **Public Awareness:** Raising public awareness about climate change and its impacts is crucial for building support and fostering a sense of urgency.
- **Stakeholder Engagement:** Engaging a wide range of stakeholders, including businesses, NGOs, and community groups, can help identify and address barriers to climate action.

Opportunities for governance in Gabrovo

Collaborative Governance:

- **Stakeholder Partnerships:** Foster collaborative governance and working methods between the city, companies, organizations, research institutions, universities, and citizens to achieve shared climate goals.
- **Shared Vision:** Develop a shared vision and mission for climate action that unites stakeholders and creates a sense of common purpose.

Effective Communication:

- **Highlight Co-Benefits:** Communicate the co-benefits of climate action, emphasizing the positive impacts on health, economic development, and quality of life.
- **Inclusive Strategies:** Develop strategies that leave no one behind, ensuring that climate action benefits all segments of the community, including vulnerable populations.

Additional Opportunities:

- **Knowledge Sharing:** Facilitate knowledge sharing and capacity building among stakeholders to enhance their understanding of climate change and its impacts.
- **Innovation and Technology:** Encourage innovation and the adoption of new technologies to address climate challenges and improve efficiency.
- **Monitoring and Evaluation:** Implement robust monitoring and evaluation systems to track progress, identify challenges, and adapt strategies as needed.
- **International Cooperation:** Collaborate with other cities and regions facing similar climate challenges to share best practices, learn from each other's experiences, and leverage international resources.
- **Citizen Engagement:** Foster active citizen engagement and participation in climate action initiatives to build ownership and support.

GABROVO'S STAKEHOLDER ECOSYSTEM

Gabrovo's Climate city contract is strategically planned to be implemented under the leadership of the city administration, which actively engages a wide range of stakeholders at various governance levels. This includes local government, businesses, academia, and civil society. By fostering a collaborative approach, the city ensures that diverse perspectives and expertise are integrated into decision-making, enhancing the effectiveness and inclusivity of climate actions. Through this inclusive and adaptive approach, Gabrovo is well-positioned to achieve its climate neutrality goals and serve as a model for other cities. The co-creation process of the CCC involves active participation from all relevant stakeholders. This engagement ensures that the diverse perspectives and expertise of local government, businesses, and academia, civil society, national bodies, NGO's and citizens are integrated into the CCC. By involving stakeholders in the planning and execution phases, Gabrovo enhances the relevance and acceptance of its climate policies.

On the next page Table A-3.2 presents the main stakeholders by their level of influence and interest.

Table A-3.2: Systems & stakeholder mapping

System description	Stakeholder	Influence	Interest
Energy systems & Built environment	Eneffect Consult SLTD, Sofia	**High level of influence** Consultancy as energy auditors Training and development of new technical solutions Project design	**High level of interest** Conducting detailed energy audits to identify areas where energy efficiency can be improved. Offering expert advice on implementing energy-efficient practices and technologies. Providing training programs for specialists in energy efficiency, focusing on Nearly Zero Energy Buildings and Passive House standards. Assisting in the design and implementation of projects aimed at reducing energy consumption and promoting sustainable practices. Supporting local authorities in developing and implementing sustainable energy policies.
Energy systems& Built environement Mobility & transport	Energopro Gabrovo - electricity supplier	**High level of influence** Member of Gabrovo Council for sustainable urban development Technical support and investment in energy grid and smart grid solutions development Provides permissions for PVs installations	**Medium level of interest** Energy Efficiency Programs - can implement and promote energy efficiency programs that reduce overall energy consumption and carbon emissions Smart Grid Technology: Utilizing smart grid technology to optimize energy distribution and reduce waste, ensuring more efficient use of resources.
Energy systems& Built environment	The first Energy community in Gabrovo	**High level of influence** « Know how partner » Capacity building Policy support	**High level of interest** They are already working on a pilot project to construct a 100kWh solar park. This initiative can serve as a model for other renewable energy projects, helping to reduce carbon emissions. Community Engagement: Engaging local residents

			and businesses in energy projects can raise awareness and promote sustainable practices Innovative Approaches: The community's focus on innovative approaches to clean energy can provide valuable insights and strategies for the CCC. Collaborations to implement policies and projects aimed at reducing carbon emissions and promoting renewable energy.
Energy systems&Built environment, Waste&Circular economy	Ministry of Economy and Industry	**High level of influence** Provide funding opportunities for industry for energy efficiency and circular economy Policy developer in the field of energy efficiency in companies, e-mobility and circular economy	**High level of interest** Crafting and implementing economic policies that promote sustainable practices and green technologies. Incentives for Green Businesses: Providing tax breaks and subsidies for businesses
Energy systems&Built environment	Ministry of Energy	**High level of influence** One of the most important Bulgarian Ministry in regard to policy making in the field of energy efficiency Provide funding for energy sollutions implementation in Energy systems&Built environment	**High level of interest** Investing in and promoting the development of renewable energy sources such as solar, wind, and hydroelectric power Implementing programs to improve energy efficiency in industries, buildings, and transportation Upgrading the energy grid to support the integration of renewable energy and improve overall efficiency
Energy systems, Built environment, Mobility&transport, Waste & circular economy, Green infrastructure & nature-base solutions	Ministry of Finance	**High level of influence** Manages the State budget and provide funding for the actions in Gabrovo CCC Policy and regulation developer	**High level of influence** Allocating funds for climate change mitigation and adaptation projects. Issuing green bonds to raise capital for environmental projects Working with international financial institutions to secure funding and support for climate initiatives.

Energy systems, Built environment, Mobility& transport, Waste & circular economy, Green infrastructure & nature-base solutions	Ministry of Innovations & growth	**High level of influence** Managing Authority of Bulgarian recovery and Resilience Plan providing funding to industry for PVs and modernization of production facilities Manages the national program Competitiveness Policy developer Provide Capacity building to companies	**High level of interest** Providing financial support for innovative projects focused on climate change mitigation and adaptation. This can include grants for research and development of new technologies. Establishing innovation hubs and incubators on green technologies and sustainable practices. Facilitating partnerships between the government, private sector, and academic institutions to drive innovation in climate solutions. Crafting policies that encourage innovation in renewable energy, energy efficiency, and other sustainable practices Offering programs to educate and train individuals and businesses on the latest innovations in climate technology and sustainable practices.
Energy systems & Built environment	City gas Utility company	**High level of influence** Member of Gabrovo Council for sustainable urban development Provides technical support Change driver Invest in Gabrovo gaz system	**High level of interest** City gas promote that can be derived from renewable sources like biogas, which is produced from the decomposition of organic matter. Using biogas can reduce GHG emissions compared to fossil fuels.
Energy systems& Built environment, Waste & circular economy	MBAL Tota Venkova Benefitiary	**High level of influence** Final benefeciary of energy efficiency projects funded by Bulgarian Resilience and Recovery Plan and other programs for renovation of the municipal hospital	**Medium to high level of interest** Implementing energy-efficient practices within the hospital, such as upgrading to LED lighting, optimizing heating and cooling systems, and using energy-efficient medical equipment.

			Installing renewable energy sources like solar panels on hospital buildings to reduce reliance on non-renewable energy. Adopting sustainable waste management practices, including recycling medical waste and reducing single-use plastics. Promoting public health campaigns that emphasize the health impacts of climate change and the importance of sustainable living. Conducting research on the health effects of climate change and educating staff and patients about sustainable practices and their benefits.
Energy systems& Built environment Mobility & Transport Waste & circular economy Green infrastructure& Nature base solution	District Information Center – Gabrovo	**High level influence** Comunicator in Gabrovo Transition Team One stop shop for Energy effieincy Provides technical support and information to business and citizens Information dissemenation Organizes trainings and capacity building Policy development and implementation support	**High level of interest** Providing residents and businesses with information on climate change initiatives, energy-saving tips, and available resources for adopting sustainable practices. Acting as a central hub for coordinating local climate action projects, including renewable energy installations and energy efficiency programs. Organizing workshops, seminars, and events to educate the community about climate change and the importance of sustainable living. Offering support services such as assistance with grant applications for green projects, and connecting individuals and businesses with relevant government programs and incentives. Gathering feedback from the community on climate initiatives and reporting back to the CCC to help refine and improve strategies.
Energy systems, Built environment, Mobility& transport, Waste & circular economy, Green infrastructure & nature-base solutions	Media - Local media, social media, online platforms	**High level of influence** Communication partner Capacity building Community engagement	**High level of interest** Educational Content: Community Stories Public Forums Interactive Campaigns Online Communities. Live Events Online Platforms

			Develop websites and apps that provide access to resources, tutorials, and tools for enhancing climate knowledge s. Offer platforms that facilitate collaboration
Waste &circular economy Mobility & transport Green infrastructure & nature base solutions	Regional directorate of education – Gabrovo Partner	**High level of influence** Educational support Citizens engagement Policy facilitator	**Medium level of interest** Educational programs Schools' engagement Information and campaigns Facilitate the process of policy & standards implemenataion on local level
Energy systems & Built environment Mobility& transport Waste&circular economy Green infrastructure & naturebase solutions	Regional Innovation Center "Ambitious Gabrovo Partner	**High level of influence** Member of Gabrovo Council for sustainable development Fosters advanced innovative technologies development and implementation in all sectors in Gabrovo CCC Provides technical support for smart city solutions Invests in education and capacity building Stakeholders' engagement Talent incubation	**High level of interest** Promoting the development and adoption of innovative technologies that reduce carbon emissions and enhance energy efficiency. Supporting research and development in areas such as renewable energy, smart grids, and energy storage solutions. Creating programs to nurture and support local talent in the fields of green technology and sustainable practices. Providing training and resources to help individuals and businesses develop skills needed for the green economy. Circular Economy Initiatives: Encouraging the implementation of circular economy practices, such as recycling, reusing, and reducing waste. Supporting projects that focus on sustainable materials and technologies. Facilitating partnerships between local businesses, academic institutions, and government bodies to drive climate action. Organizing workshops, seminars, and events to share knowledge and best practices related to climate resilience and sustainability

			Supporting the development of smart city solutions
Energy systems Built environment Mobility& transport Waste&circular economy Green infrastructure&naturebase solutions	Gabrovo District Government	**High level of influence** Develops the regional policy and is a member of Gabrovo Council for sustainable urban development Participates in the monitoring process of Gabrovo CCC	**High level of interest** Implementing specialized programs in schools and universities to foster CCC skills among students. Encouraging community-based projects that require creative problem-solving, critical thinking, and collaboration. Collaborating with local businesses and organizations to create opportunities for students to apply CCC skills in real-world settings.
Energy systems Built environment Waste & circular economy	Associations of owners in multifamily buildings	**High level of influence** Provide cofunding for residential retrofitting Initiate new energy efficiency projects Participate in separation of waste campaigns Capacity building Project collaboration Public –private partnerships	**High level of interest** Participate in Community Workshops, seminars that focus on developing creative problem-solving, critical thinking, and collaboration among residents. Encourage residents to participate in community projects that require teamwork and innovative solutions, such as community gardens or sustainability initiatives. Create platforms for residents to share resources, ideas, and skills, fostering a collaborative environment. Participate in community events
Energy systems Built environment Mobility& transport Waste&circular economy Green infrastructure & naturebase solutions	Chamber of Engineers in the investment design	**High level of influence** Technical support and advising Member of Gabrovo Council for sustainable urban development Capacity building Community engagement	**High level of interest** Organize events focused on innovative engineering solutions and critical problem-solving. Encourage joint projects that require teamwork and creative thinking, such as community infrastructure improvements. Establish mentorship opportunities where experienced engineers guide young professionals

			in developing climate related skills.
Energy systems Built environment Mobility& transport Waste&circular economy Green infrastructure & naturebase solutions	Chamber of architects	**High level of influence** Member of Gabrovo Council for sustainable urban development Technical support Advisory function Community engagement Policy makers	**High level of interest** Host competitions that challenge architects to come up with creative and sustainable designs. Help create spaces where architects can work together on projects, fostering a collaborative environment. Policy development, facilitation and implementation
Energy systems & built environment Waste & circular economy	Regional Waste Depot for Non-Hazardous Waste – Gabrovo Partner and transition team member	**High level of influence** Technical support Community engagement Monitoring & data analisys Policing the law Information provider Change driver – Reuse, reduce and recycle	**High level of interest** Facilitate separation of waste Providing advice, educational and other knowledge sharing and training Compost producer Important facilitator for policy on health and safety Educational programs
Energy Systems & Built environment Mobility &Transport Waste & circular economy	Regional Ministry of Interior – Police & Fire department	**High level of influence** Safety & security support Disaster prevention Provides data for invetories of SECAP and CCC Educational support Community engagement Law enforcement Public awareness	**Medium level of interest** Ensuring the safety and security of climate-related infrastructure and projects. Protecting critical energy and waterresources from vandalism or theft. Coordinating with local authorities to respond to climate-related emergencies, such as floods, storms, or heatwaves. Implementing evacuation plans and providing support during natural disasters. **Traffic -**Managing traffic to reduce congestion and emissions, especially during the implementation of new mobility projects. Enforcing regulations related to low-emission zones and sustainable transportation initiatives.

			Facilitating educational events on disaster prevention and management. Data Provision
Energy Systems Built environment Mobility & transport Waste & Circular economy Citizens engagement	National Association of the municipalities of the Republic of Bulgaria (NAMRB) Partner	**High level of influence** Policy and Advocacy Funding and Resources Project Implementation Technical support Monitoring and Evaluation Capacity building Public engagement	**High level of interest** Provide training and capacity-building programs for local officials and stakeholders to enhance their ability to implement climate actions effectively. Facilitating the exchange of best practices and strategies between municipalities Policy implementation Monitoring and reporting on climate progress Facilitating green infrastructure development Facilitating funding and investment – EU and national funding Cross- border collaboration Harmonizing local and national goals
Waste & Circular economy Mobility &Transport Green infrastructure & Nature base solutions	Municipal enterprise for public works Partner	**High level of influence** Very important role for cleaning and maintenance of urban infrastructure and waste management Has knowledge about the real needs of citizens and companies in the above mentioned sectors of Gabrovo CCC Planning of new effective actions toward climate neutrality Technical support Capacity building Community engagement	**High level of interest** Cleaning, organizaing waste, infrastructure maintenance through out seasons Maintening and greening urban areas Provide circular economy practices Waste management Water and resource management Public engagement and awareness through educational campaigns Partnerships with local business and institutions Disaster prevention and preparedness to extreme weather events Monitoring & maintenance of infracture

Energy Systems Built environment Mobility &transport Waste & Circular economy Green infrastructure and naturebase solutions Citizens engagement	VIK Gabrovo- water supply and sewerage Gabrovo Municipal Water supplier	**High level of influence** Maintenance of water system, sewarge system, polution monitoring Invests in renovation of the water and sewer systems Provides technical solutions and participates in Gabrovo Council for sustainable urban developement Community engagement Monitoring & data provider for GHG emission invetories	**High level of interest** Promotes energy efficiency in water management Provides sustainable water usage and conservation Waste water treatment & emissions reduction Flood resilience & climate adaptation Wastewater reuse & circular economy Provider of public wareness on water usage and sustainable water management Collaboration with Municipal & regional climate projects
Energy Systems Built environment	Sustainable Energy Development Agency (SEDA)	**High level of influence** Develops the regulatory framework in the field of energy efficiency Technical support Controld Energy audits Policy development - evidense based climate policy making Capacity building Community engagement & partnerships Data Provider	**High level of interest** Instrumental in alighnment local climate action plan with national & EU enenergy efficiency and sustainability goals. SEDA can conduct energy audits of Gabrovo's buildings and infrastructure to identify energy-saving opportunities. Can assess the potential for various renewable energy sources (solar, wind, geothermal) in Gabrovo and provide feasibility studies. Providing tech support expertise and capacity building support to municipalities in developing and executing energy and climate action plans. Public awareness events facilitator
Energy & Built environment Mobility &transport	Ministry of regional development and public works	**High level of influence** Managing Authority of Bulgarian Recovery and Resilience Plan and the national program Regions under development for sectors : Energy & Built environment and	**High level of interest** Encourages integration of energy – efficient technology and materials in infrastructure projects Responsible in managing and destributing EU cohesion policy funds

		Mobility &transport Regulatory framework developer and controller for Urban Planning Policy and program development Provides capacity building and technical support to the municipalities	Oversees national program for energy efficiency Regulatory framework & policy implementation Coordinatotion of climate resilience and adaptation projects Green infrastructure development The ministry is influencing the extends to the planning and financing of the sustainbale transportation systems. Public private partnership facilitator Oversees the compliance with EU directives
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	National statistics institute Research and data provider	**High level of influence** Official data provision Technical support Capacity building Policy developer – evidence-based climate policy	**High level of interest** Provider of key information and official data on all climate related issues – energy, building, waste, recycling. Tailored data on local climate planning and disaster prevention Socio- economic data for climate policy planning Tracking progress towards national and EU climate goals
Mobility &transport Citizens engagement	Ministry of transport and communication	**High level of influence** Technical and advisory support Policy development Capacity building Community engagement	**High level of interest** Promote public transportation, active transportation, and electric vehicles. Ensure that transportation infrastructure is designed and built with climate resilience in mind. Implement policies to reduce emissions from the transportation sector. Smart city technology promoter Intelligent transport system supporter Policy development – playes a role in shaping EV incentives

			Collaboration with EU and national policies Ensures Gabrovo benefits from large scale investement from the sustainable tranport infrastructure – TEN-T Public awareness in low emissiions mobility usage Encourging behaviour change Setting emissions standards Compliance with EU directives
Green infrastructure & nature base solutions Citizens engagement	Executive forest Agency	**High elevel of influence** Data provider for inventories Local Forest manager and planner Projects development partner providing innovative solutions for Green infrastructure & nature base solutions Technical support partner Participates in capacity building and community engagement	**High elevel of interest** Implements sustainable forest management practices to protect carbon sinks and promote biodiversity. Reforestation Support to increase forest cover and carbon sequestration. Forest Fires Prevention Promote the use of sustainable forest products and reduce deforestation. The EFA is responsible for monitoring and reporting on the carbon stock of Bulgaria's forests
Mobility & transport Waste & Circular economy	Ministry of youth and sport	**High elevel of influence** Community engagement Policy developer Capacity building Climate advocate	**High elevel of interest** Incorporate climate change education into school curricula and extracurricular activities, focusing on the importance of sustainability and the role of young people in addressing climate challenges. Train young people to become climate ambassadors Encourage the construction or renovation of sports facilities using sustainable materials and energy-efficient technologies. Public awareness about climate change and inspire young people to take action.

			Work with environmental organizations, schools, and community groups to implement climate-related projects and initiatives. Support the development and implementation of policies that promote sustainable practices and reduce greenhouse gas emissions. Encourage the use of bicycles, walking, and public transportation for commuting to sports facilities and events Promoting green spaces
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Ministry of Labour and social policy	**High elevel of influence** Data sharing Community engagement Social support Financial support	**High elevel of influence** Creation of green jobs **Job Training and Reskilling:** Offer retraining programs for workers in sectors affected by climate change, helping them transition to new industries or occupations. **Unemployment Benefits:** Ensure adequate unemployment benefits for workers who lose their jobs due to climate-related impacts or economic transitions. **Social Assistance:** Provide social assistance programs to support vulnerable populations, such as low-income families and individuals, who may be disproportionately affected by climate change. Develop guidelines and regulations to protect workers from climate-related hazards, such as extreme heat, air pollution, and natural disasters. **Health and Safety Training** Promote health and safety training programs that address climate-related risks and equip workers with the knowledge and skills to protect themselves. **Stakeholder Engagement:** Collaborate with local

			governments, businesses, and environmental organizations to develop and implement climate-friendly policies and initiatives. **Public-Private Partnerships:** Encourage public-private partnerships to invest in green infrastructure and create sustainable jobs. **Climate-Friendly Policies:** friendly practices and reduce greenhouse gas emissions. Support a just transition to a low- carbon economy, ensuring that workers and communities are not left behind.
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Gabrovo Chamber of commerce and industry	**High level of influence** Capacity building Technical support Funding initiatives Business collaboration	**High elevel of interest** A key player in Gabrovo region for connecting the business, citizens and public administration Engaging business in climate actions Advocating for green investement Supporting innovation in green technology Building green workforce - training and uposkilling for green jobs Raising awareness on climate issues Engaging in EU and national climate programs
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Ministry of Tourism	**Moderate level of influence** Capacity building Community engagement Environmental education Strategy developer	**High level of interest** Advocating for sustainable tourist practices Green and blue zones Community events Promoting of naturebased tourism and eco practices Reducing tourism's carbon footpring by promoting of low emissions transport Promoting of green certifications for tourism

			businesses such as GREEN Key and EU Eco Label Promoting Environmental standards for tourism Supports Concervation initiatives Develops strategies for adapting to climate change
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Bulgarian Chamber of Commerce and Industry	**Moderate level of influence** Advocating for climate-friendly Policies Fostering Innovation Promoting Sustainable Business Practices Capacity building	**High level of interest** By promoting sustainable business practices, fostering innovation, and advocating for policies that support climate action. Facilitates public-private partnerships Supporting SMEs in transition to sustainability Fostering innovation entrepreneurship Capacity building for green jobs Business engagement in climate awareness International collaboration and trade
Waste & Circular economy Green infrastructure&NBS Citizens engagement	Ministry of Agriculture and food	**Moderate level of influence** Financial opportunities Innovation practices Capacity building Data sharing Community engagement	**High interest level** Promoting sustainable ractices in agriculture Supports landuse and carbon sequestation Funding and support for green agriculture Promoting climate resilience in agriculture Water concervation and irrigation efficiency Supporting rural development - green tourism, eco-tourism Supports circular economy practices Rasing awareness about sustainable farming
Waste & Circular economy Citizens engagement Green infrastructure and nature base solutions	Bulgarian foundation Bio diversity	**Significant level of influence** Capacity building Community engagement Nature-based climate solutions	**High level of interest** Educational campaigns and awareness Data sharing Collaborative events Leveraging national and EU funding Biodiversity conservation and climate adaptation

			Supporting sustainable land use Tracking ecosystem health and climate impact Promoting eco tourism and practices
Waste & Circular economy Green infrastructure&NBS Citizens engagement	Ministry of Environment and water Ministry of environment and water – regional office Veliko Turnovo	**Significant role** Policy development and governence Developes the strategic framework for climate adaptation of Bulgaria Funding support by national program Environment Technical support and Extertise monitoring Reporting body on climate actions Community engagement Capacity building	**High level of interest** Enforcing national and regional policies aimed at reducing greenhouse gas emissions and promoting sustainable practices. Providing financial support for local projects that focus on renewable energy, energy efficiency, and other climate-friendly technologies. Organizing workshops and seminars to educate the public and local businesses about climate change and sustainable practices. Working closely with the Gabrovo municipality to develop and implement climate action plans tailored to the region's specific needs. Establishing systems to monitor environmental indicators and report on the progress of climate initiatives, ensuring transparency and accountability. Awareness campaigns, and volunteer programs.
Energy Systems Built environment Mobility &transport Citizens engagement	National Trust Eco Fund	**Significant High level of influence** Monitoring projects Funding grants Community engagement Debt-for-Environment Swaps Collaboration with Local Authorities Capacity building Public awareness and education	**High level of interest** Providing financial support for projects aimed at reducing greenhouse gas emissions, improving energy efficiency, and promoting renewable energy sources. Selecting and approving projects that align with climate goals, and monitoring their implementation to ensure they meet the desired outcomes. Utilizing funds from debt-for-environment and debt-

			for-nature swaps to finance environmental projects in Gabrovo. Working closely with the Gabrovo municipality and other local stakeholders to develop and implement effective climate action plans. Supporting educational and awareness campaigns to engage the community in climate action and promote sustainable practices. Promotion of renewable energy Sustainable transport and mobility initiatives Waste management – finances initiatives Finances green spaces
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Elna – local business Pastili – local business STS investment holding – local business Senstate Technology – local business Forge capital – local business Mechatronic SC – local business	**High influence** Innovation driver Capacity building Funding Community engagement Carbon Offsetting	**Moderate interest** Implementing Sustainable Practices Green Products and Services Community Engagement: Environmental projects, such as tree planting, clean-up drives, and educational campaigns about sustainability. Innovation and Technology: reduce emissions and improve energy efficiency. Participating in carbon offset programs to compensate for their emissions
Energy Systems Built environment Mobility &transport Waste & Circular economy Citizens engagement	Youth center Gabrovo	**High influence** Capacity building Community engagement	**High interest** Engage in community projects, Educational, policy depates on climate issues ; Engage youth

3 Part B – Pathways towards Climate Neutrality by 2030

Part B represents the core of the CCC Action Plan, shaped by local authorities, local businesses, and stakeholders, comprising of the most essential elements: scenarios, strategic objectives, impacts, action portfolios and indicators for monitoring, evaluation, and learning.

3.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

Module B-1 "Climate Neutrality Scenarios and Impact Pathways" lists and describes impact pathways, early and late outcomes and direct and indirect impacts (co-benefits) according to and adapted from the NetZeroCities Theory of Change and the CCC Action Plan Guidance – clustered by fields of action.

B-1.1: Impact Pathways

#	**Type of Systemic levers**
#1	Technology
#2	Finance and business models
#3	Governance, policy and regulation
#4	Capacity and capabilities
#5	Democracy, social innovation and social change

Table B-1.1: Impact Pathways					
Fields of action	**Systemic levers**	**Early changes (1-2 years)**	**Late outcomes (3-4 years)**	**Direct impacts (Emission reductions CCC)**	**Indirect impacts (co-benefits)**
Energy systems &Built environment	#1	Key innovative solutions and technologies are identified. Local needs are investigated. Relevant stakeholders and interested parties are identified and involved	Advanced technologies and innovative solutions are promoted and used by the final users – citizens, business and institutions. Increased number of available solutions.	Reduction of GHG emissions by 38 746.83 t CO2 eq (2024-2030)	Reduced costs for energy consumption. Improved quality of life. Increased competitiveness of local industry
	#2	Business models and investments for solutions are developed. Local, national and international funding opportunities are identified.	Investment projects are developed by interested parties and initiated for further implementation. Increased funding in energy systems.		Increased public funding and attracted private investments
	#3	Local strategies and regulations are reviewed and updated. Analysis of national legislation and regulation framework is done.	Improved local strategies and regulations. National legislation and regulation framework are influenced by the results of CCC implementation.		Improved governance and regulation framework

	#4	Plan of workshops, trainings and information campaigns are developed to improve capacity of all society groups for CO2 neutrality.	Workshops, trainings and information campaigns are organised. Improve capacity of all society groups		Improved capacity for all societal groups.
	#5	Investigation on possible social innovation action and changes.	Social innovations are developed and started to be implemented.		Implemented social innovations
Mobility & transport	#1	Key innovative solutions and technologies are identified. Local needs are investigated. Relevant stakeholders and interested parties are identified and involved	Noticeable change of vehicle fleet towards use of EVs, PHEVs and other alternative fuels	Reduction of GHG emissions by 35 466 t CO2 eq (2024-2030)	Improved mobility and quality of life Increased use of public transport Improved air quality and health of the community Improved safety conditions in transport. New competencies and innovations
	#2	Business models and investments for solutions are developed. Local, national and international funding	Investment projects are developed by interested parties and initiated for further implementation.		Increased pubic fundings and attracted private investments

		opportunities are identified.	Increased funding in energy systems.		
	#3	Local strategies and regulations are reviewed and updated. Analysis of national legislation and regulation framework is done.	Improved local strategies and regulations. National legislation and regulation framework are influenced by the results of CCC implementation.		Improved governance and regulation framework
	#4	Plan of workshops, trainings and information campaigns are developed to improve capacity of all society groups for CO2 neutrality.	Workshops, trainings and information campaigns are organised. Improve capacity of all society groups		Improved capacity of all society groups.
	#5	Investigation on possible social innovation action and changes.	Social innovations are developed and started to be implemented.		Implemented social innovations
Waste & circular economy	#1	Key innovative solutions and technologies are identified. Local needs are investigated. Relevant stakeholders and interested parties are identified and involved	Advanced technologies and innovative solutions are promoted and used by the final users – citizens, business and institutions. Increased number of available solutions.	Reduction of GHG emissions NE	Reduced costs and taxes for waste disposal. Improved quality of life. Increased re-use of materials in local industry. Improved circularity.

	#2	Business models and investments for solutions are developed. Local, national and international funding opportunities are identified.	Investment projects are developed by interested parties and initiated for further implementation.		Increased pubic fundings and attracted private investments
	#3	Local strategies and regulations are reviewed and updated. Analysis of national legislation and regulation framework is done.	Improved local strategies and regulations. National legislation and regulation framework are influenced by the results of CCC implementation.		Improved governance and regulation framework
	#4	Plan of workshops, trainings and information campaigns are developed to improve capacity of all society groups for CO2 neutrality.	Workshops, trainings and information campaigns are organised. Improve capacity of all society groups		Improved capacity of all society groups.
	#5	Investigation on possible social innovation action and changes.	Social innovations are developed and started to be implemented.		Implemented social innovations
Green infrastructure & nature-based solutions	#1	Key innovative solutions and technologies are identified.	Advanced technologies and innovative solutions are promoted and used by the	Reduction of GHG emissions NE	Improved quality of live. Increased use of green technologies and

		Local needs are investigated. Relevant stakeholders and interested parties are identified and involved	final users – citizens, business and institutions. Increased number of available solutions.		nature-based solutions. Green job creation. Increased number of visitors and tourists. Increase the adaptation potential of the community to climate change. Protected biodiversity.
	#2	Business models and investments for solutions are developed. Local, national and international funding opportunities are identified.	Investment projects are developed by interested parties and initiated for further implementation.		Increased pubic fundings and attracted private investments
	#3	Local strategies and regulations are reviewed and updated. Analysis of national legislation and regulation framework is done.	Improved local strategies and regulations. National legislation and regulation framework are influenced by the results of CCC implementation.		Improved governance and regulation framework
	#4	Plan of workshops, trainings and information campaigns are developed to improve capacity of all	Workshops, trainings and information campaigns are organised.		Improved capacity of all society groups.

		society groups for CO2 neutrality.	Improve capacity of all society groups		
	#5	Investigation on possible social innovation action and changes.	Social innovations are developed and started to be implemented.		Implemented social innovations

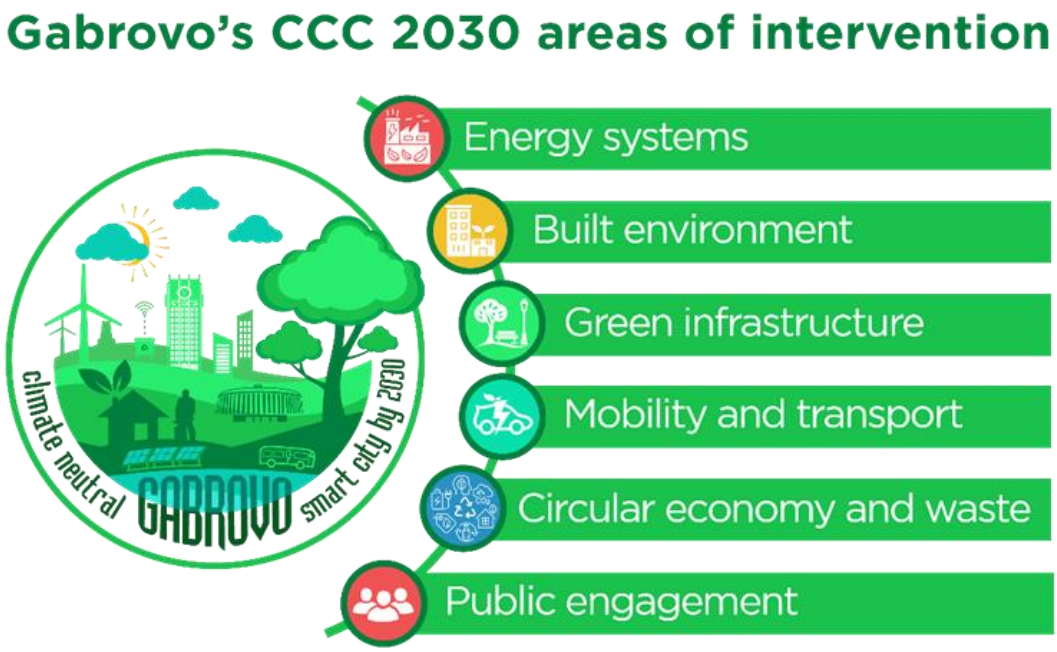
B-1.2: Description of impact pathways

In this section of Gabrovo CCC AP the impact pathways based on the planned areas of interventions are described. I fact there are 5 main sectors choozen for interactions based on the needs and plans of Gabrovo Municipality till 2030, alreday included in the scope Gabrovo Integrated Development Plan and related to its sectoral substrategies. In this CCC AP the sector of Energy Systems is merged with the sector Built environment, because most of the interventions on energy systems are included in buildings reconstruction and renovation. Also the renovation of industrial buildings and facilities are included in this sector. The most important measure in Energy System and Built Environment sector are focused on public and private buildings' renovation and RES installations.

The sector Mobility and Transport will implement actions related to electrification of public and private transport, and development of a sustainable mobility through construction of new cycling lanes, efficient traffic management and control.

The Sector Waste and Circular economy is choozen because of the long experience of Gabrovo as an industrial center and its efforts to establich a regional innovation valley in Circularity together with Technical University of Gabrovo, Regional Innovation Center and advanced innovative companies. The actions in this sector will try to reduce and re-use waste both by companies and citizens, through separation of waste, smart waste management system, new underground bins' sites, trying to achieve zero waste.

The Green infrastructure and NBS are part of Gabrovo adaptation strategy to climate change and thourgh this area of interventions an improvement of green areas by implementation of NBSs is planned in this CCC AP.



Energy systems & Built environment

The building stock, constructed between 1960 and 1970, exhibits reduced energy efficiency. Many residents rely on outdated heating systems that use high-emission fuels, largely due to their lower socioeconomic status. Consequently, the municipality's efforts are directed towards:

Transforming Energy Systems and Built Environment - Integrating renewable energy, sustainable design, energy efficiency, and green infrastructure for a sustainable urban future.

Renewable Energy Integration - Incorporating solar and other renewable sources to power buildings and infrastructure, reducing carbon footprint and dependence on fossil fuels.

Sustainable Building Design - Implementing eco-friendly materials, efficient layouts, and green technologies to enhance energy efficiency and reduce environmental impact in construction projects.

Energy Efficiency Measures - Adopting smart technologies, energy management systems, and insulation practices to optimize energy use and minimize wastage in buildings and urban facilities.

Mobility & transport

A substantial portion of the vehicle fleet is outdated, as indicated by Bulgarian statistics. Therefore, the municipality's efforts are focused on:

Transforming Urban Mobility: A Sustainable Future - Innovative public transportation, cycling infrastructure, and electric vehicle adoption are shaping the future of urban mobility towards sustainability and efficiency.

Public Transportation Expansion - Investments in expanding public transportation networks improve access, reduce congestion, and lower carbon emissions in cities.

Cycling Infrastructure Development - Developing safe and connected cycling infrastructure promotes active transportation, reduces pollution, and enhances quality of life for urban residents.

Electric Vehicle Adoption - The adoption of electric vehicles contributes to cutting emissions, decreasing reliance on fossil fuels, and advancing sustainable transportation in cities.

Waste & circular economy

Gabrovo Municipality operates a two-component system (biodegradable and recyclable) for the separate collection of household waste, supplemented by systems for collecting packaging waste, textile waste, and annual campaigns for the disposal of specific waste types. Additionally, there are provisions for the free disposal of sorted construction and bulky waste.

However, the municipality has identified several shortcomings in waste management, including outdated and inefficient equipment and mechanization for waste collection, as well as a lack of understanding among some residents about the importance of separate waste disposal. Despite an increase in inquiries from citizens regarding the disposal of hazardous, construction, or bulky waste, there is still room for improvement in this area. The rate of separate waste collection **remains** insufficiently high, and the current waste fee system does not incentivize proper waste segregation.

Consequently, the municipality's efforts will be focused on:

Efficient Waste Management Strategies - Implementing innovative waste management strategies is crucial for reducing environmental impact and promoting sustainability in urban areas.

Optimizing Waste Collection Systems - Utilizing smart technology and data analytics can streamline waste collection routes, leading to cost savings and improved efficiency in waste management processes.

Promoting Source Separation Practices - Encouraging residents and businesses to separate recyclables from general waste at the source can increase recycling rates and reduce the amount of waste sent to landfills.

Zero waste initiatives - Implementing **zero waste initiatives** and principle of circularity involves minimizing waste generation, maximizing recycling and reuse of materials, and diverting organic waste from landfills, contributing to a more sustainable circular economy.

Green infrastructure & nature-base solutions

Gabrovo Municipality is already committed to enhancing its green infrastructure through various initiatives. These include the preservation of biodiversity and the refurbishment of parklands and communal green spaces. Efforts are also directed towards the rehabilitation of the street network, pedestrian areas, and sidewalks, as well as the development of inter-block spaces. The municipality is focused on refurbishing educational facilities and developing new recreational and sports facilities, along with children's play areas. The enhancement of heritage and visitor attractions, coupled with the upgrading of the urban vision, further underscores Gabrovo's dedication to creating a sustainable and vibrant environment for its residents. Therefore, the municipality of Gabrovo will continue its efforts working on:

Green Infrastructure Improvement - Integrating nature-based solutions like green roofs, permeable pavements, and urban forests to enhance biodiversity, manage rainwater, and improve air quality in urban settings, development and implementation of EWMS.

Urban Greening Projects - Urban greening projects involve the strategic integration of vegetation in urban areas to improve air quality, reduce heat island effects, and enhance biodiversity, contributing to overall urban resilience and well-being.

Rainwater Harvesting Systems - Innovative rainwater harvesting system will be designed for irrigation of the green areas. Alternative nature based solutions such as green roofs and buildings, rain gardens, and permeable pavements, are planned to be implemented in the future promoting sustainable water management practices in urban areas.

Biodiversity Conservation Efforts - Biodiversity conservation efforts focus on preserving and restoring natural habitats within urban landscapes to support diverse plant and animal species, enhance ecosystem services, and promote ecological balance for a resilient urban ecosystem.

3.2 Module B-2 . Climate Neutrality Portfolio Design - contains a project description for each action planned in the CCC Action Plan.

Table B-2.1: Description of action portfolios		
Fields of action	Portfolio description	
	Summary of planned interventions	Descriptions
Energy systems & Built environment	Increasing the share of RES, energy efficiency, transitioning from high-emission to low-emission fuels, constructing low-emission and zero-emission buildings and facilities, and reduction of the carbon footprint in the municipal, tertiary, and private sectors.	The municipality is implementing a comprehensive strategy to enhance sustainability and energy efficiency across various sectors. This involves the construction of renewable energy source (RES) installations in renovated municipal buildings and the introduction of systems to monitor the production and consumption of these renewable sources. There is a concerted effort to limit the use of high-emission solid fuels and heating appliances. Based on reports from the Long-term RES Program, the municipality is focused on monitoring development, planning measures, and promoting renewable energy sources. A waste treatment plant will be developed to serve as an energy community. Renovation of existing municipal buildings will elevate them to the highest energy efficiency standards, replacing oil and coal heating systems with heat pumps, natural gas, or pellets. New municipal buildings will be constructed as near-zero energy buildings, and there will be a push for the construction of zero energy consumption and energy-positive buildings. An energy monitoring system will be introduced and maintained in municipal buildings. Additionally, criteria for Environmental Product Declarations and Carbon Footprint will be incorporated into the selection process for suppliers and contractors in municipal tenders and competitions.

		The municipality will develop a system to determine the carbon footprint of its activities, encouraging the renovation of existing buildings to the highest levels of efficiency and the construction of new buildings with zero energy consumption and energy-positive features. Residential buildings will be renovated to meet class A and B energy standards. Efforts will also be made to increase the capacity of the private sector to develop Environmental, Social, and Governance (ESG) strategies, thereby reducing their carbon footprint. Lastly, the municipality aims to improve its greenhouse gas (GHG) emission inventory data collection system.
Mobility & transport	Increasing the share of electric vehicles, development of infrastructure that will help to increase the share of electric vehicles, transitioning from high-emission to low-emission fuels, measures to increase the use of public transport.	The municipality is undertaking a series of initiatives to modernize and enhance the sustainability of its transportation system. This includes the gradual replacement of the public transport fleet with electric and compressed natural gas (CNG) vehicles, as well as the gradual transition of the administration's vehicle fleet to electric vehicles. Efforts are being made to promote the use of electric vehicles in private and commercial transport sectors. To support this transition, restricted areas for vehicles will be established, and paid parking areas will be expanded with new rules for their use. Additionally, there will be the construction of charging stations for electric cars, backed by a regulatory framework to facilitate this infrastructure development. A mobile application for public transport will be developed to improve user convenience and accessibility.
Waste & circular economy	MSW reduction - increase the separate collection at source and share of underground waste collection, upgrading the system	The municipality is implementing a comprehensive plan to improve waste management and increase the efficiency of municipal solid waste (MSW) collection. This plan includes

	of separate collection and recovery of waste, increasing citizens' capacity for waste collection.	providing incentives and imposing sanctions to encourage the separate collection of MSW at the source. The existing system for separate collection and waste recovery will be upgraded to enhance its effectiveness. Additionally, the municipality aims to increase the share of underground waste collection and separation of waste, which offers a more efficient and aesthetically pleasing solution. Efforts will also be made to boost citizens' capacity and participation in waste collection through educational programs and community initiatives.
Green infrastructure & nature-based solutions	Establishment and maintenance of disaster monitoring, preparedness and warning and response systems, and modernization of the green system	The municipality is embarking on a comprehensive plan to enhance urban and environmental sustainability. This includes investigating the potential for connecting the city center with urban green spaces through green corridors, riverbanks, eco-trails, and other tourist pathways. A key aspect of this initiative is the care and maintenance of long-lived tree vegetation in urban areas, alongside establishing criteria for compensatory greening and integrating these criteria into local regulations. To ensure effective management, guidelines for evaluating urban vegetation will be developed, and areas lacking long-lived tree vegetation will be identified. Existing tree vegetation in urban streetscapes will be catalogued, and new greening projects will be planned and executed. A list of tree species suitable for planting in Gabrovo, considering future climate conditions, will be created, and supplemental irrigation systems for long-lived tree vegetation and green spaces will be implemented and automated. The plan also includes developing criteria for vertical and roof greening in line with municipal regulations, as well as

		participating in the national initiative to protect old forests. A system will be established to collect data on forest ecosystems affected by natural disturbances and biomass loss. Efforts will focus on afforesting unplanted areas and reforesting abandoned and erosion-prone lands, while establishing and maintaining protective forest belts through anti-erosion efforts. Riverbed restoration and maintenance will be carried out, including developing a plan to ensure riverbed conductivity and creating a public flood registry for Gabrovo. Additionally, a database will be established to track fire incidents, and high-efficiency fire protection systems will be introduced in buildings and facilities. To enhance urban resilience to extreme heat, an information base and mobile app will be developed to locate "cool spots" such as parks, museums, libraries, and air-conditioned public spaces. Climate control measures will be implemented in public transport vehicles, and a network of climate volunteers will be created to support and promote climate adaptation efforts. Finally, disaster monitoring systems will be established and maintained to effectively respond to emergencies.

The following table presents an overview of the measures planned in SECAP (48.7% GHG emissions reduction) and CCC (31,8% GHG emissions reduction), which in total are achieving the goal – 80,5% GHG emissions reduction by 2030. (2030 compared to 2008)

Sector	**Measures SECAP**	**GHG reduction, t CO2 eq SECAP**	**Costs, EUR SECAP**	**Measures CCC**	**GHG reduction, t CO2 eq CCC**	**Costs, EUR CCC**
Energy systems & Built environment	M.1. Limiting the use of high-emission solid fuels and heating appliances M.2. New municipal buildings - nearly zero energy consumption M.3. Existing municipal buildings - highest energy efficiency class and low-emission fuel base M.4. Renovated municipal buildings - RES installations and a system for monitoring production and consumption M.5. Renovating buildings to the highest levels of efficiency and constructing new buildings with zero energy consumption and energy-positive buildings M.6. Residential buildings - Class A and B M.7. Zero-energy buildings and energy-positive buildings M.8. Energy monitoring system	**170 404**	**40 571 020**	M.1. Municipal buildings renovation and RES installations M.2. Tertiary buildings renovation and RES installation M.3. Residential buildings retrofitting M.4. Industrial facilities and systems renovation - training and capacity building of industry for ESG strategies development	**69 182**	**27 200 000**

	M.9. Replacement of street lighting fixtures with LED lights M.10. Monitoring the development and promotion of RES					
Mobility & transport	M.11. Pre-investment study of public transportation M.12. Gradual replacement of the public transport fleet with electric and CNG (compressed natural gas) vehicles M.13. Gradual replacement of the internal fleet with electric vehicles M.14. Promotion of electric vehicle use in private and commercial transportation M.15. Establishment of car-restricted zones M.16. Expansion of fee-based parking zones and regulations for use M.17. Charging stations for electric vehicles M.18. Mobile app for public transportation navigation	**6 823**	**14 009 401**	M.5. Public transport replacement with electric and CNG buses, development of charging infrastructure M.6. Municipal vehicles replacement with electric vehicles M.7. Private transport replacement with electric and low-emission vehicles M.8. Sustainable mobility – development of cycling infrastructure and traffic optimization	**58 154**	**10 000 000**
Waste & circular economy	M.19. Incentives and sanctions for increasing source-separated waste collection M.20. Improvement of the Waste Source Separation and Recycling System	**17 717**	**10 225 840**	M.9. Underground waste collection and separation of waste	**NE**	**4 000 000**

	M.21. Increasing the share of underground waste collection.					
Cross-sectoral field of action	M.22. Introduction of criteria for Environmental Product Declarations (EPDs) and Carbon Footprint in the selection of suppliers and contractors for municipal tenders and competitions M.23. Improvement of the data collection system for greenhouse gas (GHG) emissions inventory M.24. Development of a system for determining the carbon footprint of municipal activities M.25. Establishment of a carbon-neutral industrial zone	**NE**	**12 935 688**	**-**	**-**	**-**
Green infrastructure & nature-based solutions	The municipality is embarking on a comprehensive plan to enhance urban and environmental sustainability. This includes investigating the potential for connecting the city center with urban green spaces through green corridors, riverbanks, eco-trails, cycling routes, and other tourist pathways. To enhance urban resilience to extreme heat, an information base and mobile app will be developed to locate "cool spots" such as parks, museums, libraries, and air-conditioned public spaces. Climate control measures will be implemented in public transport vehicles,	**NE**	**2 040 055**	M.10. Improvement of green infrastructure for climate adaptation	**NA**	**10 410 000**

	and a network of climate volunteers will be created to support and promote climate adaptation efforts. To ensure effective management, guidelines for evaluating urban vegetation will be developed, and areas lacking long-lived tree vegetation will be identified. Existing tree vegetation in urban streetscapes will be cataloged, and new greening projects will be planned and executed. A list of tree species suitable for planting in Gabrovo, considering future climate conditions, will be created, and supplemental irrigation systems for long-lived tree vegetation and green spaces will be implemented and automated. Rainwater harvesting system will be established. The plan also includes development of criteria for vertical and roof greening in line with municipal regulations, as well as participation in a national initiative to protect old forests. A system will be established to collect data on forest ecosystems affected by natural disturbances and biomass loss. Efforts will be focused on afforestation of unplanted areas and towards reforesting abandoned and erosion-prone lands, while					

	establishing and maintaining protective forest belts through anti-erosion efforts. Other key aspect is the care and maintenance of long-lived tree vegetation in urban areas, alongside establishing criteria for compensatory greening and integrating these criteria into local regulations.					

B-2.2: Individual action outlines

The CCC expands the field of actions planned in SECAP (48.7% GHG emissions reduction) and proposes additional measures that achieve an additional reduction of GHG emissions by 31.8%. Thus, the total GHG emission reduction from CCC and SECAP reaches 80.5% in 2030 compared to the base year 2008. Individual CCC actions are presented in the table below. The measures expanded in comparison with SECAP, as well as additional measures building upon the measures under SECAP, are presented.

Table B-2.2: Individual action outlines

Action outline	Action name	**M.1. Municipal buildings renovation and RES installations**
	Action type	Technical, spatial and systemic interventions
	Action description	M.1 includes municipal buildings" renovation, part of already planned integrated territorial investments, for which energy audits, feasibility studies and designs of the buildings are done. The efforts are focused on renovation of the existing municipal buildings to achieve the highest energy efficiency standards.

		For buildings renovation innovative solutions for use of renewable energy sources (RES) installations are foreseen and expansion of the monitoring system to track the production and consumption of renewable energy within these buildings. Implementing a greater number of pilot and demonstration projects aimed at achieving zero-energy and energy-positive buildings, contingent on available funding. Introducing and expanding an energy monitoring system to support the development, implementation, and optimization of energy efficiency measures, thereby realizing significant energy savings.
Reference to impact pathway	Field of action	Energy systems & Built environment
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Renovated municipal buildings with highest energy efficiency standards. Used advanced technologies and innovative solutions. Increased number of available solutions for new zero energy consumption and high energy efficiency class with low-emission fuels. Increased funding in energy systems. Improved local strategies and regulations. Organized workshops and information campaigns about the used innovative solutions in buildings renovation to enhance the capacity of all societal groups.
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/ Municipal buildings operators – kindergarten, schools, medical facilities and other
	Action scale & addressed entities	Municipal boundary - Municipal buildings
	Involved stakeholders	MOEW, Ministry of Energy (ME), Sustainable Energy Development Agency (SEDA), Technical University of Gabrovo, Chamber of Engineers, Chamber of Architects, NDEF,

		Local Businesses, NGOs, DIP – Gabrovo, Gabrovo Regional Government, Eneffect Consult SLTD, Energy Auditors, Energopro Gabrovo (electricity supplying company), Municipal Buildings Operators (kindergartens, schools, medical facilities, and others), Ministry of Regional Development and Public Works, Associations of Owners in Multifamily Buildings, Regional Innovation Center "Ambitious Gabrovo"
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	51 623.63 MWh
	GHG emissions reduction estimate (total) per emission source sector	38 746.83 t CO2 eq
	Total costs and costs by CO2 eq unit	27 200 000 EUR
Action outline	Action name	M.2. Tertiary buildings renovation and RES installation
	Action type	Technical, spatial and systemic interventions
	Action description	M.2 included tertiary buildings renovation and RES installations for which energy audits, feasibility studies and designs of the buildings are done.

		The efforts are focused on renovation of the existing tertoary buildings to achieve the highest energy efficiency standards Use of advanced Building Efficiency and Zero-Energy Constructions will significantly expand the initiatives to renovate existing buildings to achieve the highest energy efficiency standards and construct new buildings with zero energy consumption or that are energy-positive. This also involves revising local tax and fee methodologies to incorporate incentive mechanisms, such as tax reductions linked to the level of energy efficiency and the use of renewable energy sources (RES) in buildings. Enhanced Monitoring and Promotion of Renewable Energy Sources (RES): Scaling up the analysis and evaluation of reports from the Long-term RES Program to better support the planning, development, and promotion of renewable energy usage, ensuring a comprehensive and strategic approach to sustainable energy management.
Reference to impact pathway	Field of action	Energy systems & Built environment
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Renovated tertiary buildings with used advanced technologies and innovative solutions with increased comfort for the users and institutions. Increased number of innovative solutions, which will limit the use of high-emission solid fuels and heating appliances Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops and information campaigns will be organized to present the executed projects and implemented innovative sollutions

		Enhanced capacity of public sector and institutions in energy efficiency and climate change.
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/Citizens, Local businesses
	Action scale & addressed entities	Municipal boundary - Tertiary buildings
	Involved stakeholders	MOEW, Ministry of Energy (ME), Sustainable Energy Development Agency (SEDA), Technical University of Gabrovo, Chamber of Engineers, Chamber of Architects, NDEF, Local Businesses, NGOs, DIP – Gabrovo, Gabrovo Regional Government, Eneffect Consult SLTD, Energy Auditors, Energopro Gabrovo (electricity supplying company), Ministry of Regional Development and Public Works, Ministry of Labour and Social Policy, Regional Innovation Center "Ambitious Gabrovo"
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	See M.1
	Removed/substituted energy, volume, or fuel type	See M.1
	GHG emissions reduction estimate (total) per emission source sector	See M.1
	Total costs and costs by CO2eq unit	See M.1

Action outline	Action name	M.3. Residential buildings retrofitting
	Action type	Technical, spatial and systemic interventions
	Action description	M.3 includes at least 23 multifamily buildings retrofitting to class A and B of energy efficiency. That includes intensifying efforts to limit the use of high-emission solid fuels and heating appliances. The municipal ordinance will rigorously enforce quality standards for domestic heating fuels, implementing comprehensive conditions, procedures, and control methods to ensure adherence. Expanding initiatives to renovate existing buildings to the highest energy efficiency standards and construct new buildings with zero energy consumption or energy-positive designs. This also includes revising local tax and fee methodologies to integrate robust incentive mechanisms, such as tax reductions linked to energy efficiency levels and the use of renewable energy sources (RES) in buildings. Intensifying the renovation of residential buildings to meet Class A and B energy efficiency standards. The specific upgrades and measures for each building will be determined through thorough energy efficiency assessments to ensure optimal performance. Increasing the analysis and evaluation of reports from the Long-term RES Program to strengthen the processes of evaluation, planning, and development of renewable energy use. This will support a more strategic and expansive approach to promoting sustainable energy solutions.
Reference to impact pathway	Field of action	Energy systems & Built environment
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Advanced technologies and innovative solutions are promoted and used by the final users – citizens, business and institutions.

		Increased number of available solutions to limit the use of high-emission solid fuels and heating appliances Investment projects are developed by interested parties and initiated for further implementation. Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are beginning to be implemented.
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/Citizens and Associations of owners in multifamily buildings
	Action scale & addressed entities	Municipal boundary - Residential buildings
	Involved stakeholders	MOEW, Ministry of Energy (ME), Sustainable Energy Development Agency (SEDA), Technical University of Gabrovo, Chamber of Engineers, Chamber of Architects, NDEF, Local Businesses, NGOs, DIP – Gabrovo, Gabrovo Regional Government, Eneffect Consult SLTD, Energy Auditors, Energopro Gabrovo (electricity supplying company), Associations of Owners in Multifamily Buildings, Ministry of Regional Development and Public Works, Ministry of Labour and Social Policy, Regional Innovation Center "Ambitious Gabrovo"
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030

Impact & cost	Generated renewable energy (if applicable)	na
	Removed/substituted energy, volume, or fuel type	See M.1
	GHG emissions reduction estimate (total) per emission source sector	See M.1
	Total costs and costs by CO2eq unit	See M.1
Action outline	Action name	M.4. Industrial facilities and systems renovation - training and capacity building of industry for ESG strategies development
	Action type	Technical, social and systemic intervention
	Action description	Gabrovo Municipality will establish effective partnerships between SMEs and researchers from the existing innovation ecosystem. These partnerships will support companies in identifying, developing, and implementing net-zero technologies. As a result, businesses will enhance their capacity to carry out Life Cycle Assessment (LCA) as a tool to develop Environmental Product Declarations (EPD) and Carbon Footprint (CF) assessments for Scope 1, 2, and 3 emissions. This approach will facilitate the development of decarbonization goals and targets to meet ESG and net-zero requirements. By doing so, SMEs will become more sustainable and innovative, improving their efficiency and offering differentiated products and services that align with emerging sustainability standards and consumer demands. Enhancing the capacity of SMEs will

		make them more competitive, which will improve the environmental conditions and boost the economic growth of the municipality.
Reference to impact pathway	Field of action	Energy systems & Built environment
	Systemic lever	#1, #2, #4
	Outcome	Advanced technologies and innovative solutions are promoted and used by the final users –business to improve its carbon footprint. Increased number of identified, developed, and implemented net-zero technologies. Investment projects are developed by companies and initiated for further implementation. Training sessions and information campaigns organized to enhance the capacity of SMEs. Increased capacity of industry to carry out Life Cycle Assessment (LCA) as a tool to develop Environmental Product Declarations (EPD) and Carbon Footprint (CF) assessments for Scope 1, 2, and 3 emissions
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/Private sector
	Action scale & addressed entities	Municipal boundary - private sector
	Involved stakeholders	Local business, MOEW, Ministry of economy and industry, NGO, Regional Innovation Center "Amtious Gabrovo"
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030

Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	See M.1
	GHG emissions reduction estimate (total) per emission source sector	See M.1
	Total costs and costs by CO2eq unit	See M.1
Action outline	Action name	M.5. Public transport replacement with electric and CNG buses, development of charging infrastructure
	Action type	Technical, social and systemic intervention
	Action description	Intensifying efforts to replace the public transport fleet with electric and compressed natural gas (CNG) vehicles. This expanded initiative aims to significantly increase the proportion of vehicles powered by electricity and CNG, thereby greatly enhancing the reduction of greenhouse gas emissions, improving air quality, and benefiting public health.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	#1, #2, #3, #5
	Outcome (according to module B-1.1)	Noticeable change of vehicle fleet towards use of EVs, PHEVs and other alternative fuels Investment projects are developed by interested parties and initiated for further

		implementation. Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are started to be implemented
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/ Municipal transport company
	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	Ministry of transport, MOEW, Municipal transport company, Citizens, Local companies, Enegopro – local energy provider, DIP – Gabrovo, NAMRB
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	123 115.69 MWh
	GHG emissions reduction estimate (total) per emission source sector	35 466 t CO2 eq

	Total costs and costs by CO2eq unit	10 000 000 EUR
Action outline	Action name	M.6. Municipal vehicles replacement with electric vehicles
	Action type	Technical, social and physical intervention
	Action description	Expanding and intensifying efforts to progressively replace the internal fleet with electric vehicles. This enhanced initiative will significantly reduce greenhouse gas emissions, improve air quality, and promote public health. Additionally, it will serve as a leading example for the municipality's residents, demonstrating the benefits of adopting cleaner transportation solutions.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	#1, #2, #3, #4
	Outcome (according to module B-1.1)	Noticeable change of vehicle fleet towards use of EVs, PHEVs and other alternative fuels Investment projects are developed by interested parties and initiated for further implementation. Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are started to be implemented

Implementation	Responsible bodies/person for implementation	Gabrovo Municipality
	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	Ministry of transport, MOEW, Local companies, Enegopro – local energy provider, DIP – Gabrovo, NAMRB
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	See M.5
	Removed/substituted energy, volume, or fuel type	See M.5
	GHG emissions reduction estimate (total) per emission source sector	See M.5
	Total costs and costs by CO2 eq unit	See M.5
Action outline	Action name	M.7. Private transport replacement with electric and low-emission vehicles
	Action type	Technical, social and physical intervention
	Action description	Intensifying and expanding efforts to encourage the adoption of electric vehicles within both private and commercial fleets. While the renewal of these vehicle fleets and the

		shift to electric vehicles naturally evolves beyond direct municipal control, the municipality will actively stimulate and support this transition through targeted initiatives and incentives.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Noticeable change of vehicle fleet towards use of EVs, PHEVs and other alternative fuels Investment projects are developed by interested parties and initiated for further implementation. Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are started to be implemented
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/private and commercial sector
	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	Ministry of transport, MOEW, Citizens, Local companies, Enegopro – local energy provider, DIP – Gabrovo
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030

Impact & cost	Generated renewable energy (if applicable)	See M.5
	Removed/substituted energy, volume, or fuel type	See M.5
	GHG emissions reduction estimate (total) per emission source sector	See M.5
	Total costs and costs by CO2 eq unit	See M.5
Action outline	Action name	M.8. Sustainable mobility – development of cycling infrastructure and traffic optimization
	Action type	Technical, spatial, physical, social and systemic intervention
	Action description	Creation of Car-Restricted Zones: Intensifying efforts to establish car-restricted zones to encourage public transportation use, significantly improve air quality, and enhance public health. Future studies may expand these zones to allow access for electric vehicles, potentially promoting the adoption of electric taxis. Expansion of Fee-Based Parking Zones: Broadening the implementation of fee-based parking zones and updating related regulations, including: • Providing free parking for electric vehicles. • Allocating designated parking spaces for electric taxis.

		• Enforcing parking restrictions for vehicles with low environmental standards. Additionally, creating buffer zones and fee-based parking areas near popular tourist attractions. Development of Electric Vehicle Charging Infrastructure: Expanding the construction of charging stations for electric vehicles and establishing a supportive regulatory framework, including public-private partnerships, to facilitate the growth of this infrastructure. Launch of a Public Transportation Navigation App: Intensifying the development and promotion of a mobile app designed to improve navigation for public transportation, thereby encouraging increased use of these services.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Noticeable change of vehicle fleet towards use of EVs, PHEVs and other alternative fuels Investment projects are developed by interested parties and initiated for further implementation. Increased funding in energy systems. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks. Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are started to be implemented
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality/ Municipal parking management enterprise, Regional Directorate of the Ministry of Internal Affairs - Gabrovo Gabrovo Municipality and private investors

	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	MOEW, Citizens, Local Companies, DIP – Gabrovo, Regional Directorate of the Ministry of Internal Affairs - Gabrovo, Gabrovo Regional Government, Energopro Gabrovo (electricity supplying company), Police Office – Gabrovo, Regional Inspectorate of Education Gabrovo, Local Tourist Information Office, Regional Innovation Center "Ambitious Gabrovo", NGO, Technical University of Gabrovo, Local Schools, Municipal Public Transport Company
	Comments on implementation – consider mentioning resources, timelines, milestones	2025-2030
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	See M.5
	GHG emissions reduction estimate (total) per emission source sector	See M.5
	Total costs and costs by CO2 eq unit	See M.5
Action outline	Action name	M.9. Underground waste collection and separation of waste
	Action type	Technical, physical, social and systemic intervention

	Action description	Intensifying and Expanding Waste Management Initiatives: Enhanced Incentives and Sanctions for Source-Separated Waste Collection: Intensifying efforts to analyze and update the Waste Management Ordinance for Gabrovo, introducing stricter controls and sanctions for non-compliance with source separation requirements for household waste. This will include implementing a robust incentive system to reduce the "household waste fee" for those adhering to the Waste Management Act's source separation requirements. Expansion of Pilot Waste Management Projects: Broadening the scope of the pilot demonstration project in waste management to significantly improve Gabrovo Municipality's waste management practices. Key activities include: • Installing a vending deposit system in high-traffic public areas to facilitate the separation and recycling of plastic bottles and aluminum cans, rewarding users with reusable items. • Establishing shared composting sites at strategic locations such as schools, kindergartens, and community centers, and providing educational signage and video surveillance to support proper composting practices. Improvement and Expansion of the Waste Source Separation and Recycling System: Expanding efforts to improve the source separation and recycling of waste by: • Distributing biodegradable bags for kitchen and food waste. • Implementing both communal and individual containers for households. • Setting up separate collection systems for bio-waste from schools, commercial centers, and other establishments. • Providing free composting bins for home use and enhancing composting facilities to improve quality. • Researching and designing a comprehensive bio-waste separation system and constructing a dedicated sorting facility.

		Increasing Underground Waste Collection Capacity: Expanding the pilot project for underground waste collection in Gabrovo, which includes: • Constructing two new underground waste collection sites in central areas, equipped with access control systems, video surveillance, and sensors for monitoring fill levels and usage. • Installing portable weighing machines on collection vehicles to track waste amounts. • Enhancing the aesthetic integration of these sites with landscaping, park furniture, and solar systems. • Using a LoRa network for data collection and transmission to optimize waste management processes. These intensified and expanded activities aim to significantly advance Gabrovo's waste management capabilities, improve environmental outcomes, and set a benchmark for best practices in waste management.
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Advanced technologies and innovative solutions are promoted and used by the final users – citizens, business and institutions. Increased number of available solutions. Investment projects are developed by interested parties and initiated for further implementation. Improved local strategies and regulations. The implementation of CCC will influence the development of national legislation and regulatory frameworks.

		Workshops, training sessions, and information campaigns will be organized to enhance the capacity of all societal groups. Social innovations are being developed and are started to be implemented.
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality, Waste treatment plant, Municipal company of public works
	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	MOEW, Regional Inspectorate of Environment and Water, NAMRB, Local tax office, Local business, Citizens, Regional Inspectorate of education Gabrovo, Schools
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	-
	Removed/substituted energy, volume, or fuel type	-
	GHG emissions reduction estimate (total) per emission source sector	NE
	Total costs and costs by CO2eq unit	4 000 000 EUR
Action outline	Action name	M.10. Improvement of green infrastructure for climate adaptation

	Action type	Technical, physical, social and systemic intervention
	Action description	M.10 is related to improvement of green infrastructure through implementation of NBSs and projects for rainwater harvesting systems, EWMSs, urban infrastructure development for intensive expanding of green areas and other sustainability actions. Green Corridors and Eco-Trails: Expanding efforts to connect the city center with urban green spaces by developing green corridors, riverbanks, eco-trails, cycling routes, and other tourist pathways. Climate Control in Public Transport: Implementing climate control measures in public transport vehicles and creating a network of climate volunteers to support and advocate for climate adaptation initiatives. Urban Vegetation Management: Guidelines and Cataloging: Developing comprehensive guidelines for evaluating urban vegetation, identifying areas lacking long-lived tree vegetation, and cataloging existing urban tree vegetation. New Greening Projects: Planning and executing new greening projects to enhance urban landscapes. Tree Species and Irrigation: Creating a list of tree species suitable for Gabrovo's future climate conditions, implementing and automating supplemental irrigation systems for long-lived trees and green spaces, and establishing a rainwater harvesting system. Vertical and Roof Greening: Regulatory Development: Developing criteria for vertical and roof greening in alignment with municipal regulations and participating in a national initiative to protect old forests. Forest Ecosystem Monitoring: Establishing a system to collect data on forest ecosystems affected by natural disturbances and biomass loss, focusing on afforestation of

		unplanted areas, reforesting abandoned and erosion-prone lands, and maintaining protective forest belts through anti-erosion measures. Tree Care and Compensatory Greening: Maintenance and Regulations: Intensifying care and maintenance for long-lived tree vegetation in urban areas, establishing criteria for compensatory greening, and integrating these criteria into local regulations. Riverbed Restoration and Flood Management: Riverbed and Flood Registry: Expanding riverbed restoration and maintenance efforts, developing a plan to ensure riverbed conductivity, and creating a public flood registry for Gabrovo. Fire Protection and Early Warning Systems: Database and Protection Systems: Creating a comprehensive database to monitor fire incidents, implementing advanced fire protection systems in buildings and facilities, and establishing Early Warning Monitoring Systems. These expanded and intensified activities aim to significantly advance urban and environmental sustainability, enhancing the city's resilience to climate impacts and improving overall quality of life.
Reference to impact pathway	Field of action	Green infrastructure & nature-based solutions
	Systemic lever	#1, #2, #3, #4, #5
	Outcome (according to module B-1.1)	Advanced technologies and innovative solutions are promoted and used by the final users – citizens, business and institutions.
Implementation	Responsible bodies/person for implementation	Gabrovo Municipality

	Action scale & addressed entities	Municipal boundary
	Involved stakeholders	MOEW, Regional Directorate of the Ministry of Internal Affairs – Gabrovo, Local business, Regional Inspectorate of education Gabrovo, Schools, Technical University of Gabrovo, Regional Innovation Center "Ambitious Gabrovo", Citizens
	Comments on implementation – consider mentioning resources, timelines, milestones	2024-2030
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	-
	GHG emissions reduction estimate (total) per emission source sector	NE
	Total costs and costs by CO2eq unit	10 410 000 EUR

B-2.3: Summary strategy for residual emissions

The Residual emissions will be compensated through offsetting, as well as regular reviews of the planned actions and policies to ensure their impact is enhanced.
Municipalities can participate in offsetting through: purchasing carbon credits – financing projects for renewable energy, reforestation, waste management, or energy efficiency; developing local projects – investing in green infrastructure projects at the local level, such as reforestation, renewable energy, or energy efficiency programs; partnering with other organizations – collaborating with national or international offsetting programs.
Particular attention will be given to CO2 absorption by forests, which amounted to 41,088 tons of CO2 in 2018. It should be noted that the additional measures and policies in the waste sector have not yet been evaluated, which will also contribute to covering the Residual emissions.

3.3 Module B-3 Indicators for Monitoring, Evaluation and Learning

Table B-3.1: Impact Pathways					
Outcomes/ impacts addressed	Action	Indicator No.	Indicator name	Target values - 2030	Recent value
Increasing the share of RES, energy efficiency, transitioning from high-emission to low-emission fuels, constructing low-emission and zero-emission buildings and facilities, and reduction of the carbon footprint in the municipal, tertiary, and private sectors. Increasing the share of electric vehicles, development of infrastructure that will help to increase the share of electric vehicles, transitioning from high-emission to low-emission fuels, measures to increase the use of public transport. MSW reduction - increase the separate collection at source and share of underground waste collection, upgrading the system of separate collection and recovery of waste, increasing citizens' capacity for waste collection.	M.1 – M.3, M.8-M.10	1	GHG emissions reduction	58 506 t CO2eq	119 096 t CO2eq (2024)
Increasing the share of RES, energy efficiency, and reduction of the carbon footprint in the indusrty.	M.4	2	GHG emissions reduction per GVA	19 787 t CO2eq	43 533 t CO2eq (2024)
Increasing the share of electric vehicles; improving the air quality	M.5, M.6, M.7	3	Electric and hybrid cars (total share /new registrations)	Target value will be identified in the later steps of CCC process	0% (2020)

Table B-3.2: Indicator Metadata	
Indicator No.1	
Indicator Name	**GHG emissions reduction**
Indicator Unit	t CO2 eq
Definition	Amount of greenhouse gas emissions within city boundary
Calculation	Covenant of mayors GHG Inventory methodology
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it measure?	Energy systems & Built environment – Municipal buildings, Tertiary buildings, Residential buildings Mobility & transport Waste & circular economy
Does the indicator measure indirect impacts (i.e., co- benefits)?	no
If yes, which co-benefit does it measure?	na
Is the indicator useful for monitoring the output/impact of action(s)?	yes
If yes, which action and impact pathway is it relevant for?	M.1 – M.3, M.8-M.10
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	National Statistics, Energy audits, Invoices of energy consumption from municipal account office, Regional Directorate of the Ministry of Internal Affairs – Gabrovo, Local tax office, Energopro Gabrovo - electricity supplying company, Citygas, Municipal transport company, Waste treatment plant, Municipal company of public works
Is the data source local or regional/national?	regional/national
Expected availability	Good
Suggested collection interval	2 years
References	
Deliverables describing the indicator	GHG Inventory monitoring report
Other indicator systems using this indicator	This indicator is used as a part of the whole energy system monitoring and evaluation
Indicator No.2	
Indicator Name	**GHG emissions reduction per GVA**
Indicator Unit	t CO2 eq /GVA
Definition	Amount of greenhouse gas emissions within city boundary from industry per GVA
Calculation	Covenant of mayors GHG Inventory methodology
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it measure?	Energy systems & Built environment – – Industrial facilities

Does the indicator measure indirect impacts (i.e., co- benefits)?	no
If yes, which co-benefit does it measure?	na
Is the indicator useful for monitoring the output/impact of action(s)?	yes
If yes, which action and impact pathway is it relevant for?	M.4
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	National Statistics, Energopro Gabrovo - electricity supplying company, Citygas, Local tax office
Is the data source local or regional/national?	regional/national
Expected availability	Good
Suggested collection interval	2 years
References	
Deliverables describing the indicator	GHG Inventory monitoring report
Indicator No.3	
Indicator Name	**Electric and hybrid cars (total share /new registrations)**
Indicator Unit	Percentage (of all vehicles / new registrations)
Definition	Total share of electric and hybrid cars and share of new registrations of electric and hybrid cars compared to total registrations
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it measure?	Mobility & transport
Does the indicator measure indirect impacts (i.e., co- benefits)?	no
If yes, which co-benefit does it measure?	na
Is the indicator useful for monitoring the output/impact of action(s)?	yes
If yes, which action and impact pathway is it relevant for?	M.5, M.6, M.7
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Regional Directorate of the Ministry of Internal Affairs – Gabrovo, Local tax office, Gabrovo Municipality, Municipal transport company, Municipal company of public works
Is the data source local or regional/national?	regional/national
Expected availability	Good
Suggested collection interval	2 years
References	
Deliverables describing the indicator	GHG Inventory monitoring report

4 Part C – Enabling Climate Neutrality by 2030

Achieving Climate Neutrality by 2030 aims to detail the initiatives that the Municipality of Gabrovo has already implemented in terms of organizational, governance, and social innovation. This important event plays a crucial role in transforming commitments and portfolio actions into reality, thereby achieving climate neutrality by 2030. As of April 2024, the Municipality of Gabrovo has established a new Sustainable Development Directorate to lead the change as a representative of the municipal network.

Gabrovo, guided by the Climate City Contract (CCC), seeks to transform its approach by engaging with local, regional, and national stakeholders. The city's ambitious objective is to achieve climate neutrality by 2030. This collaborative effort aims to break down conventional silos and challenge business-as-usual practices.

The development of Gabrovo's 2030 Climate Neutrality Action Plan involved co-creation processes, engaging the mission of the Transition Team. The recently established transition team in Gabrovo has played an active role in preparing the Climate City Contract (CCC). This team's creation marks a significant shift, breaking down silos on both administrative and organizational levels within the municipality. As a newly established structure, the transition team fosters collaboration and innovative approaches toward achieving climate neutrality by 2030.

Gabrovo actively participates in European initiatives and holds distinguished membership in EU bodies related to governance and climate change. As part of the "Covenant of Mayors" initiative, Gabrovo commits to regular inventories of Greenhouse Gas (GHG) emissions, following the 2006 IPCC Guidelines. These inventories cover CO_2 and CH_4 emissions, with 2008 as the base year, and are conducted biennially across the entire administrative boundary of Gabrovo municipality. The strategic documents of Gabrovo, including the Sustainable Energy and Climate Action Plan (SECAP), play a crucial role in supporting the CCC 2030 Gabrovo Plan. Here's how they align and contribute:

The SECAP outlines specific actions to reduce CO2 eq emissions by at least 40% by 20301. This aligns with the CCC 2030 Gabrovo Plan's broader goals of achieving significant greenhouse gas reductions.

Both the SECAP and the CCC 2030 Plan adopt an integrated approach to climate change mitigation and adaptation. This means they not only focus on reducing emissions but also on enhancing the city's resilience to climate impacts.

The SECAP provides a framework for monitoring and implementing the outlined actions, ensuring that progress is tracked and adjustments are made as needed. This systematic approach supports the CCC 2030 Plan's objectives by ensuring accountability and continuous improvement.

Both plans emphasize the importance of engaging local communities and stakeholders in the planning and implementation process. This ensures that the actions taken are inclusive and have broad support, which is essential for long-term success.

Gabrovo effectively implements EU and national strategies, plans, and directives, which are integrated into the SECAP, SEAP, and other relevant strategic documents. These efforts support the CCC 2030 Gabrovo Plan, driving the city towards a more sustainable and resilient future. Gabrovo distinguishes itself among Bulgarian municipalities through proactive energy efficiency and smart city projects. Guided by its Integrated Development Plan 2027, SECAP 2030, SUMP 2030, and S3 2030, Gabrovo takes an integrated approach to sustainable development. The city embraces innovative solutions, adopts clean technologies, and collaborates with local businesses, academia, and civic sectors following the quadruple-helix principle. Gabrovo's vision revolves around being green, innovative, and smart, fostering sustainable economic growth and an environmentally conscious transition.

4.1 Module C-1 Governance Innovation Interventions

The governance participation of Gabrovo CCC is designed to be inclusive and transparent:

Gabrovo's CCC aims to foster collaboration and co-creation among stakeholders to achieve climate neutrality by 2030. A key principle of this plan is transparency and accountability, ensuring that decision-makers are held responsible for their actions and that these decisions are openly discussed and reported. To ensure transparency, the Municipality of Gabrovo will publicly share information about its climate actions, including decisions, implementation measures, and results. This will enable citizens and stakeholders to stay informed and contribute to the goal of climate neutrality. CCC plan emphasizes inclusivity and diversity, ensuring that all citizens, regardless of age, gender, education, place of residence, or socioeconomic status, have an opportunity to participate. The process will be designed to be accessible to all interested individuals, avoiding any form of discrimination or harassment

Gabrovo CCC's Co-Creative Process

Gabrovo's Co-Creative Process exemplifies the city's innovative approach to fostering collaboration and creativity within its vibrant landscape through the following activities:

- **Workshops and Brainstorming Sessions**: Regularly organized to gather ideas from diverse community members through events such as energy community, meetings of the private property owners, meetings of the Council for Sustainable urban development that comprises of various members of society – administrative bodies, academia, business, NGOs – RIC "Ambicious Gabrovo" is especially prominent for the city as it brings together academia, business and administration together to tackle and work on issues and projects.
- **Collaborative Projects**: continue project work that involves citizens, local organizations and municipal experts on projects pertaining to culture, sustainable governance, mobility and energy efficiency, also adapting to climate changes that has commenced last year for the municipality of Gabrovo. Projects that Gabrovois involed in like Amigos, Mount resilience, Soteria work with a broad stakeholder groups from the community comprising of members of – TU Gabrovo, RIC Ambitious Gabrovo, Regional governor's office, Energo pro- local energy supplier, VIK – local water management company, Fire department, Police department, MBAL Tota Venkova – regional hospital, National statistics institute, Municipal enterprise for public works, Insurance companies, Smart behavior – specializing in human behavior and change, and others.
- **Feedback Mechanisms**: Continuous collection of feedback through surveys, public forums, and social media that has been an ongoing practice for Municipality of Gabrovo. Apart from the websites for events that take place – chistogarovo.bg; uzana polyanafest; radio programmes, FB page, Gabrovo has created a new platform dedicated specifically for projects on climate change and adapting to it. It is called FORUM. It is expected to be launched in the fall 2024.

Engaging Citizens

Engaging the community is a cornerstone of the CCC's mission. This is achieved through:

- **Public Events**: Gabrovo is hosting a variety of events such as festivals, concerts, and art exhibitions that are open to all throughout the year. There are seasonal festivals that take place

during the year, but also a diverse array of artists that participate in the cultural life of the city – from classical and modern music through theater, exhibitions and festivals.

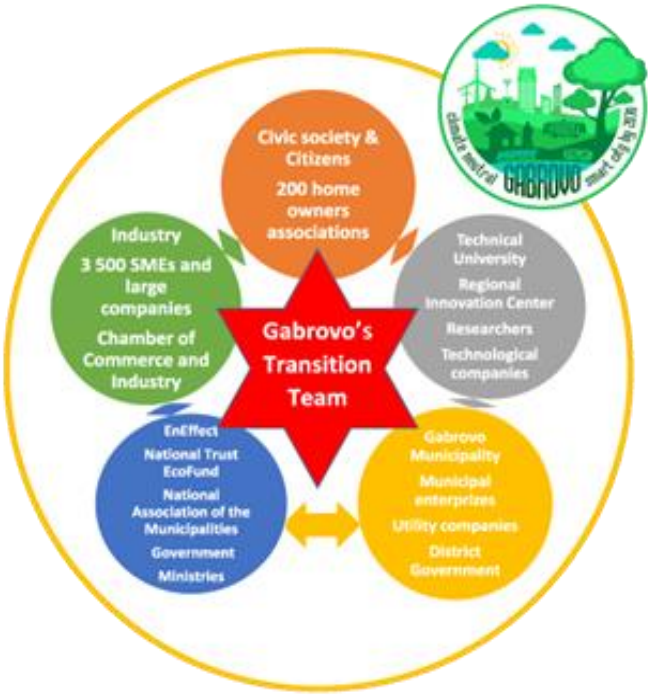
- **Educational Programs**: Gabrovo offers a number of workshops, classes, and lectures that cater to different age groups and interests pertaining to health, mobility, energy systems, urban development and ecology. A number of these programs take place in the public, however there are those that cater specifically for children
- **Volunteer Opportunities**: Encouraging citizens to participate in the CCC's activities by volunteering, which fosters a sense of ownership and involvement.

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

Gabrovo's Climate city contract (CCC) is committed to fostering an inclusive and transparent governance model. The city's Climate Action Plan aims to collaborate with diverse stakeholders to achieve carbon neutrality by 2030. Transparency and accountability are core principles, ensuring that decision-makers are held responsible for their actions and that decisions are publicly discussed and reported. Gabrovo is focused on five main domains of climate change as already shown above:

1. Energy Systems and Built Environment
2. Mobility and Transport
3. Waste and Circular Economy
4. Green Infrastructure& Nature base solutions

Each of these domains will be led by a designated expert representative, who will oversee their domain team on issues specific to their area of expertise and relevant stakeholders. These representatives will be responsible for organizing and implementing initiatives within their respective domains, while also maintaining regular communication with the Council for Sustainable Urban Development and the Directorate for Sustainable Development. Each domain plays a vital role in Gabrovo's sustainable transformation and contributes to its specific goals.



Each domain will collaborate with relevant stakeholders to address specific issues and implement initiatives. These (micro) teams are accountable to the Council for Sustainable Urban Development and in communication with the Secretariat of Gabrovo's Transition team. (See page 11)

To ensure transparency, the Municipality of Gabrovo publicly shares information about its climate actions, including decisions, measures, and results. This allows citizens and stakeholders to stay informed and contribute to the goal of carbon neutrality.

Gabrovo's CCC emphasizes on inclusivity and diversity, ensuring that all citizens, regardless of age, gender, education, place of residence, or socioeconomic status, have an opportunity to participate.

The process aims to be accessible to all interested individuals, avoiding any form of discrimination or harassment. Gabrovo has a long history of involving citizens in the process of shaping their community. This tradition of citizen participation is essential for achieving climate neutrality by 2030.

Social responsibility and inclusion is of paramount importance for reaching our climate goals. Gabrovo Municipality has a long history of citizens' engagement and thus continues to work on projects while

seeking active citizen involvement, working collaboratively with local stakeholders to create systemic change.

The Municipality of Gabrovo is actively working to empower its citizens and foster a sense of belonging and responsibility for climate-related issues. They have established several points of contact between citizens and local government actors, including, but not limited to the following parties:

- **District Information Point**: A one-stop shop for information and assistance.
- **RIC Ambitious Gabrovo**: A resource centre for climate initiatives and smart specialization.
- **Monthly Vending Machine Events**: Regular events to engage the community.
- **Planned and Ad Hoc Meetings**: Opportunities for open dialogue and collaboration on everyday climate-related issues, such as waste disposal.
- **Open door policy** - Additionally, Gabrovo has an open-door policy, allowing citizens to call, visit, or receive advice on their issues via phone or personal visits to the municipality. Citizens can also book meetings with the mayor during regular open days.

This proactive approach aims to create a collaborative environment where citizens feel involved and responsible for addressing climate challenges in their community.

The processes of informing, monitoring and joint learning are crucial to ensure that climate actions are on track. However, this can be challenging due to the diverse range of stakeholders involved and the focus on individual and corporate actions. To address these challenges, the municipality will prioritize inclusivity in citizen participation measures, ensuring that underrepresented groups, including those from different age, gender, ethnic, religious, and minority backgrounds, are represented.

Joint learning provides a valuable platform for sharing knowledge and experiences among stakeholders and the community. By integrating a citizen-centered approach in the already established bureaucratic one, Gabrovo aims to set a new and innovative way for citizens inclusion in the decision making. As clarified in the action plan, the decision making process for municipality of Gabrovo is oftentimes burdensome as it involves approval by the city council. Any decision that pertains to a new activity, project and or practice, and financing has to go through the city council's approval.

Gabrovo's City Council is responsible for a wide range of activities that shape the community, namely:

- **Urban Development:** They oversee the planning and development of infrastructure projects, including roads, public buildings, and parks.
- **Public Services:** This includes waste management, water supply, and public transportation.
- **Education and Culture:** They support local schools, libraries, and cultural institutions, organizing events and programs to enrich community life.
- **Economic Development:** The council works to attract businesses and investments to the area, fostering economic growth and job creation.
- **Environmental Initiatives:** They implement policies and projects aimed at sustainability and environmental protection.

For the Gabrovo CCC and its strategic implementation an array of various stakeholders from municipality – administrative and other departments, the Council for sustainable urban development, actors from municipal enterprises will be involved. But also service staff, including transport, waste management actors, universities, schools, national actors, and the industrial sector, will be involved in the process. Given the significant contributions of the transport, mobility, and industrial sectors to Gabrovo's emissions, the city will prioritize their involvement in assessing and implementing measures

to bridge the gap towards climate neutrality. Technical meetings with sector leaders and dynamic sessions will be held to explore innovative approaches and inspire systemic, demand-driven actions.

By adopting a collaborative and inclusive approach, Gabrovo aims to create a sustainable and resilient future for its citizens and communities.

Being one of the most proactive Bulgarian municipalities, Gabrovo also strongly relies on the good cooperation with different levels of governance, including regional, national and European. National level policies and actions support capital allocation towards net zero also in the cities, but the long political crisis became the main barrier to access the available funding on time and to implement the planned activities and projects.
Citizen involvement is crucial for the achievement of the CCC goals. Engaging residents directly in different activities, including design and implementation, guarantees their active participation in the initiatives. Through these strategies of citizen engagement, the objective is to provide meaningful opportunities for residents to connect with the narrative and purpose of the CCC actions, in order to enhance the collective understanding, enable co-creation process, stimulate ownership of the Gabrovo climate policies, and incentivize local investments within a citizens engagement strategy will be developed under NetZero Hero project. The strategy for citizen participation will include several important components: Community surveys; Co-creation workshops; Pilot Projects and Demonstrations; Capacity Building and Training for citizens; and Community Outreach and Awareness Campaign.
Gabrovo is committed to achieving climate neutrality by leveraging the expertise and tools provided by administrative, financial, citizen, and academic institutions. By working closely with all citizens, Gabrovo ensures that its efforts align with the city's vision of being clean, green, smart, and sustainable, while adhering to the principle of "no one is left behind."

Gabrovo will prioritize citizens' involvement in assessing and implementing measures to bridge the gap towards climate neutrality. Technical meetings and dynamic sessions will be held to explore innovative approaches and inspire systemic, demand-driven actions.
By adopting a collaborative and inclusive approach, Gabrovo aims to create a sustainable and resilient future for its citizens and communities.

Participatory innovation model for Gabrovo

Gabrovo's Climate City Contract embodies a pioneering approach to urban climate governance, driven by a shared vision for achieving climate neutrality by 2030. This vision is supported by a comprehensive strategy that delineates the pathways to reach this ambitious goal. Emphasizing the importance of co-creation and collaborative leadership, the contract engages all stakeholders on local, regional and national level comprising of representatives of the quadruple helix and fosters continuous learning from the process that is led by the Council for sustainable urban development. The execution of Gabrovo's CCC is spearheaded by the city administration, which actively involves multiple stakeholders at various governance levels. This includes local government, businesses, academia, and civil society. By fostering a collaborative leadership approach, the city ensures that diverse perspectives and expertise are integrated into the decision-making process, enhancing the effectiveness and inclusivity of climate actions. Through this inclusive and adaptive approach, Gabrovo is well-positioned to attain its climate neutrality objectives and serve as an exemple for other cities.

However to accurately depict the reality of Gabrovo in terms of public works, decision-making, governance, and authority, it is essential to clarify the following:

- Any financial or significant decision concerning the city of Gabrovo must receive mandatory approval from the City Council, covering both budgetary and decision-making aspects. Additionally, all procedures related to these decisions must comply with public procurement regulations, ensuring transparency, fairness, and adherence to legal standards. This process can sometimes require technical time to pass the vote and come into effect.
- Despite the constraints of a limited municipal budget and various challenges Gabrovo faces in terms of centralised budget and governmental beaurocratic deays, Gabrovo has managed to secure a high percentage of European and national funds for its projects. In comparison to other Bulgarian municipalities, Gabrovo has also provided a significant rate of co-funding from the municipal budget to continue its improvements in all sectors, as mentioned in the Gabrovo CCC AP.

Gabrovo is committed to achieving climate neutrality and has implemented a comprehensive action plan. To ensure the success of this ambitious goal, the city has adopted several key strategies

- **Transparency and Accountability:** To ensure transparency and accountability in the implementation of the CCC, Gabrovo has established regular monitoring and reporting mechanisms. These mechanisms provide stakeholders and the public with timely updates on the progress of climate initiatives, fostering trust and ensuring that the city remains accountable to its commitments.
- **Stakeholder Engagement:** The co-creation process of the CCC involves active participation from all relevant stakeholders. This engagement ensures that the diverse perspectives and expertise of local government, businesses, academia, and civil society are integrated into the CCC. By involving stakeholders in the planning and execution phases, Gabrovo enhances the relevance and acceptance of its climate policies.
- **Citizens' Involvement:** Citizens play a crucial role in the co-creation process of the CCC. They contribute ideas, feedback, and support for climate actions through public consultations and participatory workshops, studies and activities. This inclusive approach ensures that the voices of the community are heard and considered, fostering a sense of ownership and commitment to the city's climate goals.
- **Iterative Learning:** The CCC is designed as a living document that evolves based on continuous learning and feedback from stakeholders. This iterative process will allow Gabrovo to identify and address obstacles, ensuring that the CCC remains relevant and effective over time. By embracing a culture of continuous improvement, the city can adapt to new challenges and opportunities in its pursuit of climate neutrality.

C.1.2: Relations between governance innovations, systems, and impact pathways					
Intervention name	**Description**	**Responsible**	**Leadership and stakeholders involved**	**Enabling impact**	**Co-benefits**
Organizational change & restructuring of municipality of Gabrovo	To establish an efficient and well-functioning new structure with specialized knowledge and targeted roles in project development, stakeholder engagement, and climate change management for Gabrovo, it was essential to undertake organizational restructuring or modify the existing setup at the municipality.	Gabrovo Council for sustainable and urban development /Transition team	Municipality of Gabrovo All departments	**Enhancing Efficiency:** Streamlining processes and roles ensures that resources are used more effectively, reducing waste and improving overall productivity. **Expert Knowledge:** Bringing in specialized knowledge helps in making informed decisions and implementing best practices in climate action. **Focused Assignments:** Targeted roles in project development and stakeholder engagement ensure that efforts are concentrated on key areas, leading to more impactful outcomes. **Improved Management:** Better management of the climate change	Efficiency Knowledge Innovation Capacity building

				process ensures that initiatives are well-coordinated and aligned with the overall goal of achieving climate neutrality by 2030.	
Stakeholder engagement	Citizen meetings where the city plan is presented, explained and discused	Municipality of Gabrovo and Transition team Gabrovo Council for sustainable and urban development	Citizens & other stakeholders	Supporting the Implementation of cc plan	Social inclusion, improved wellbeing
Circular Economy Green Deal	The Circular Economy Green Deal accelerates society's shift towards a circular economy. It outlines essential measures to foster a low-carbon circular economy through shared frameworks, criteria, and commitments. This initiative is being developed through multilevel collaboration and will be grounded in scientific scenarios that are unparalleled in scope and coverage. The	Ministry of environment and water Regional office of MOEW	Citizens Business Academia NGOs Schools &kindergartens	Identify shared objectives, unified regulations, common standards as follows: Resource-efficient buildings Recycling& waste management Resource-efficient production and material circulation Sustainable consumption, business, and sharing economy	Entrepreneurial opportunities for small and medium-sized enterprises (SMEs) possibly. Efficient use of resources Decreased reliance on new raw materials; Sustainable and resilient lifestyle Collective awareness of challenges and opportunities

	Municipality of Gabrovo is one of 76 participants involved in the formulation of joint actions and scenarios. Implementation is set to commence in 2024.			Resource-efficient energy production Revitalizing food supply chains	
Cities for Sustainability Governance (CSG) Network (Urbact)	A network of 9 European cities, that are striving to better integrate and mainstream the comprehensive sustainability framework of the UN's Agenda 2030 and its 17 Sustainable Development Goals into urban initiatives.	Lead partner – Espoo Gabrovo – Sustainable development directorate Gabrovo ULG group Gabrovo Council for sustainable and urban development	Gabrovo Municipality' administration, citizens, ULG group, academia	Enhances the ability of city organizations and stakeholders to consider sustainability in a comprehensive and integrated way. Facilitates the incorporation of sustainability into the city's structures, processes, work culture, and mindsets.	Empowered individuals are inspired to make their work more sustainable. There is a growing awareness of the additional benefits of climate action within the city organization.
Creation of a digital Platform – "Forum"	Engagement, transparency, and accountability	Gabrovo Municipality	Gabrovo Municipality Citizens Other stakeholders	Develop and implement an online platform for communication between the municipality and its citizens. The platform aims to consolidate data collection and analysis, enhancing the sense of belonging and social inclusion by centralizing information that is	Transparency Social innovation Social inclusion Behavior change

				currently dispersed across various platforms. It can be incorporated into the website of the Gabrovo Climate Pact. The platform is designed not only to gather data but also to transparently share all developments and results of actions under the CCC. This will allow citizens to monitor progress and hold the municipality accountable for its advancements towards climate goals.	
Energy community Gabrovo	The Energy Community RDNO - Gabrovo (EC RDNO - Gabrovo) is an innovative initiative by the Municipality of Gabrovo aimed at addressing challenges in the energy market. The Municipality of Gabrovo and the community participants are using their resources, finances, land, knowledge, and energy to jointly create a	The Energy Community RDNO - Gabrovo (EC RDNO - Gabrovo) Municipality of Gabrovo	The Energy Community RDNO - Gabrovo (EC RDNO - Gabrovo) Municipality of Gabrovo Citizens Stakeholders	The pilot project envisions the construction of a renewable energy source to produce 100 kWh of electrical energy, with an investment cost of just under 160,000 BGN. The designated site for the investment is the Regional Non-Hazardous Waste Landfill of the	Community Inclusion Common goal and decision making Social responsibility Innovation Behavioural change

	source of their own energy.			Municipality of Gabrovo., chosen due to its exceptionally sunny location, lack of shading, the presence of a relatively constant energy consumer, and other factors important for the success of the initiative.	
Coordination and management of operations	Involvement, openness, and responsibility	Gabrovo Council for sustainable and urban development Municipality of Gabrovo and transition team	Municipality of Gabrovo Citizens Business	Involves the operational management of the CCC, including risk and quality assessments. Gabrovo already has a dedicated core team for the NZC Mission (the Transition Team) and a Committee For sustainable development in place.	Sectoral collaboration Innovation Social inclusion Data analysis and behavioural change
Green infrastructure strategy 2030 – Gabrovo Mountresilience project Horizon Europe	Achieving sustainable functional integration of natural and planned elements of the green system in the urban environment, ensuring that the green infrastructure provides multiple benefits for	Municipality of Gabrovo Municipal enterprise public works	Municipal enterprise public works Municipality of Gabrovo Regional Innovation Center	The development of green infrastructure will connect existing natural areas and support the maintenance of healthy, functioning, and sustainable urban ecosystems, thereby contributing to the	Improved urban areas Better quality of life

	people and continuously improves the quality of life, while preserving and enhancing the advantages of the natural environment.		Technical University of Gabrovo	improvement of the quality of the urban environment. The construction of high-quality green infrastructure is achievable only through an integrated approach to urban development and spatial planning.	
Ongoing impact assessment and quality enhancement	Involvement, openness, and responsibility	Municipality of Gabrovo Gabrovo Council for sustainable and urban development	Municipality of Gabrovo Citizens Academia Committee for sustainable development Directorate for Sustainable development at municipality of Gabrovo	Ensures ongoing evaluation of the impact of CCC actions, encompassing training, communication, dissemination, information, and engagement activities across various stakeholder groups. Facilitates data-driven decision-making.	Sectoral collaboration Innovation Social inclusion Data analysis and behavioural change

C-1.2: Description of organisation and governance interventions

The Municipality of Gabrovo has a strong commitment to achieve efficacy and cohesion within its departments and new structure, enabling the formulation of projects that link different divisions and disciplines. The Transition Team formed for the mission "100 climate-neutral and smart cities by 2030" is an example of this. It includes members from various department across all levels of expertise of the city administration, as well as from the transport and mobility, environmental and circular economy, intelligent systems, and the economic and territory development.

The team also comprises of members from NGOs, business, municipal and local enterprises.

Some of the stakeholders in this huge undertaking are longstanding partners of the municipality on projects that are focused on climate change, environmental education, and biodiversity, smart systems.

The Municipality of Gabrovo has set targets to improve the effectiveness and efficiency of multilevel governance for climate neutrality by maintaining and implementing action plans at the local level that are aligned with national and EU decarbonisation targets. Gabrovo will continue to engage in European and national networks (e.g Energicities, Civitas, URBACT, Netzerocities) to share best practices and knowledge. Regular dialogue with national and EU decision-makers will ensure that community needs and perspectives are considered in high-level decision-making processes.

The governance measures outlined in the 2030 Climate Neutrality Action Plan include the governance initiatives from the NZC Pilot Cities Programme (NETZEROHERO) and the successful initiative set to be implemented in the municipality of Gabrovo that have demonstrated their positive impact on the local community from September 2024 onwards.

4.2 Module C-2 Social Innovation Interventions

C.2. Relations between social innovations, systems, and impact pathways

Table C.2.1: Relations between social innovations, systems, and impact pathways

Intervention name	Description	Responsible entity/ dept./ person	Involved stakeholder	Enabling impact	Co-benefits
Energy Community Gabrovo – RDNO(EO Gabrovo RDNO)	The pilot project envisions the construction of a renewable energy source to produce 100 kWh of electrical energy, with an investment cost of just under 160,000 BGN.	Energy community	Energy community Municipality of Gabrovo Citizens Stakeholders	Innovation Energy benefits through RES Decentralized way to empower citizens and create civic society	Inclusion Innovation Commoradery Transparency Shift in behavior and attitude
Forum – platform	Platform – informing, connecting and educating	Municipality of Gabrovo	Administration at municipality of Gabrovo Stakeholders,	A series of videos, interviews podcasts, articles to	Informed decision facilitation Information dessimination

	users about climate change, Gabrovo's achievements		Citizens, Schools	address problems and solutions for climate neutrality and improving quality of life.	Transparency Empowerment Inclusivity
Netzerohero pilot project	Creating a NETZERO zone in Gabrovo to be replicated by other towns and regions	Gabrovo municipality EnEffect Sofia	Citizens, Schools, resindetial home owners, shop owners Banks Other stakeholders	These experiences will provide insights into the territory evolution and highlight its positive changes that come with introducing new technology and renovation in the zone.	Information dissemination Replication Inclusivity Enhanced awareness of climate issues and enhanced participation of citizens and comm unities.
Citizens engagement, social and cultural events	Alterations in societal behavior, governance, and assistance.	Municipality of Gabrovo Partners and other stakeholders	Citizens Volunteers Partnering organizations Other stakeholders Gabrovo Council for sustainable and urban development	Ensure that all events, regardless of their direct connection to climate awareness, adhere to climate neutrality principles. This means that climate neutrality plans will be mandatory for all events and must encompass the entire event lifecycle, including preparation, execution, and post-event activities. Data on energy consumption, energy sources, waste generation and management, and other relevant metrics will be collected to support the effectiveness of these measures.	Social responsibility Ecological mindset enabling Change of attitude and behavior Inclusion Social change Sectoral collaboration Economic collaboration and connectivity with local and national entities

Change in social behavior	Our vision for Gabrovo 2030 emphasizes fostering environmental consciousness among children and young people through extended comprehensive education that is already taking place in Gabrovo's schools on waste management and the circular economy.	Transition team of Gabrovo Partners and other stakeholders Gabrovo Council for sustainable and urban development	Schools Children Parents All citizens Volunteers Partnering organizations Other stakeholders	Waste Management Education: Implementing programs that teach children about waste reduction and innovative recycling methods. Engaging students in hands-on activities to understand the importance of proper waste management. Circular Economy Awareness: Expanding our educational efforts to include lessons on the principles of the circular economy. Encouraging sustainable consumption habits and the reuse of materials from an early age. School Engagement: Extending our collaboration with schools to reach more students and deepen the impact of our programs. Developing and distributing Sustainable Development Goal (SDG) cards, inspired by the successful model used in Espoo, to facilitate interactive and impactful learning experiences.	Social inclusion Inoovation in attitude Social change Fostering civic responsibility and togetherness

C-2.2: Description of social innovation interventions

Gabrovo's 2030 plan is aligned with EU and national plans, strategies, and programmes for climate neutrality. It also incorporates all strategic documents of the Municipality of Gabrovo, ensuring a comprehensive and cohesive approach to achieving climate neutrality by 2030. Citizen participation is a critical component of Gabrovo´s climate agenda. Collaboration with various levels of government, citizens, and different stakeholders will be critical for accelerating the transition to climate neutrality by 2030.

The National Action Plan for Climate Change Adaptation serves as a reference document, determining key guidelines for climate change adaptation actions in several key areas. The plan also contains an evaluation of 55 risks and vulnerabilities across 9 different sectors. The "Integrated Energy and Climate Plan of the Republic of Bulgaria" sets priorities for energy sector development and climate change mitigation. The plan's general objectives are to stimulate the development of a low-carbon emission and sustainable economy, achieve national energy independence, decrease fossil fuel imports, and ensure affordable energy. The plan sets two key national targets for the year 2030: a minimum of 28% of all electricity consumption in the country to come from renewable energy sources and a minimum of 32% overall energy consumption decrease.

The "National Long-Term Strategy for Building Renovation 2050" and the "National Plan for Nearly Zero Energy Buildings" set the target for all new buildings and renovated existing ones to become nearly zero energy. All key measures and actions in the Sustainable Energy and Climate Action Plan (SECAP) relevant to this sector are in correspondence with this plan. The "National Recovery and Resilience Plan" will be an important strategic document setting objectives for a low-carbon economy, biodiversity conservation, sustainable agriculture, and measures such as establishing a National Decarbonisation Fund and assessing energy poverty.

The municipality has been using diverse methods for raising awareness and improving the level of citizen engagement: a one-stop-shop for energy advisory; organizing annual campaigns (spring clean ups, waste collection for raising funds for charity, Eco festival 'Uzana Polyana Fest, Earth Day and Environment Day), ad-hoc events and initiatives, using different communication channels (manuals, online platforms, radio broadcasts about Ecology, games, competitions, discussions, forums etc.).

Gabrovo has numerous initiatives targeting the youth (educational campaigns on waste in schools, thematic theatre plays for children about waste).

The online platform **chisto.gabrovo.bg** provides thorough and regularly updated information about the waste separation, collection and management and greening activities of the municipality. Green.gabrovo.bg provides real-time monitoring of air and water quality.

The museum House of Humour and Satire is an important partner in the process of citizen engagement on the topic of sustainability. It regularly organizes different art and cultural events (City Garden installation for children, 'Art at the landfill') in collaboration with the Regional Waste management site, portraying waste as a valuable resource.The continuation and broadening of all those actions is crucial for Gabrovo's transition to climate neutrality and they can also serve as good examples for other cities.

The most important initiatives related to citizens' engagement are the following but not limited to:

Multi-family buildings' retrofitting

Gabrovo Municipality has extensive experience in collaborating with citizens on retrofitting multi-family buildings since 2016. Between 2016 and 2018, Gabrovo Municipality actively participated in the National Program for Energy Efficiency in multifamily buildings. As a result, 37 multi-family buildings were retrofitted, amounting to €19,940,000 (100% grant). A total of 242 buildings were included in the program for renovation. Implementing energy efficiency measures in all residential buildings is a crucial step towards decarbonisation and will also help reduce energy poverty.

In 2023, the Bulgarian Recovery and Resilience Plan provided another opportunity for retrofitting multi-family buildings. Gabrovo Municipality prepared 200 multi-family buildings to apply, with 100 effectively applying and 24 being approved for funding.

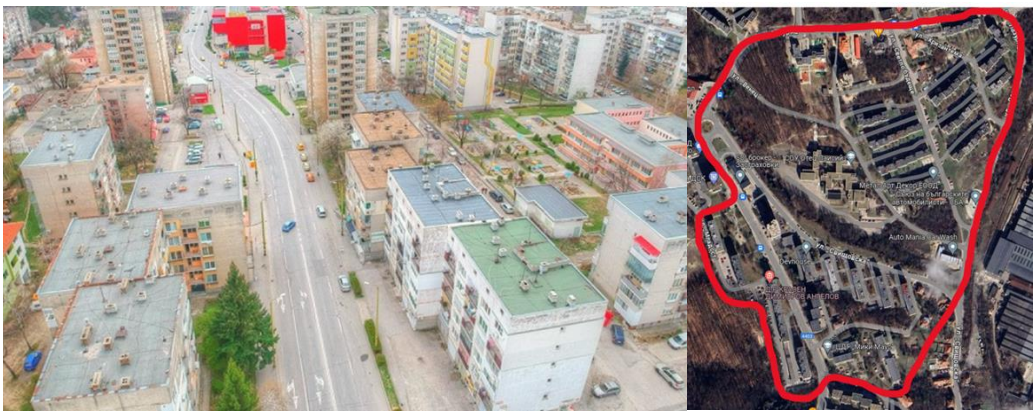
Citizen engagement was the most important factor for success. To support citizen participation, the Gabrovo Municipality team sent invitations to the managers (representatives) of the associations of owners of independent units in the condominium regime. Meetings were held at the Municipality of Gabrovo building with several representatives from the respective buildings. This approach aimed to limit large gatherings while avoiding unnecessary conflicts.

To avoid pushing people away due to a lack of clarity, Gabrovo Municipality began with larger buildings, giving them more time to prepare and discuss the new, albeit still unclear, conditions. During the meetings, contacts of municipal administration employees and more active owners (regardless of their role in building management) were exchanged to act as mediators. This led to the creation of a contact list of emails, to which additional information regarding the possibilities and administrative procedures for preparation was sent.

The information provided aimed to prepare the associations so they would be ready and, in the absence of building selection criteria, be among the first to open a measure. Briefly, the information covered eligible buildings, application conditions (such as the availability of a Technical Passport, a technical survey, and an Energy Efficiency Audit), the limited resources from the Bulgarian Recovery and Resilience Plan, and the understanding that not all waiting buildings would be rehabilitated, nor were they preferred. Information was also provided about the essence of the mentioned documents and the process of their preparation.

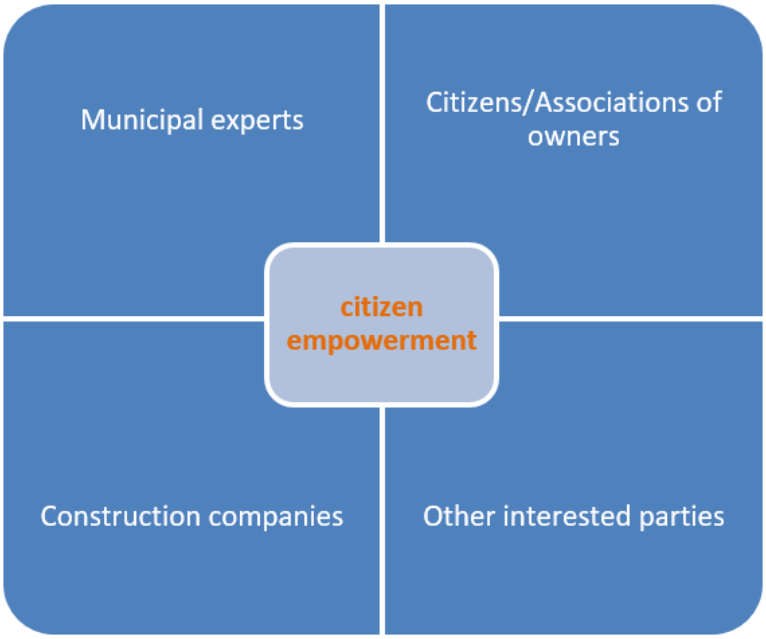
As a result of these meetings, a community was built between the citizens and the administration, facilitating subsequent communication on energy efficiency and other topics such as energy communities, renewable energy sources, and opportunities to participate in various projects and initiatives with the support of the Municipality of Gabrovo or other interested parties.

The identified obstacles to the associations are the permanent absence of owners and uninhabited objects in the buildings, and the neighbors have no contacts, which is an obstacle in the convening and holding of the meetings (quorum and majority), as well as subsequently in the implementation of the activities themselves.



A model study of a neighborhood done by project outPHit in Gabrovo.

THE MODEL



The main goal of Gabrovo CCC AP is to establish tools and framework to build stakeholder capacity, promote collaboration, tailor approaches to local contexts and monitor progress for effective dissemination and replication.

Energy communities - new models for public-private partnership between local authorities and citizens

The main goal of Gabrovo CCC AP is to establish tools and framework to build stakeholder capacity, promote collaboration, tailor approaches to local contexts and monitor progress for effective dissemination and replication.

Energy communities - new models for public-private partnership between local authorities and citizens

In the implementation of the initiative to create an energy community, the municipality of Gabrovo follows its established model in conducting a campaign to engage citizens as follows:

During the introductory/initial presentation of the initiative, in order to reach a wide range of interested persons, various mass communication channels are used, through which the information about the respective initiative is provided in a synthesized and conceptual way already at the stage of its development. **In the *energy community project*,** months before the decision was made to issue a call to citizens, the National Radio, a podcast in the "CAPITAL" media, inclusions in the local radio and publications in various media were used to inform the citizens. In this way, a wide range of people is reached, the problems, the idea and the vision for the future implementation of a specific project or initiative are presented to them.

Passing through this stage allows the inclusion of persons with knowledge and interest in the field to contribute to the realization of the project through direct participation with ideas, experience and knowledge, as well as through its dissemination. **In the specific case**, after mass awareness, non-governmental organizations, technical persons who, through their questions and expressed opinions, contribute to the development of the project. It also prepares both those who want to get involved as participants in the energy community and the business to meet the needs for the implementation of the initiative.

The next level of engagement is when shaping a concrete concept and reaching an administrative, technical and financial level of readiness to share it with a smaller circle of interested persons. The process becomes more dialogic by organizing meetings with citizens, which are again aimed at reaching a wide range of interested persons, but already answering specific questions. At this stage, instruments like conferences, workshops, meetings, discussions and others are used. The use of online communication tools helps to reach a wider range of people. The main task at this stage is to finalize the concept, to give the project its final form, but also to reach the persons who would actually participate in the implementation of the initiative.

After the project is in the final stage, direct involvement of the citizens is started, by providing opportunities for direct communication - face to face, with the relevant experts, both through the

existing one-stop-shop and through direct communication by phone, e-mails and others directly with the responsible experts.
At this stage, binding contracts, commitments and other - in the specific case - contract for participation in the energy community are also signed.
After the implementation of the project/initiative, communication regarding the specific project takes place in a relatively closed circle - between the participants. But instead, in order to replicate the project and upgrade it, the results of it are communicated to the rest of the citizens. In this way, commitment and readiness is achieved when identifying an opportunity for the next initiative.

"Days of Intelligent Energy"- is an event and an informational platform carried out for several years in Gabrovo municipality. Its goal was to engage and educate citizens about the positive impacts and importance of implementing energy efficiency solutions for the environment and for their everyday lives. The platform also had a strong focus on students and children of all ages. It also gave the municipality the opportunity to showcase its latest energy efficiency projects to citizens.

An association of local businesses established the Regional Innovation Centre "Ambitious Gabrovo" with the goal to develop and maintain a sustainable and evolving innovation ecosystem with a focus on digitalization, Industry 4.0 and the circular economy, thus strengthening the competitiveness of companies in the region, creating, and supporting talent. Four main directions will be developed – talent incubator, automation systems, technologies and circular economy.
The municipality became an active partner with TU Gabrovo, the Bulgarian Academy of Sciences and the Centre for energy efficiency 'Eneffect' for EE research and solution implementation.
Gabrovo is a partner in numerous R&I projects under different programmes (e.g. Horizon 2020 Programme).
One of the projects - Science with and for Society (2018-2020), TeRRItoria (Territorial Responsible Research and Innovation) focuses on strengthening the collaboration between TU Gabrovo and the local business.
Under OP "Science and Education for Smart Growth" in TU Gabrovo Centre for Competences "Intelligent Mechatronic, Eco and Energy saving systems" has been established. The Centre comprises 4 laboratories equipped with modern science infrastructure with high-tech equipment. The equipment will be used for applied science studies in the field of mechatronics and clean technologies, as well as education. The facilities will be accessible for the business organisations and part of them will be accredited.

Waste& circular economy

It is important to note that underground waste facilities were first introduced in Gabrovo in 2019 for residential buildings, and this trend has been gradually expanding to other areas of the city. In 2020 textile and leather waste material bins were positioned in a few places in Gabrovo. In 2022, a new set of underground waste facilities was introduced as a pilot project for smart underground containers for household waste in the central part of the city.This project was introduced to a residential area in Gabrovo where each family had an individual access to the waste facility. The facilities were equipped with access control systems, video surveillance and a network of smart sensors which will provide occupancy levels, frequency of use and number of services statistics compiled by the smart sensor based

programme 'LoRanetwork'. The project was the first step towards the introduction of smart underground waste collection in the municipality. Also in 2022 a pilot demonstration project for a deposit vending system for plastic bottles and aluminum cans was launched in Gabrovo. The project aimes to increase the amount of collected clean recyclable material and to encourage citizens to undertake further efforts for waste separation. In return for the deposited bottles and cans, citizens received eco-friendly gifts and a number of incentives, incluiding food vouchers, monthly transport card, and other items or services. The project proved to be a success in our community so far.

Additionally in 2017 Gabrovo launched an initiative for separate collection ***of biodegradable waste*** from restaurants and shops by providing individual containers and using the waste for compost creation. The system has expanded and now more and more restaurant and shop owners express their interest in the initiative. The current capacity of the specific waste collection infrastructure for biodegradable waste is not sufficient to cover all of the sites but additional investment could allow for a scale up.

One of Gabrovo's main projects is the creation of the carbon neutral industrial zone in the Northern industrial zone through the implementation of PPPs between all companies in the area and the municipality (a feasibility study under the EUCF initiative to evaluate the RE production potential of the rooftops of factories is underway).The Green Accelerator initiative aims to support green business and innovation. Gabrovo works with businesses for the separate collection of green waste and produces compost for local farmers. It also engages with local companies for environmental awareness-raising campaigns and capacity building.

4.3 Module C-3 Financing of Action Portfolio

Field/Sector	Capex, mio EURO	%	CO_2eq reduction, tons	Comment	Indicator for non energy benefits
Energy Systems & Built environment	***27.1***	***53%***	***38 747***		
Public buildings	10.0	19%	1 064	EE and RES in municipal buildings	air quality monitoring data # of users and visitors getting better comfort and services
Tertiary (non-municipal) buildings	2.1	4%	1565	EE and RES in tertiary buildings	air quality monitoring data # of users and visitors getting better comfort and services
Residential buildings	15.0	29%	13255	EE and RES in multifamily residential buildings	# of households
Industrial facilities and systems	0.1	0%	22 863	Carbon footprint of industry	CO2eq/GVA
Mobility and transport	***10.0***	***19%***	***35 466***		
Replacement of public transport fleet	7.0	14%	445	Replacement of the public transport fleet with electric and CNG (compressed natural gas) vehicles	air quality monitoring data # of passengers in public transport
Replacement of municipal fleet	0.5	1%	767	Purchasing of electric vehicles	air quality monitoring data % of electric vehicles in municipal fleet
Sustainable mobility	2.5	5%	Included below	Developed new cycling infrastructure, integrated in road infrastructure, traffic reorganisation and optimization	air quality monitoring data km new cycling infrastructure
Private transport	0.0	0%	34 254	Gradual replacement of private vehicles, reduction of emissions based on traffic optimisation and citizens using public transport na bycicles	air quality monitoring data # of registered EV # of passengers in public transport
Circular economy and waste	***4.0***	***8%***	***ne***		
Separation and collection of waste	4.0	8%		separate collection of waste and underground bins	decrease of waste disposal, tons/person
Green infrastructure and Nature based solutions	***10.4***	***20%***	***ne***		
Green system modernisation	10.4	20%		Green infrastructure renovation, rainwater harvesting system, EWMS	# of applied nature based solutions
Total	***51.6***		***74 213***		

5 Outlook and next steps

This section should draw any necessary conclusions on the CCC Action Plan above and highlight next steps and plans for refining the CCC Action Plan as part of the Climate City Contract in future iterations.

Plans for next CCC and CCC Action Plan iteration

Gabrovo 2030:
Advancing Climate Action and Stakeholder Engagement
The Municipality of Gabrovo is committed to continuously improving and refining the Climate City Contract (CCC) over the years. Future iterations will include more stakeholders, along with their commitments and actions towards achieving climate neutrality. The CCC is considered a "living" document that must be regularly updated to reflect the evolving reality of Gabrovo and its dynamic environment. Additionally, the municipality aims to enhance the design and layout of the CCC to align with the vision of Gabrovo 2030: Join the Green Transition.
Key Initiatives:

1. **Stakeholder Involvement:**
    - Engaging a diverse range of stakeholders in the development and design of the CCC is crucial. Initial steps have been taken to involve stakeholders through the Gabrovo initiatives and events.
    - The municipality plans to continue to expand its activity in this regard, each time involving more stakeholders and diversifying the target groups. A potential innovation camp is already in the works for this autumn, and a number of other climate related events are already in the planning stages.
2. **Workshops in SDGs:**
    - The SDG workshops are already in the plans of Gabrovo and will be launched in the new months to a year. These workshops aim to further refine and align strategies and actions and educate a wider audience.
3. **Industry Engagement:**

The relationships with business are already established, and Gabrovo will continue to develop these industry relationships and seek broader implementation of joint climate-related actions. Strengthening the relationship between the municipality and industry actors remains a priority.

4. **National Government Collaboration:**

The municipality aims to continue engaging with stakeholders and the National government for the implementation of actions. National support and advocacy are crucial for Gabrovo's climate related initiatives and project developement.
Gabrovo intends to continue demonstrating leadership and efforts towards climate neutrality at a political level, serving as a beacon for other municipalities in Bulgaria. A delicate point to consider is that Bulgaria has experienced significant political instability over the past few years, a trend that not only persists but also exacerbates the divisions within the political and governmental landscape. These processes inevitably affect all cities, including Gabrovo, given the centralized nature of the government.
The international and economic future of Gabrovo is intrinsically tied to the geopolitical climate within the European Union and other international relations that directly or indirectly impact our country and city. These dynamics will inevitably influence Gabrovo's future, particularly concerning the Schengen Area, the adoption of the Euro, conflicts, and other disrupted international relations, given Bulgaria's geopolitical context. Additionally, health hazards such as COVID-19-like epidemics are likely to affect the investment and financial aspects of the Climate City Contract (CCC) implementation.
These are potential threats in our foreseeable future that necessitate the establishment of a contingency plan. In this regard, Gabrovo has a robust transition team led by the Committee for

Sustainable Development, local stakeholders, and business representatives to address such issues effectively.

5. **Positive outcome/ scenario**

If Gabrovo SECAP and CCC till 2030 are successfully implemented, including projects, activities, initiatives, and new developments aimed at reducing greenhouse gas emissions and enhancing the overall quality of life and environment for Gabrovo's citizens and visitors, the city is expected to achieve the targeted 80.5% reduction. Strong political support at the national level will be essential in driving us towards climate neutrality before 2030. Ideally, Gabrovo will benefit from robust national support, favorable geopolitical, economic, and social conditions, enabling further growth and prosperity for all. Concurrently, a strong and vibrant civic society will be in place to address and tackle any social, political, local, and economic issues that impact the well-being of Gabrovo's citizens. Historically, Gabrovo has exemplified strength and innovation, a legacy that has endured through time and will continue to do so beyond 2030.

6 Annexes

The annexes contain any textual or **visual material** to the 2030 Climate Neutrality Action Plan as necessary.

Annex 1 - Best practices and project experience of Gabrovo Municipality in stakeholders' engagement through a wide participatory model

Annex 1 - Best practices and project experience of Gabrovo Municipality in stakeholders' engagement through a wide participatory model

Over the past two decades Gabrovo municipality has made significant strides in developing and implementing sustainable energy policies, strategies, and projects. Since 2013, Gabrovo has been a member of the Covenant of Mayors and began implementing its Sustainable Energy Action Plan (SEAP). This plan focused on key mitigation sectors, including ***buildings, transport, waste management, street lighting, renewable energy integration, smart grids, and energy communities,*** thereby solidifying its position as the leader in energy planning in Bulgaria.

To monitor the Sustainable Energy Action Plan (SEAP), inventories of greenhouse gas emissions reductions were conducted in 2016, 2018, and 2020. In 2021 Gabrovo City Council adopted Gabrovo's Sustainable Energy and Climate Action Plan (SECAP), which incorporates both mitigation and adaptation measures. The primary objective of this plan is to achieve a 40% reduction in greenhouse gas emissions by 2030.

As a whole, Gabrovo is distinguished as one of the most progressive municipalities in Bulgaria regarding climate and energy planning. The city also ranks among the leaders in managing to attract and invest EU funds which are instrumental for the implementation of innovative initiatives including energy communities, sustainable procurement, smart waste management, sustainable urban mobility, awareness raising campaigns, etc.

Sector ENERGY EFFICIENCY & BUILT ENVIRONMENT

Gabrovo has accumulated extensive experience in implementing major projects for public and private building retrofitting, public transport, urban infrastructure development, and waste management improvement. Motivated by positive impact the experience and armoured with the ambition to reach climate neutrality by 2030 Gabrovo has developed a new strategy which will help to implement Gabrovo Climate Change Commitment (CCC).

Presently, Gabrovo Municipality is implementing new projects related to retrofitting public and private buildings as well as promoting sustainable mobility and ecological transport. These projects will be funded by the Bulgarian Recovery and Resilience Plan, with Gabrovo Municipality providing approximately 10% co-funding to support the implementation of these actions.

A notable success is the modernization of Gabrovo's street lighting system through an innovative contract with an Energy Service Company (ESCO), which has been recognized as a best practice not only in Bulgaria but also across the EU. This achievement underscores Gabrovo's leading role in energy planning and sustainable development.

In 2022 Gabrovo Municipality successfully developed and implemented its Investment Concept, funded by EUCF, focused on building retrofitting (public and private) and development of carbon neutral industrial zone.

The involvement of private stakeholders is crucial for the execution of the local climate policy, and the municipality is actively working to engage them in sustainable energy projects and initiatives. Over 200 homeowners' associations have been established to participate in renovation programs for multi-family residential buildings. Thirty-seven blocks of flats were renovated before 2020, and 84 have prepared their projects and applied for funding from the Bulgarian Recovery and Resilience Fund in 2023.

The municipality has also established and operates one-stop shops (District Information Point) where citizens and businesses can request information and advice regarding the implementation of their sustainable energy and climate projects, financing opportunities, and more. The municipality is supportining the citizens at each and every step and level of the process, and also organizes meetings and seeks citizens' participation at every step of the process that has been an on-going activity for Gabrovo's municipality for years now.

As a logical continuation of the collaboration between the municipality and its citizens, Bulgaria's first energy community was established in 2024. Over 65 citizens and three small and medium-sized enterprises (SMEs) have joined forces with the Municipality of Gabrovo to create this pioneering initiative. Based on a public-private partnership (PPP), the focus is on constructing and operating a photovoltaic (PV) installation.

Numerous new EU projects have been developed to support climate change adaptation and Gabrovo's Climate Policy, which is based on Gabrovo's Sustainable Energy and Climate Action Plan (SECAP), Sustainable Urban Mobility Plan (SUMP), and Gabrovo Integrated Development Plan 2021-2027.

It is important to highlight that the establishment of the 1st Energy community is a significant achievement not only for Gabrovo but Bulgaria as well. Given the minimal personal funds and resources available to many people, energy and social poverty are prevalent issues in Eastern Europe, particularly in Bulgaria. Addressing these challenges and providing resources and funds for vulnerable groups is one of the major goals of the Municipality of Gabrovo. Additionally national policies are characterised by delays in the transposition of European directives, creating significant challenges for cities in their desire to implement more ambitious and sustainable projects and initiatives. For example, the national definition of nZEBs only became mandatory on 1 January 2024 and energy communities are not yet supported in legislation.

Therefore in order to co-create sustainable and climate neutral future for the city and its citizens the municipality of Gabrovo is closely working with - citizens and organizations, companies and ministries in the energy systems and built environment spheres - Eneffect Consult SLTD, Sofia; Energopro Gabrovo - electricity supplier; Technical University of Gabrovo; Regional Innovation Center "Ambitious Gabrovo"; Ministry of Energy; Ministry of finance; Ministry of innovations; MBAL « Tota Venkova »; Distrcit Information Point - Gabrovo (one stop shop); National Association of the municipalities of the Republic of Bulgaria (NAMRB); Sustainable Energy Development Agency (SEDA); Ministry of regional development and public works; National statistics institute; Associations of owners in multifamily buildings.

At the local level, the work in this sphere is overseen by the Council for Sustainable Urban Development in Gabrovo, while communication is managed by the Directorate for Sustainable Development at the Municipality of Gabrovo. Although the local systems may differ from those in most of Western Europe, they are well-suited to the administrative, financial, decision-making, and cultural realities of the region. The Regional Innovation Center – Ambitious Gabrovo was established as a key point of contact between citizens, the municipality, and businesses. This center is the result of public-private partnership and is the driving force behind the establishment of innovation and smart specialization processes in Gabrovo.

Gabrovo also strongly relies on the good cooperation with different levels of governance, including regional, national and European. National level policies and actions support capital allocation towards net zero also in the cities, but the long political crisis became the main barrier to access the available funding on time and to implement the planned activities and projects.

Citizen involvement is crucial for the achievement of the CCC goals. Engaging residents directly in different activities, including design and implementation, guarantees their active participation in the initiatives. Through these strategies of citizen engagement, the objective is to provide meaningful opportunities for residents to connect with the narrative and purpose of the CCC actions, in order to enhance the collective understanding, enable co-creation process, stimulate ownership of the Gabrovo climate policies, and incentivize local investments within a citizens engagement strategy will be developed under NetZeroHero project. The strategy for citizen participation will include several important components: Community surveys; Co-creation workshops; Pilot Projects and Demonstrations; Capacity Building and Training for citizens; and Community Outreach and Awareness Campaign.

Best practices and project experience:

IMPLEMENTED **Green Public Procurement and Sustainability Tools for Resource Efficiency Mainstreaming (GPP-STREAM)**

https://gabrovo.bg/bg/article/15567

A project under the Interreg Europe Program 2014-2020 to improve the management, implementation and monitoring of policy instruments that integrate green approaches to public procurement so as to maximize resource efficiency. A green procurement methodology was established and stakeholders were identified. Good practices were analyzed and workshops were held.

IN PROGRESS **Collaboration between cities / regions and energy cooperatives as vehicles that accelerate the energy transition (TANDEMS)**

https://gabrovo.bg/bg/article/18763

The project under the European Union Environment and Climate Life Program (LIFE)

Affirming energy cooperatives as the right approach to ensure a fair and accelerated energy transition, involving citizens in every step of planning and implementation. Through its participation in the project, the Municipality of Gabrovo will bring experience from more advanced countries such as Belgium and the Netherlands to support the energy transformation. In Gabrovo, two photovoltaic plants will be built by cooperatives/communities by 2025 and two more by 2030 with the involvement of citizens (about 50 people in each community). The capacity of ten employees in the field of energy communities will be increased. The new solar projects will catalyze at least €500,000 in civic investment and save harmful emissions in the environment.

The first energy community has already been formed. The community includes 73 participants, and the investment value is BGN 160,000. The RES plant produces 100 kWh of electrical energy and is located at the Regional landfill for non-hazardous waste in Gabrovo. Community members are representatives of different age groups and with different professional interests, but what unites them is the desire to participate in the creation of an innovative green approach to providing clean energy, to learn more about the functioning of such cooperatives and to invest in solar an alternative.

***IN PROGRESS* Energy Communities – Local Ownership of Power (LOOP)**

https://gabrovo.bg/bg/article/18880

The project under European Union Environment and Climate Life Program (LIFE) .

Knowledge and capacity building for development and application of models for public-private partnerships for involving local people communities in transition to clean energy and raising awareness for the benefits from the functioning of energy community models . Through participation you are in the project Municipality Gabrovo there is for purpose yes be launched new ones solar initiatives that will catalyze at least 500,000 euros civil investments . The immediate ones tasks are focused on laying the foundations of 5 energy communities , reaching out with information to at least 3,000 citizens and the saving of 563 tons harmful emissions . The goals are in accordance with the policies of the Municipality Gabrovo for achieve carbon neutrality by 2030.

IN PROGRESS **Empowering Renewable and Citizen Energy Communities (POWER-E-COM)**

https://gabrovo.bg/bg/article/20244

The project under the European Union program for the environment and climate "Life" (LIFE).

This project promoting cooperation between regional/local authorities and citizens to create energy communities in six European countries (Austria, Bulgaria, Germany, Ireland, Spain and Slovenia). The aim is to enable citizens to take a more active role in the energy transition by supporting the development of models and tools to facilitate the creation of energy communities. The municipality of Gabrovo aims to strengthen the administrative capacity in the field, building on the achievements of the TANDEMS and LIFE LOOP projects. In addition, the implemented energy community model should be further developed, as well as new concepts for the inclusion of citizens in the energy transition through an energy community with a capacity of 236 kW PV in private multi-family homes and 310 kW PV with the participation of small and medium enterprises (SMEs) and residential buildings.

Sector MOBILITY & TRANSPORT

By 2030, significant investments are anticipated from the private sector and industry for the development of energy systems, retrofitting of production facilities in industrial zones, enhancing industrial carbon footprint capacity, and purchasing electric vehicles for private transport. Gabrovo has become a partner in the RESPOSE project (Horizon 2020) and has begun developing its Positive Energy District (PED) area and Bold City Vision 2050. Additionally, the Municipality has initiated new adaptation projects and successfully applied for the MountResilience and AMIGOS projects, funded by Horizon Europe in 2023, which focus on green infrastructure development and urban mobility

The Municipality of Gabrovo actively engages various stakeholders to enhance mobility and transport within the city. Gabrovo is taking steps to promote cleaner vehicles and sustainable transportation. Additionally, the city is investing in infrastructure for active transportation, such as bike lanes and pedestrian paths, and organizing events to encourage citizens to adopt these sustainable habits. There are on-going activities to improve the already implemented traffic calming measures is set in motion, such as: fixing street signs, speed limits monitoring, pedestrian crossings, and roundabouts building, improvement of road safety and prioritize pedestrians and cyclists.

Through a project: "Development of Sustainable Urban Transport in the City of Gabrovo", procedure: Direct grant award procedure - "Implementation of Integrated Urban Development Plans 2014-2020 - Gabrovo" (part of procedure BG16RFOP001-1.001-039 "Implementation of Integrated Urban Development Plans 2014-2020") and funded by: Operational Programme "Regions in Growth" 2014-2020; Priority Axis 1 "Sustainable and Integrated Urban Development". This project aimed at improving the urban transport system in Gabrovo by making it more sustainable. It's part of a larger initiative funded by the European Union's Operational Programme "Regions in Growth" to promote sustainable urban development. Secured more efficient, faster and more environmentally friendly urban transport to Gabrovo with less power

consumption and capabilities for alternative forms of transport which contributed for raising quality of life and improvement of the ecological environment. Municipality of Gabrovo purchased 14 new eco-friendly buses meeting regulatory standards for harmful emissions. Promoting multimodal sustainable urban mobility by creating opportunities for alternative forms of transport and their appropriate combination. Reducing noise levels by introducing almost silent vehicles (electric buses). Improving the safety of the environment by providing safe pedestrian connections to bus stops, train stations and bus stations. Improved service quality of public urban transport. Improved crossings and ensured accessibility for people with disabilities. Goal is increased use of public transport and decrease of private owned cars in the road. Additional activities are promotion of carpooling and ride-sharing initiatives are planned to reduce the number of vehicles on the road. Incorporate active transportation principles into urban planning decisions to create more walkable and bikeable neighborhoods. Continue the already established education and awareness Campaigns in schools and kindergartens in Gabrovo by the Regional Directorate of the Ministry of Interior – Gabrovo. Continue to involve citizens in the planning and implementation of mobility and transportation initiatives, through conducting studies on related issues as we have conducted pertaining to Amigos project where citizens were asked to contribute with their opinion on biking lanes and walking issues. By engaging a wide range of stakeholders and implementing these activities and projects Gabrovo can promote a more sustainable, accessible, and healthier transportation system for its citizens: Regional Directorate of the Ministry of Interior – Gabrovo ; Municipal transport company ; Local companies ; Enegopro – local energy provider ; National Statistics ; Regional Innovation Center "Ambitious Gabrovo; Council for Sustainable uraban development; Municipal company for public works ; Gabrovo regional Government ; Gabrovo Schools ; Technical university of Gabrovo ; DIP – district information point ; MBAL 'Tota Venkova ; Youth center Gabrovo. All of these stakeholders get engaged and collaborate on activities, events and or meetings throughout the year. The process of communication, work and execution albeit difficult due to bearucracy is working. The newly established Council for Sustainable urban development has the opportunity to tackle this issue by optimizing the processes by bringing together a diverse set of professionals, expertise and skills to address current or future problems. In this way, Gabrovo is setting in an example of an innovative, participatoy and co-creative governance model.

Promotion for eco-driving, implementation of technical measures like smart cards for public transport, and offers of financial incentives for citizens is taking shape. Voluntary measures, such as the European Week of Mobility, involve young families and children to participate in educational and ecological activities.

The Ministry of Education, regional offices, and schools play a crucial role in educating children about safety, transport, and mobility. The Ministry of Youth and Sport also promotes various activities throughout the year. New electric vehicle charging stations are being built to support sustainable transport. This comprehensive approach ensures active stakeholder engagement and citizen participation in Gabrovo's mobility and transport initiatives.

Best practices and project experience:

IMPLEMENTED **Development of sustainable urban city transport Gabrovo**

https://gabrovo.bg/bg/article/5169

Secured more efficient, faster and more environmentally friendly urban transport to Gabrovo with less power consumption and capabilities for alternative forms of transport which contributed for raising quality of life and improvement of the ecological environment .

Purchased 14 new eco-friendly buses meeting regulatory standards for harmful emissions. Promoting multimodal sustainable urban mobility by creating opportunities for alternative forms of transport and their appropriate combination . Reducing noise levels by introducing almost silent vehicles (electric buses). Improving the safety of the environment by providing safe pedestrian connections to bus stops, train stations and bus stations. Improved service quality of public urban transport. Improved crossings and ensured accessibility for people with disabilities. Increased use of public transport.

IN PROGRESS **Environmentally friendly mobility in the municipality of Gabrovo and the municipality of Sevlievo through measures to develop ecological, safe, functional and energy-efficient transport systems**

https://gabrovo.bg/bg/article/20392

The goal of the project is the development of sustainable and environmentally friendly urban mobility in the territories of the municipalities of Gabrovo and Sevlievo through the implementation of measures to build ecological, safe, functional and energy-efficient transport systems. The project will improve transport connectivity along the economic axis Gabrovo - Sevlievo with high labor migration.

Seven electric buses are planned to be purchased - five with a length of 7 meters and two high-floor buses of 12 meters each. They will replace the depreciated vehicles that serve the Gabrovo - Sevlievo line and the villages. There should also be seven charging stations for them. The investment in Gabrovo includes the installation of additional lighting on 22 footpaths. In addition, a modern electronic billing system will be implemented in public transport.

***IN PROGRESS* Active mobility innovations for green and safe city solutions (AMIGOS)**

https://gabrovo.bg/bg/article/20236

The project under Horizon Europe 2021-2027

The project is implemented in a consortium of 28 organizations from 16 European countries (Germany, Bulgaria, Spain, Italy, the Netherlands, Romania, Finland, France, Turkey, Israel, Austria, Hungary, Iceland, Latvia, Malta, Norway).

To achieve carbon neutrality, cities must adopt new models for sustainable urban mobility, relying on zero emissions and active modes of travel. Solutions need to be comprehensive, accessible, safe and responsive to user needs. The AMIGOS project will identify current and future mobility challenges in five European cities (to improve the interaction between different types of mobility) and ten urban areas (to improve safety).

By participating in the project, the Municipality of Gabrovo aims to improve the combination of different types of mobility and to encourage active ways of moving. The project will contribute to improving safety in school areas by motivating parents and students to use less cars and travel more by public transport, bicycles and on foot. In Gabrovo, activities will be carried out to optimize traffic by combining different forms of mobility. Redistribution of public space: reorganization of public urban spaces; transforming key areas into places for active mobility; determination of calendar and time schedule; improving parking for bicycles, scooters, etc.; electric vehicle charging capabilities. Purchase of counter cameras for traffic control in order to improve the organization of traffic in Gabrovo.

***IN PROGRESS* Accelerating transformative climate adaptation for higher resilience in European mountain regions (MountResilience)**

https://gabrovo.bg/bg/article/20243

The project under Horizon Europe 2021-2027

A consortium of 47 organizations from 12 European countries (Italy, Bulgaria, Portugal, Romania, Austria, France, Finland, Poland, Belgium, Croatia, Spain and Switzerland) participated in the project - representatives of the mountain regions in Europe.

Mountainous regions cover 30% of the territory of the European Union and 17% of its population lives in them. They provide vital resources, but mountain ecosystems face unprecedented challenges with climate change.

Adverse conditions are exacerbated by deficits in adaptation action and a lack of coherence. The MountResilience project was developed to accelerate resilience to climate change in ten of the most suitable mountain areas in nine European countries.

The overall objective of the project is to increase the adaptation capacity of mountain regions to climate change and to strengthen resilience and the ability to adapt to climate change-related hazards within the European mountain region.

By participating in the project, the Municipality of Gabrovo aims to develop a new strategy for green infrastructure with a focus on the balanced use of natural resources and implementation of measures to adapt to climate change. A demo solution for rainwater irrigation will be implemented and an early warning and monitoring system will be developed for risk management.

Sector WASTE &CIRCULAR ECONOMY

After three years of construction, the Regional Waste Depot for Non-Hazardous Waste in Gabrovo opened its doors in the summer of 2015. The Depot is run by the city of Gabrovo and is designed to handle waste in an environmentally friendly way. It's permitted to accept, treat, and dispose of specific types of waste according to a detailed permit. The landfill also monitors waste management activities in the area.

The premises are managed by the municipal enterprise "Regional Waste Depot for Non-Hazardous Waste" - Gabrovo (OP RDNO - Gabrovo). OP RDNO is a specialized unit of the Municipality of Gabrovo, a secondary budget spender. The total area of Depot is 140.246 decares.

Purpose of activity: organization of environmentally sound management of non-hazardous waste (including household, industrial, and construction waste), in accordance with the waste codes permitted for "acceptance", "primary treatment", "temporary storage", and "final disposal" in the landfill, which are specifically listed in the Integrated Permit No. 157-H1/2011. The enterprise also carries out waste management control activities.

The municipal public enterprise BLAGOUSTROYAVANE (https://chisto.gabrovo.bg/blagoustroyavane/) is a specialized in delivering a number of services linked to waste management and street cleaning, maintenance of green public spaces and infrastructure and implementation of auxiliary public works.

Gabrovo Municipality Waste Management Program for the period 2021-2028

The program aims to reduce the harmful impact of waste on the environment and human health by preventing its generation and maximizing the efficient use of resources. The program reflects the current state and planning of waste management activities in the Municipality of Gabrovo, in accordance with legal requirements, European and national programs, and methodological documents. Gabrovo has a detailed plan for managing waste from 2021 to 2028. This plan focuses on:

Reducing waste: Finding ways to create less waste in the first place.
Protecting the environment: Ensuring that waste does not harm the environment or people's health.
Using resources efficiently: Making the most of materials and reducing waste.

Best practices and project experience:

International Environment Day

https://chisto.gabrovo.bg/campaign/den-na-okolnata-sreda/

The Municipality of Gabrovo traditionally celebrates International Environment Day with various initiatives that will challenge you to be knowledgeable, capable, and environmentally friendly, to show that life surrounded by nature gives us health, good emotions, and a sense of harmony. World Environment Day is a global event celebrated on June 5th each year to raise awareness about environmental issues. The city of Gabrovo organizes special events on this day to encourage people to care for the environment and live in harmony with nature. These events are designed to be both informative and fun, providing opportunities for people to learn about environmental issues and participate in activities that protect the planet. In this regard there a number of events that take place:

- ✓ Educational activities - with citizens, via social media, conferences and concerts, activities and schools.
- ✓ Reverse Vending machine incentives – monthly meetings
- ✓ Regular publishing on the website and radio programmes
- ✓ Puppet theater
- ✓ Games
- ✓ Festivals

Bio-waste for compost

The campaign is held several times a year in different city locations. "Bio waste for compost " provokes us to think more about the separate collection of waste and even to profit from it. The initiative allows citizens to exchange their biodegradable waste for quality compost produced at the Regional Non-Hazardous Waste Landfill.

IMPLEMENTED **"Execution of pilot demonstrative project in the field of waste management on the territory of the city of Gabrovo"**

https://gabrovo.bg/bg/article/16499

With the idea to introduce more opportunities for quality waste separation practices the Municipality of Gabrovo succeeded to implement innovative projects like smart underground bins with personalised access, reverse vending system located at two public areas with wide public accessibility, openair shared composting spots, a variety of innovative public campaigns and events and active work with citizens.

IMPLEMENTED **Rehabilitation of the " Sinkevitsa " dam and its facilities**
https://gabrovo.bg/bg/article/15700

The " Sinkevitsa " dam is located on an area of 114,065 square meters. It was built in 1963 for industrial water supply to enterprises in Gabrovo and for the retention of water volumes along the Sinkevitsa river. The dam wall is an earth-embankment type with a height of 12 meters. The volume of the dam is 500,000 cubic meters. It is used for recreation, recreational fishing and tourism.

The implementation of the project improved the technical parameters of the dam, created disaster resilience and prevention of negative consequences as a result of floods and protection of human health. Overall, the environment was improved and awareness of the population to respond to critical flood-related situations was increased.

IN PROGRESS **Solutions testing for regions through Insurance for climate adaptation (SOTERIA)**

https://gabrovo.bg/bg/article/20230

The project under Horizon Europe 2021-2027

The project is implemented in a consortium of 30 organizations from 8 European countries (Spain, France, Bulgaria, Norway, Germany, Greece, Croatia, Switzerland).

The leading idea is that Global economic losses from natural disasters have increased from 50 to 300 billion dollars since 1980. In the European Union, they average 12 billion euros per year and without mitigation or adaptation to climate change 0.1% to 0.4% of the gross domestic product could be lost. Offering innovative insurance solutions will help local communities adapt to the effects of climate change. The SOTERIA project seeks to promote insurance against natural disasters in order to manage risk and minimize financial damage.

With its participation in the project, Gabrovo aims to discover and implement innovations in the insurance sector; to design affordable insurance models (for public and private users) and to overcome insurance gaps in relation to public budgets; to test innovative insurance solutions for climate-induced risks; to increase insurance culture and public awareness of climate adaptation processes.

UZANA fest – every year eco festival

https://uzanafest.gabrovo.bg/

Uzana Fest is a symbol of green ideas and care for nature. The festival meets green thinking and successful

ecological patterns, presented in 11 zones through eco practices, activities, healthy products, art initiatives, green challenges and music. The festival brings people closer to nature and reminds them of the relationship with nature by creating a sense of harmony and connectedness. All this happens in the Uzana area (Gabrovo) on a beautiful meadow, located in the geographical heart of Bulgaria. With the realization of Uzana Fest Municipality of Gabrovo aims to establish the event as a national forum for responsible attitude to nature and its resources, to support the efforts of the non-governmental sector, businesses and local governance in the field of sustainable development and circular economy, to engage the general public, especially young people, in environmental protection activities.

The concept of Uzana Fest is entirely subordinated to the environmentally friendly lifestyle, spiritual harmony in line with nature, separate waste collection, zero carbon footprint, recycling and use of renewable energy resources. The main objective of the festival is the transformation of people's attitudes and behavior , focusing on the inspiring principles of Blue Economy, building on lessons from nature and giving birth to innovations in industry.
The event provides an opportunity for a meeting of "green" thinkers and successful ecological models, presented in several different zones through eco practices, interactive activities and lectures on environmental protection, healthy organic products and sustainable art initiatives in the especially designate festival sites like - Knowledge corner, Activities, Kids center, Art zone and Yin&Yan center.

Gabrovo Innovation Camp
https://gabrovoinnovationcamp.eu/

The Gabrovo Innovation Camp is an annual event organized in line with the Innovation Camp Methodology developed by the European Committee of the Regions. It gathers participants from various sectors, following the "Quadruple Helix" model, involving government, business, academia, and civil society. The camp aims to find collaborative solutions to local and global challenges, particularly focused on climate neutrality, smart cities, youth empowerment, and sustainable transformation.

Since its inception in 2016 , the camp has held seven editions, each engaging over 100 participants from across Europe. It is recognized for supporting Gabrovo's Climate City Contract, and has provided a platform for developing innovative solutions, such as green energy systems for public buildings, and climate-neutral urban planning.
Notable partners include the European Commission (JRC) and the Partnership for Regional Innovation (PRI). The camp has also received accolades for its contribution to sustainable urban development and fostering innovation.

Take me to the village

https://www.priemimenaselo.eu/

Bulgarian villages are wealth - wealth of knowledge, but also wealth of the spirit. They preserve the customs, traditions and values of our people. But the villages are becoming more and more depopulated day by day and are being erased from the country's map.

Young people are gradually moving away from their roots and losing touch with the village and nature. The initiative "Admit me to the village" was launched in 2013 and from then until now he continues to take young people (children, students, young people) to the villages of Gabrovo. There they get to know village life - the cultivation of plants and animals, the preparation of traditional foods, the observance of traditions and the preservation of the connection with nature.

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Commitments

Climate Neutrality Commitments of GABROVO

GABROVO
MUNICIPALITY

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1 Introduction

Background

Situated in south-eastern Europe, Gabrovo is centrally located at the heart of Bulgaria, serving as a strategic gateway between Northern and Southern Bulgaria. This advantageous positioning enhances Gabrovo's role as a key economic and cultural center in Bulgaria, making it an ideal location for sustainable urban development.

Gabrovo Municipality is nestled in the Balkan Mountains, alongside the Yantra River, which contributes to its natural beauty and diverse ecological landscape. The city is the administrative center of the municipality, which includes 133 villages and covers an area of 555.579 km^2. The population of Gabrovo Municipality is 64,000 people. More than half of the municipality's area is covered by forests, highlighting its rich biodiversity and commitment to preserving natural resources.

Historically known as "The Bulgarian Manchester," Gabrovo has been at the forefront of Bulgaria's industrial development for over 150 years, initiating modern factory production during the 19th century. This legacy of innovation and entrepreneurship remains a cornerstone of Gabrovo's identity, supporting its strategic ambitions today.

Motivation

Gabrovo's decision to join the EU Mission '100 Climate-Neutral and Smart Cities by 2030' is driven by its commitment to sustainability and climate action. The EU Mission provides a framework for cities to accelerate decarbonization and achieve climate neutrality, aligning with Gabrovo's long-standing dedication to environmental stewardship.

In the face of escalating global climate-related emergencies, the EU has committed itself to spearheading climate action through ambitious goals and legislation. The EU aims to cut emissions by at least 55% by 2030 and reach climate neutrality by mid-century. Cities, responsible for more than 70% of global greenhouse gas emissions while occupying only 3% of the Earth's surface, play a pivotal role in this endeavour.

Gabrovo recognizes the opportunity to leverage the EU Mission to enhance its climate action plans and implement innovative solutions. This participation allows Gabrovo to access funding, expert guidance, and collaboration opportunities, strengthening its ability to address local climate challenges and contribute to the EU's broader climate goals.

Gabrovo's Vision and Strategic Commitment

Gabrovo envisions a transformative journey toward climate neutrality by 2030, positioning itself as a beacon of sustainable urban development in Southeast Europe. Central to this vision is a strategic commitment to achieving an 80.5% (from the SECAP and CCC) reduction in greenhouse gas emissions compared to 2008 levels by 2030. This ambitious target is encapsulated within Gabrovo's Climate City Contract (CCC), which delineates a comprehensive framework for collaborative action, engaging local authorities, businesses, academia, and the citizenry at large.

In alignment with the overarching objectives of the European Green Deal and the EU Mission for 100 Climate-Neutral and Smart Cities, Gabrovo is steadfast in its pursuit of climate neutrality. This

commitment is intricately woven into the fabric of the Gabrovo Integrated Development Plan 2021-2027, manifesting through a series of strategic plans that collectively drive the city's sustainable transition:

Sustainable Energy and Climate Action Plan (SECAP) 2022-2030: This plan orchestrates a holistic approach to energy efficiency and emissions reduction across all sectors, underscoring Gabrovo's leadership in climate governance.

Sustainable Urban Mobility Plan (SUMP) 2021-2030: SUMP advances the transition towards low-emission mobility, fostering the development of a comprehensive and resilient transportation network.

Waste Management Programme of Gabrovo Municipality 2021-2028: This program redefines waste management through the lens of the circular economy, enhancing resource efficiency and minimizing environmental impact.

Program to Promote the Use of Energy from Renewable Sources and Biofuels 2021-2030: A pivotal initiative that accelerates the adoption of renewable energy, thus reducing dependency on fossil fuels and mitigating climate risks.

Strategy for Sustainable Development of Tourism in Gabrovo Municipality 2021-2027: Integrating sustainability into the tourism sector, this strategy ensures the preservation of Gabrovo's rich cultural and natural heritage while promoting economic vitality.

Strategy for Smart Specialization of Gabrovo Municipality 2021-2030: Leveraging innovation and technological advancement, this strategy drives sustainable economic growth and positions Gabrovo as a hub of smart, green development.

Environmental Protection Program 2023-2027: This program fortifies Gabrovo's commitment to environmental stewardship, ensuring the protection and enhancement of the city's natural assets.

These strategic initiatives are meticulously aligned with the Gabrovo Integrated Development Plan 2021-2027, which articulates a vision of "Gabrovo as a green, innovative, and accessible municipality, with a rich cultural heritage and sustainable tourism, open to all." Through this integrated approach, Gabrovo not only advances its climate objectives but also contributes to the broader European agenda of cultural preservation, sustainable development, and enhanced quality of life for all citizens. The city's dedication to this cause positions it as a leader in climate resilience and a model for sustainable urban transformation within the European Union.

Alignment with Action Plan Objectives:

Gabrovo's Climate Neutrality Commitment is rooted in clear and actionable objectives set forth in the city's 2030 Climate City Contract (CCC) and aligned with the broader goals of the Gabrovo Integrated Development Plan 2021-2027 while strategically working within the scope of various EU and national policies, strategies, and plans to address on achieving climate neutrality. The following targets are central to this commitment:

Reduction of Greenhouse Gas Emissions: Achieve an 80.5% reduction in greenhouse gas emissions compared to 2008 levels by 2030 (from SECAP and CCC). This is a foundational target driving all initiatives within Gabrovo CCC. *Achieving this reduction will lead to cleaner air, improved public health, and a significant decrease in the adverse effects of climate change, making Gabrovo a healthier place for its citizens to live and work.*

Energy Systems: Increase the use of renewable energy sources (RES) across all sectors, with a focus on solar, wind, and other sustainable energy technologies to significantly lower carbon emissions. *This expansion will reduce the city's dependence on fossil fuels, lower energy costs for residents and businesses, and protect the natural environment by minimizing pollution and conserving resources.*

Built Environment: Implement comprehensive energy efficiency improvements across municipal, tertiary, private and industrial building and facilities. This includes retrofitting of existing buildings, adopting energy-saving technologies, and promoting energy-efficient practices citywide. *Enhancing energy efficiency will lead to reduced energy consumption, lowering utility bills for households and businesses while contributing to a more sustainable and resilient urban infrastructure.*

Mobility & Transport: Expand the infrastructure and usage of electric vehicles (EVs) and electric buses to reduce transportation-related emissions. This objective includes the development of charging stations and the transition of public and private vehicle fleets to low-emission alternatives. Develop a safe, connected, and extensive cycling infrastructure that promotes active transportation as a sustainable and healthy alternative to motorized transport. *Promoting electric mobility will result in quieter, cleaner streets, reducing noise pollution and improving air quality, particularly benefiting urban areas with heavy traffic.*

Waste & Circular Economy Initiatives: Advance circular economy practices by enhancing waste management systems, increasing recycling rates, and minimizing waste generation. This objective supports sustainable consumption and maximizes resource efficiency. *Adopting circular economy practices will lead to less waste ending up in landfills, preserving natural habitats, reducing environmental degradation, and promoting a more responsible consumption culture.*

Green Infrastructure & Nature-Based Solutions: Strengthen urban resilience by implementing nature-based solutions and expanding green spaces. This objective focuses on climate change adaptation through enhancing biodiversity, improving air quality, and providing recreational opportunities. *Expanding green infrastructure will create more green spaces for recreation, improve mental and physical well-being, protect local wildlife, and enhance the city's resilience to extreme weather events.*

Enhancing Synergies through Strategic Collaboration, Capacity Building, and Public Engagement Initiatives within Gabrovo's Climate Ecosystem: To drive a cohesive and integrated approach towards climate neutrality, Gabrovo is committed to fostering robust partnerships among all stakeholders—including local authorities, the private sector, academic institutions, and civil society organizations. This will be achieved through the orchestration of regular capacity-building programs, expert-led workshops, and targeted public awareness campaigns. These initiatives are designed to ensure that all stakeholders are not only well-informed and strategically aligned but are also empowered with the advanced skills and knowledge necessary to actively contribute to and accelerate Gabrovo's ambitious climate goals. *By cultivating a culture of collaboration and continuous learning, Gabrovo aims to build a*

resilient, forward-thinking community that is fully engaged in and supportive of the city's transformative journey towards sustainability and climate resilience.

Why Join the EU Mission?

Gabrovo is renowned as one of Bulgaria's most dynamic, inventive, and entrepreneurial cities, boasting a rich heritage and lively culture. It stands out as one of the leading Bulgarian municipalities in securing EU funds and actively participates in numerous EU projects, focused on innovation, energy efficiency, sustainable procurement, energy communities, and smart cities, funded by Horizon Europe, Horizon 2020, Interreg Europe, Interreg Danube, Erasmus+, Urbact, and more.

Over the past two decades, Gabrovo has made significant strides towards becoming a climate-neutral and smart city by developing and implementing sustainable energy policies, strategies, and projects across key sectors such as buildings, transportation, waste management, street lighting, renewable energy integration, smart grids, and being the leader of the first energy community in Bulgaria. Joining the EU mission is a natural, logical pathway for Gabrovo.

Gabrovo's decision to join the EU Mission was driven by several key factors:

- **Long-standing dedication to environmental sustainability**: Gabrovo has consistently prioritized sustainable development, making this mission a natural extension of its goals. Joining the mission reflects the city's proactive approach to combating climate change through innovative and effective strategies. Gabrovo aims to leverage the EU's support to implement comprehensive sustainability practices that benefit both the environment and its citizens.
- **Access to Financial Resources for Large-scale Projects:** Participation in the EU Mission grants Gabrovo access to significant funding dedicated to climate initiatives. This financial support empowers the city to undertake ambitious projects that would be difficult to finance solely through local budgets, ensuring that transformative urban development is economically feasible.
- **Expert Guidance and Knowledge Sharing:** The mission provides Gabrovo with access to a vast pool of expertise and knowledge from leading European experts in sustainability. By collaborating with experienced professionals, Gabrovo can enhance its climate action plans by incorporating cutting-edge technologies and strategies. This exchange of ideas fosters innovation and drives Gabrovo's progress toward its climate goals.
- **Network of Cities Committed to Sharing Best Practices:** Being part of the mission allows Gabrovo to learn from and contribute to a network of cities, sharing successful strategies and innovations. This collaboration fosters a sense of solidarity and collective progress toward a common goal of sustainability. Gabrovo benefits from the shared experiences of these cities, which help in shaping effective policies and practices.
- **Alignment with EU Targets**: The mission's goals align perfectly with Gabrovo's vision for a green, smart, and innovative city, supporting its ambition to become a leader in climate action. This alignment ensures that Gabrovo's efforts are synchronized with broader European policies, enhancing their impact and reach. It also helps Gabrovo contribute to the EU's broader climate objectives, reinforcing its commitment to global sustainability.

Gabrovo's Climate Journey: **Highlights**

1997: Gabrovo co-founded the **EcoEnergy** municipal network, marking its commitment to energy efficiency. This early involvement laid the foundation for the city's ongoing dedication to sustainable practices and energy conservation, positioning Gabrovo as a leader in municipal energy initiatives.

1998-2001: Pioneered an integrated **street lighting** system, establishing Gabrovo as a leader in sustainability in Bulgaria. This project not only reduced energy consumption but also showcased Gabrovo's capability to implement innovative solutions in urban settings, setting a benchmark for other cities.

In **2013**, Gabrovo developed and approved its **Sustainable Energy Action Plan (SEAP)** and joined the Covenant of Mayors, solidifying its dedication to climate action and reducing greenhouse gas emissions. This membership underscores Gabrovo's commitment to aligning with global standards and achieving tangible climate goals, enhancing its reputation as a proactive city in climate governance.

In **2021**, Gabrovo developed and approved its **Sustainable Energy and Climate Action Plan (SECAP)** and was awarded the **European Green Leaf Award**. This prestigious accolade recognizes Gabrovo's achievements in sustainable urban development, highlighting the city's successful efforts in integrating environmental considerations into urban planning and confirming its status as a model city in Europe.

In **2022**, Gabrovo was honoured in the **Green Municipality** category at the National Mayor Awards, underscoring its vision to become the first climate-neutral city in Bulgaria. This accolade highlights Gabrovo's leadership in climate policy and its role as a model for other Bulgarian cities, advancing the national sustainability agenda.

In **2022**, Gabrovo was selected as one of the **100 cities** in the EU Mission for Climate-Neutral and Smart Cities by 2030.

In **2023-2024**, Gabrovo was recognized as a **Twin City** in partnership with Dijon, France, and Matosinhos, Portugal, focusing on shared climate initiatives. These partnerships enable Gabrovo to collaborate on innovative projects and enhance its international profile as a sustainable city, fostering mutual growth and learning.

In **2024**, Gabrovo was selected as a **Pilot City** for the NET ZERO HERO project, showcasing its leadership in renewable energy and sustainability practices. This pilot role enables Gabrovo to test and implement innovative technologies that can be replicated in other urban areas, furthering its impact on global sustainability efforts and establishing its role as a pioneer in climate action.

Greenhouse Gas Emissions Baseline Inventory

Final energy use by source sectors

In 2008, the total energy consumption within the municipality amounted to 844,574 MWh. The primary energy consumer on our territory was the Private and Commercial Transportation subsector, accounting for 43.2% of the total energy usage. Following closely was the Industrial Facilities subsector, responsible for 35.9% of the energy demand. Additionally, the Residential Buildings subsector consumed 15.7% of the energy.

Electricity accounts for 30.7% of final energy consumption in the buildings and facilities sector, while diesel dominates the transport sector with a 26.4% share.

The total energy consumption on the territory of the municipality in 2018 was 807 338 MWh.

The primary energy consumer within the municipality was the Private and Commercial Transportation subsector, accounting for 44.5% of the total energy consumption. Following closely was the Industrial Facilities subsector, responsible for 33.9% of the energy usage within our territory. The Residential Buildings subsector consumed 16.0% of the energy. These figures highlight the distribution of energy demand across different sectors in our community.

Electricity accounts for 29.6% of final energy consumption in the buildings and facilities sector, while diesel dominates the transport sector with a 32.4% share.

GHG emissions

Total GHG emissions on the territory of the municipality in 2008 are 324 566 t CO2eq with LULUCF and 400 573 t CO2eq without LULUCF. The main source of GHG emissions were Buildings and facilities sector with 68.6% of total emission without LULUCF, followed by Transport sector (24.3%) and Waste sector with 7.0%. In the LULUCF sector 76 007 tons of CO2 were absorbed in 2008.

In 2018, the total greenhouse gas (GHG) emissions within the municipality amounted to 216,743 t CO2eq with land use, land-use change, and forestry (LULUCF) considered, and 257,831 t CO2eq without LULUCF. The primary source of GHG emissions is the Buildings and Facilities sector, accounting for 55.4% of the total emissions (excluding LULUCF). It is followed by the Transport sector (37.9%) and the Waste sector (6.8%). Additionally, the LULUCF sector absorbed 41,088 tons of CO2 in 2018.

The reduction in greenhouse gas emissions in 2018 compared to 2008 is 35.6%. The main decrease was achieved in the Buildings and Facilities sector – 48.1%, and the Waste sector – 37.8%.

2 Goal: Climate neutrality by 2030

Main goal of Gabrovo CCC: Achieve an 80.5% reduction in greenhouse gas emissions compared to 2008 levels by 2030 (from SECAP and CCC).

<u>Specific goals by sectors:</u>

Energy Systems & Built Environment

Gabrovo's objective is to achieve substantial reductions in greenhouse gas emissions by transforming energy systems and enhancing the built environment across municipal, tertiary, private and industrial building and facilities through innovative technologies, regulatory improvements, and community engagement as follows:

Adoption of Advanced Technologies:

Goal: Integrate tailored energy technologies across sectors.

Outcomes: Widespread use of advanced energy solutions, targeting a reduction of GHG emissions by 38 747 tons of CO2eq by 2030 (CCC).

Co-benefits: Reduced energy costs, improved quality of life and increased competitiveness of local industry.

Investment and Strategic Partnerships:

Goal: Drive investment in energy projects through robust business models.
Outcomes: Increased investment and enhanced public-private collaboration.
Co-benefits: Attraction of new financial resources.

Policy Alignment and Capacity Building:

Goal: Update local policies to align with climate goals and empower community involvement.
Outcomes: Strengthened governance, a well-informed citizenry, and increased participation in sustainability initiatives.
Co-benefits: Improved regulatory environment and community resilience.

Mobility & Transport

Objective: Achieve significant reductions in greenhouse gas emissions by transforming Gabrovo's transportation systems, enhancing public transport, promoting the adoption of electric and alternative fuel vehicles and development of charging and cycling Infrastructures.

Promotion and Integration of Key Innovative Solutions and Technologies:

Goal: Transition Gabrovo's vehicle fleet towards the use of Electric Vehicles (EVs), Plug-in Hybrid Electric Vehicles (PHEVs), and other alternative fuels , optimization of transport system, development and implementation of cycling infrastructure for sustainable mobility.
Milestones: Identify local transportation needs and suitable innovative technologies. Engage relevant stakeholders, including government agencies, transport providers, and the public, in the adoption of sustainable transportation solutions.
Outcomes: Noticeable shift in the vehicle fleet with increased adoption of EVs, PHEVs, and alternative fuel vehicles; Reduction of GHG emissions by 35 466 t CO2eq by 2030 (CCC).
Co-benefits: Improved mobility and quality of life, increased use of public transport, enhanced air quality and community health, improved safety conditions, and the development of new competencies and innovations.

Development of Sustainable Business Models and Investment Plans:

Goal: Foster public-private partnerships and secure investments for sustainable transportation projects.
Milestones: Identify and leverage funding opportunities at local, national, and international levels. Develop business models that facilitate investment in sustainable transport infrastructure.
Outcomes: Successful implementation of investment projects focused on sustainable transportation.
Co-benefits: Increased public funding and private sector investment in the transportation sector.

Review and Enhancement of Local Strategies and Regulations:

Goal: Align local transportation policies with national and EU climate objectives to support sustainable mobility.

Milestones: Review and analyze existing local strategies and the national regulatory framework. Update and improve local strategies and regulations to promote climate-neutral transportation.

Outcomes: Improved governance and regulatory environment that supports sustainable transportation.

Co-benefits: Strengthened governance and a regulatory framework that facilitates the transition to sustainable mobility.

Capacity Building through Education and Community Engagement:

Goal: Enhance the capacity of all societal groups to contribute to CO2 neutrality in the transportation sector.

Milestones: Organize workshops, training sessions, and information campaigns focused on sustainable transportation.

Outcomes: Increased capacity among citizens, businesses, and institutions to support and engage in sustainable mobility initiatives.

Co-benefits: Greater public awareness, active participation in transportation sustainability efforts, and improved safety conditions in transport.

Fostering Social Innovation and Community Involvement:

Goal: Investigate and implement social innovations that support sustainable transportation and mobility solutions.

Milestones: Explore potential social innovations and initiate implementation.

Outcomes: Social innovations are integrated into the broader transportation strategy, contributing to enhanced mobility and sustainability.

Co-benefits: Strengthened community involvement, increased social equity, and improved transportation safety and efficiency.

Waste & Circular Economy

Objective: Achieve significant reductions in greenhouse gas emissions by enhancing waste management practices and promoting a circular economy, focusing on innovative solutions, strategic investments, and community engagement.

Implementation of Innovative Solutions and Technologies:

Goal: Identify and promote advanced waste management technologies tailored to Gabrovo's needs.

Milestones: Assess local needs and identify suitable innovative technologies. Engage stakeholders, including citizens, businesses, and institutions, in the adoption of these solutions.

Outcomes: Increased adoption of advanced waste management technologies, contributing to a reduction to 10 407 t CO2 by 2030.

Co-benefits: Reduced waste disposal costs, improved quality of life, increased material reuse in local industries, and enhanced circularity.

Development of Sustainable Business Models and Investments:

Goal: Foster public-private partnerships and secure investments to support waste management and circular economy projects.

Milestones: Identify funding opportunities at local, national, and international levels. Develop business models that attract investments in waste management and circular economy solutions.

Outcomes: Successful implementation of investment projects focused on waste management and circular economy.

Co-benefits: Increased public funding and private investment in sustainable waste management practices.

Enhancement of Local Strategies and Regulatory Framework:

Goal: Align local waste management strategies with national and EU climate objectives.

Milestones: Review existing local strategies and the national regulatory framework. Update and improve local regulations to support sustainable waste management and circular economy practices.

Outcomes: Strengthened local strategies and regulations that promote circular economy initiatives.

Co-benefits: Improved governance and regulatory framework supporting waste management innovation.

Capacity Building and Community Engagement:

Goal: Increase the capacity of citizens, businesses, and institutions to engage in sustainable waste management practices.

Milestones: Organize workshops, training sessions, and awareness campaigns on waste reduction and circular economy.

Outcomes: Enhanced capacity among all societal groups to participate in and support waste management and circular economy initiatives.

Co-benefits: Greater public awareness and active participation in sustainability efforts.

Promotion of Social Innovation in Waste Management:

Goal: Develop and implement social innovations that support waste management and circular economy practices.

Milestones: Explore and pilot social innovation initiatives.

Outcomes: Successful integration of social innovations into waste management strategies.

Co-benefits: Strengthened community involvement, increased social equity, and improved waste management practices.

Green Infrastructure & Nature-Based Solutions

Objective: Enhance Gabrovo's climate adaptation by improvement of green infrastructure and nature-based solutions, while achieving substantial reductions in greenhouse gas emissions.

Implementation of Innovative Solutions and Technologies:

Goal: Promote the adoption of green technologies and nature-based solutions tailored to Gabrovo's specific needs.

Milestones: Assess local requirements and identify suitable green infrastructure technologies. Engage stakeholders, including citizens, businesses, and institutions, in the adoption of these solutions.

Outcomes: Increased use of green technologies and nature-based solutions.

Co-benefits: Improved quality of life, creation of green jobs, increased number of visitors and tourists, enhanced community adaptation to climate change, and protection of biodiversity.

Development of Sustainable Business Models and Investments:

Goal: Foster public-private partnerships and secure investments to support green infrastructure and nature-based projects.

Milestones: Identify funding opportunities at local, national, and international levels. Develop business models that attract investments in green infrastructure.

Outcomes: Successful implementation of investment projects focused on green infrastructure.

Co-benefits: Increased public funding and private investment in sustainable urban development.

Enhancement of Local Strategies and Regulatory Framework:

Goal: Align local strategies and regulations with national and EU climate objectives to support green infrastructure and nature-based solutions.

Milestones: Review and analyse existing local strategies and the national regulatory framework. Update local strategies and regulations to encourage the integration of green infrastructure.

Outcomes: Strengthened local strategies and improved regulatory environment that promotes green infrastructure.

Co-benefits: Enhanced governance and support for sustainable urban development.

Capacity Building and Community Engagement:

Goal: Increase the capacity of citizens, businesses, and institutions to engage in green infrastructure and nature-based solutions.

Milestones: Organize workshops, training sessions, and awareness campaigns focused on green infrastructure.

Outcomes: Enhanced capacity among all societal groups to support green infrastructure initiatives.

Co-benefits: Greater public awareness and active participation in urban greening and sustainability efforts.

Promotion of Social Innovation in Green Infrastructure:

Goal: Develop and implement social innovations that support the integration of green infrastructure and nature-based solutions.

Milestones: Explore and pilot social innovation initiatives.

Outcomes: Successful integration of social innovations into urban planning and green infrastructure strategies.

Co-benefits: Strengthened community involvement, increased social equity, and enhanced resilience to climate change.

3 Strategic priorities

3.1. Energy Systems & Built Environment

Objective: To transform Gabrovo's energy systems and built environment by increasing the share of renewable energy sources (RES), enhancing energy efficiency, transitioning from high-emission to low-emission fuels, and constructing low- and zero-emission buildings.

Reason for Selection: Energy Systems & Built environment in Gabrovo, encompassing municipal, tertiary (non-municipal) buildings, residential, and industrial buildings and facilities incl. their energy systems, accounts for a significant proportion of the city's GHG emissions. Much of the existing infrastructure relies heavily on inefficient, high-emission energy systems, necessitating a shift towards more sustainable energy solutions.

Gabrovo's strategic approach for achieving climate neutrality by 2030 is through the construction of near-zero and zero-emission buildings, retrofitting existing structures to the highest energy efficiency standards, and integrating renewable energy installations in buildings. A decrease of carbon footprint in industry by trainings and capacity building programs is also planned, alongside the development of an advanced energy monitoring system that will optimize energy consumption and reduce the city's overall carbon footprint. The timeline for the CCC of Gabrovo is focused on 2024 – 2030.

Timeline and Targets:

From 2024 to 2030, the municipality aims to implement ordinances to limit high-emission solid fuels and heating appliances across the renovated buildings. The plan includes integrating renewable energy sources (RES) installations in the renovated buildings and retrofitting of the planned buildings to achieve class A and B energy efficiency standards. Additionally, a decrease of industrial carbon footprint and the implementation of a comprehensive energy monitoring system across all municipal buildings are planned. By 2027 at least 2 municipal buildings, 2 tertiary and 23 multifamily buildings will be renovated.

Critical Stakeholders:
Municipality of Gabrovo: As the key local governmental body, it plays a crucial role in policy creation, regulation, and funding allocation, which are essential for driving the transition to low-emission energy systems and sustainable urban development.
ENERGO-PRO Gabrovo (Electricity Supply Company): Manages and supplies electricity, making it essential for integrating renewable energy into the grid and supporting smart grid initiatives.
Citigaz Bulgaria JSC (Natural gas Supplying Company): Manages and supplies natural gas, making it essential for fuel mix change.
Sustainable Energy Development Agency (SEDA): Provides strategic direction and support for national energy efficiency and renewable energy initiatives, influencing local project implementation.
Ministry of Energy: Sets national energy policies and regulations, providing the framework necessary for transitioning to low-emission fuels and integrating renewable energy systems.
Ministry of Innovations and Growth: Promotes technological advancements and supports innovation in energy systems, which are crucial for the development of smart city solutions and energy efficiency.

Ministry of Finance: Controls the financial resources needed to fund energy efficiency and renewable energy projects, making it vital for the success of these initiatives.
National Association of the Municipalities of the Republic of Bulgaria (NAMRB): Advocates for municipal interests and ensures that national policies and funding support local climate and energy initiatives.
Technical University of Gabrovo (TU Gabrovo): Contributes critical research and innovation in smart energy systems and energy-efficient technologies, essential for advancing sustainable energy solutions in the built environment.
Regional Innovation Center „Ambitious Gabrovo": Drives innovation and supports the development of smart city solutions, making it a key player in integrating advanced technologies into energy systems.

3.2. Mobility & Transport

Objective: A sustainable urban mobility and optimization of transport systems by increasing the use of electric vehicles (EVs), development of a new cycling infrastructure, and promoting public transportation.

Reason for Selection: The transport sector is a major source of GHG emissions in Gabrovo, primarily due to the high reliance on fossil fuel-powered vehicles. Transforming this sector is critical to achieving the city's climate neutrality goals.

Strategic Approach: Gabrovo plans to gradually replace the public transport and municipal vehicle fleets with electric and compressed natural gas (CNG) vehicles. In addition, the city will construct new EV charging stations. A mobile application will also be developed to enhance the convenience and accessibility of public transport.

Timeline and Targets:
From 2024 to 2030, the municipality plans to replace the public transport fleet and municipal vehicles with electric vehicles (EVs) and compressed natural gas (CNG) vehicles, and construct the necessary EV charging stations infrastructure. By 2027 at least 7 e-buses plus 7 e-charging stations for public transportation will be purchased. Additionally, car-restricted zones for high-emission vehicles will be implemented, and the fee-based parking system will be expanded with new regulations, including incentives for EV parking. By the end of this period, the municipality aims to achieve a transition to electric and low-emission vehicles in public transport.

Critical Stakeholders:
Municipal Transport Company: Responsible for transitioning the public transport fleet to electric and compressed natural gas (CNG) vehicles and managing sustainable transport services, including the integration of smart mobility solutions.
Ministry of Transport: Provides national policies, regulations, and frameworks that support the transition to cleaner vehicles and sustainable mobility, including smart city transport technologies.
Gabrovo Regional Directorate of the Ministry of Interior (Gabrovo Police Department): Ensures enforcement of traffic regulations, including low-emission zones, and supports the deployment of smart traffic management systems to optimize transport and reduce emissions.
ENERGO-PRO Gabrovo (Electricity Supply Company): Supports the infrastructure for electric vehicle (EV) charging stations and provides the necessary energy supply for electric mobility, integrating with smart grid technologies.

Citizens: Their adoption of sustainable transport options, such as public transportation, cycling, and electric vehicles, is crucial for the success of mobility transformation, supported by digital tools and smart city applications.
Local Companies: Play a key role in adopting cleaner vehicles and contributing to the development of infrastructure, such as EV charging stations and smart mobility solutions, essential for scaling up sustainable transport initiatives.
Technical University of Gabrovo (TU Gabrovo): Provides research and innovation in smart mobility solutions, IoT, and energy-efficient technologies, making it a key player in advancing sustainable transport systems.
Ministry of Health: Focuses on addressing the health impacts of transport emissions and promoting healthier, more sustainable modes of transport, supported by digital monitoring and smart city initiatives.
Regional Innovation Center "Ambitious Gabrovo": Drives innovation and supports the development of smart city solutions, including intelligent transport systems, mobility apps, and digital integration in public transport.
Public-Private Partnerships: Essential for implementing smart mobility solutions such as real-time public transport information systems, EV infrastructure, and smart traffic management, leveraging resources and expertise from both sectors.

3.3. Waste & Circular Economy

Objective: To enhance Gabrovo's waste management system by reducing municipal solid waste (MSW), increasing the efficiency of waste collection, and promoting a circular economy.

Reason for Selection: Current waste management practices in Gabrovo are inadequate for achieving the city's ambitious waste reduction and recycling targets. The transition to a circular economy is essential for minimizing environmental impact and conserving resources.

Strategic Approach: Gabrovo will modernize its waste collection systems, introducing smart technologies, separation of waste and expand underground waste collection. The city will also launch pilot programs for zero-waste practices in local businesses and engage citizens through educational initiatives to boost participation in waste separation.

Timeline and Targets:
From 2024 to 2030, the municipality aims to implement pilot projects for zero-waste practices in key districts and businesses, and achieve an increase in separate waste collection rates. The plan includes modernizing waste collection systems and expanding the share of underground waste collection.

Critical Stakeholders:
Municipal Enterprise "Urban Development": Responsible for the modernization and maintenance of waste collection infrastructure, including the integration of smart waste management systems.
Ministry of Environment and Water: Provides the regulatory framework and national policies that are essential for guiding the transition to a circular economy and ensuring compliance with waste reduction targets.
Regional Inspectorate of Environment and Water: Enforces environmental regulations and ensures that waste management practices meet national standards, critical for the effectiveness of local initiatives.

Waste Depo - Gabrovo: Manages the final disposal of waste and plays a key role in landfill management and exploring waste-to-energy solutions, crucial for sustainable waste management.
Local Business: Their adoption of circular economy practices and participation in waste reduction initiatives are essential for scaling up efforts and integrating sustainability into the local economy.
Citizens: Their engagement in waste separation and recycling is critical for the success of waste management strategies and achieving the city's waste reduction goals.
Technical University of Gabrovo: Provides research and innovation in waste management technologies, supporting the development of new solutions that are essential for advancing the circular economy.
National Trust EcoFund: Offers financial incentives and grants that are crucial for funding waste management projects and circular economy initiatives.
Regional Innovation Center "Ambitious Gabrovo": Drives innovation and supports the development of smart waste management solutions, including the use of IoT for waste tracking and resource optimization.
Public-Private Partnerships: Essential for implementing smart waste management solutions, such as smart bins and digital platforms for tracking waste separation and recycling.

3.4. Green Infrastructure & Nature-Based Solutions

Objective: To strengthen Gabrovo's urban and environmental sustainability against climate change through the improvement of green infrastructure, modernization of urban green systems, and implementation of nature-based solutions.

Reason for Selection: Gabrovo's green spaces and natural environment are vital for climate resilience. However, urban expansion and climate challenges necessitate enhanced protection and development of these areas.

Strategic Approach: The city will develop green corridors, eco-trails, and protective forest belts, modernize its urban green system, and implement advanced flood and fire protection systems. The use of technology, such as mobile apps to identify "cool spots," will also be employed to mitigate the effects of extreme heat.

Timeline and Targets:
From 2024 to 2030, the municipality plans to develop and implement guidelines for urban greening projects and initiate flood protection measures. The strategy includes increasing forest coverage in erosion-prone areas and establishing a comprehensive flood registry. By the end of this period, the municipality aims to expand green infrastructure, enhance biodiversity, and integrate compensatory greening criteria into local regulations.

By 2027 new Green Infrastructure Strategy and two demos for rainwater harvesting system and EWMS will be developed and implemented within MountResilience project, funded by Horizon Europe.

Critical Stakeholders:
Municipality of Gabrovo: Oversees the implementation of green infrastructure projects, integrates nature-based solutions into urban planning, and ensures alignment with the city's sustainability goals.

Ministry of Environment and Water: As the primary governmental body responsible for environmental policy and regulation, this ministry is crucial for providing the necessary frameworks, funding, and oversight for green infrastructure projects.
Bulgarian Biodiversity Foundation: Plays a vital role in biodiversity conservation and habitat restoration, which are essential components of green infrastructure and nature-based solutions.
National Trust EcoFund: Provides critical financial support for green infrastructure projects, enabling the implementation of innovative solutions and nature-based strategies.
Ministry of Health: Their involvement in urban greening projects and initiatives to reduce air pollution and mitigate heat effects is crucial for ensuring the health benefits of green infrastructure are realized.
Regional Innovation Center "Ambitious Gabrovo": Drives innovation and supports the development of smart city solutions that enhance green infrastructure, such as using IoT for environmental monitoring and the implementation of digital tools to manage urban green spaces.
Public-Private Partnerships: Essential for implementing smart city solutions that support green infrastructure, such as public-private initiatives for developing green roofs, green walls, and other sustainable urban design projects.
Technical University of Gabrovo: Contributes research and innovation in smart technologies that support green infrastructure, such as IoT-based environmental monitoring systems and smart water management solutions.
Private Sector: Plays a key role in implementing and financing green infrastructure projects, including the adoption of nature-based solutions in commercial developments and contributing to urban sustainability through innovative technologies.
Bulgarka Nature Park: Supports the management and maintenance of eco-trails, green corridors, and conservation areas, contributing to biodiversity enhancement and providing recreational opportunities that align with Gabrovo's environmental sustainability goals.

4 Process and principles

Gabrovo's path to climate neutrality by 2030 is not just a plan; its a pioneering framework that embodies innovation, inclusivity, and strategic collaboration. Designed to set a benchmark for cities in South-eastern Europe, Gabrovo's Climate City Contract (CCC) is both a mission and a movement—a blueprint for how cities can mobilize and lead in the fight against climate change.

A Systematic and Smart Process for Urban Transformation

Gabrovo's approach is holistic, innovative, and driven by a bottom-up philosophy that empowers every stakeholder—from local citizens to international partners. This process is further strengthened by the active involvement and leadership of key regional figures and institutions:

- **Co-Creation and Bottom-Up Engagement:** At the heart of Gabrovo's process is co-creation. We engage a diverse array of stakeholders—including government agencies, businesses, academia, and civil society—in a continuous dialogue to design and implement climate solutions. This bottom-up approach ensures that the strategies are not only effective but also widely supported, reflecting the collective vision and needs of the community. Gabrovo's commitment to collaboration extends beyond city limits, fostering regional partnerships that amplify our impact. **Gabrovo Council for sustainable urban development** plays a pivotal role in aligning regional policies and resources with national objectives and the CCC, thereby strengthening the cohesion and effectiveness of our climate action

- **Capacity Building and Empowerment:** Gabrovo recognizes that true transformation requires more than just policies—it requires empowered people. Our capacity-building initiatives are designed to equip local leaders, businesses, and citizens with the knowledge and skills they need to drive change. Through workshops, training programs, and knowledge-sharing platforms, we are building a citywide network of climate champions who will carry this mission forward. The **Technical University of Gabrovo** is leading academic and research initiatives that provide cutting-edge knowledge and innovation, which are critical to the city's climate strategy.

- **Innovation at the Core:** Innovation is embedded in every aspect of our process. By leveraging cutting-edge technologies and data-driven decision-making tools, Gabrovo is transforming how urban planning, energy management, and waste systems operate. This smart approach enables us to optimize resources, reduce emissions, and create a resilient city that can adapt to future challenges. The **Regional Innovation Center „Ambitious Gabrovo" and Technical University of Gabrovo** are in charge of fostering innovative partnerships and technological advancements that propel the city's climate initiatives forward.

- **Mobilizing a Transition Team for Climate Action:** Central to our strategy is the Climate Transition Team—an elite group that combines expertise, passion, and dedication. This team, structured into specialized Expert Groups, works tirelessly to implement sector-specific strategies in buildings, energy systems, transport and mobility, waste and circularity, green infrastructure and industry. The team's work is coordinated by a Secretariat that ensures smooth communication, seamless execution, and the continuous flow of innovative ideas. Led by **Gabrovo Council for sustainable urban development**, this transition team is the driving force behind Gabrovo's climate ambitions, and its set to inspire other cities to follow suit.

Adaptive Monitoring and Continuous Improvement

Gabrovo's commitment to excellence is reflected in our rigorous approach to monitoring and continuous improvement. This process is supported by the collaborative efforts of key stakeholders to ensure that progress is not only tracked but also strategically enhanced over time:

- **Annual Reviews and Dynamic Updates:** At least once per two years, **Gabrovo Council for sustainable urban development** conducts a thorough review of our progress. This review is not just a formality—it's an opportunity to recalibrate our strategies based on the latest data, emerging trends, and stakeholder feedback. Adaptive management is at the core of our process, allowing us to evolve and refine the CCC as we move forward.

- **Engagement-Driven Feedback Mechanisms:** Feedback is a cornerstone of our strategy. We've created multiple channels—public consultations, workshops, and digital platforms—where citizens and stakeholders can share their insights. This continuous loop of feedback ensures that our actions are aligned with the community's needs and aspirations, making the CCC a living document that evolves with the city. **Gabrovo Council for sustainable urban development** is particularly involved in ensuring that feedback mechanisms are robust and inclusive, fostering broad-based participation across the region.

Principles Guiding the CCC Implementation: Leading by Example

Gabrovo's Climate City Contract is guided by principles that not only ensure our success but also position us as a leader and ambassador for climate action in the region:

Climate Justice and Equity: We believe that climate action must be inclusive and just. Gabrovo is committed to ensuring that all communities—especially the most vulnerable—benefit from our sustainability efforts. We aim to bridge social inequalities and create opportunities for every resident to participate in and benefit from our transition to a low-carbon future. **The Regional Inspectorate of environment and water** ensures that regional initiatives align with these equity principles, maximizing their reach and impact.

Multi-Level and Multi-Stakeholder Governance: Effective climate action requires coordinated efforts at all levels of governance. Gabrovo is committed to working closely with regional, national, and international partners to ensure that our policies are synergistic and aligned with broader climate goals. This multi-level governance approach maximizes the impact of our initiatives and fosters strong partnerships that transcend borders. The commitment of the **Mayor of Gabrovo Municipality**, **Rector of the Technical University**, and **Chair of Board of the Regional Innovation Center** exemplifies this collaborative spirit, ensuring that our strategies are comprehensive and well-coordinated.

Innovation and Flexibility: We embrace innovation as a catalyst for change. Gabrovo is open to experimenting with new technologies, methodologies, and ideas that drive our climate strategy forward. Flexibility is key—we are prepared to adapt to new challenges and opportunities, ensuring that our actions remain relevant and effective. All mentioned parties play a pivotal role in fostering these innovative efforts, ensuring that Gabrovo stays at the forefront of climate technology.

Stakeholder Empowerment and Citizen Engagement: Gabrovo's success is rooted in the active participation of its citizens and stakeholders. We are committed to empowering our community through transparent communication, participatory decision-making, and ongoing education. Our goal is to foster a sense of ownership and pride in Gabrovo's climate journey, making every resident a partner in our mission.

The Gabrovo Climate Transition Team is integral to these efforts, providing educational and engagement opportunities that empower the community. To ensure the efficient and successful implementation of Gabrovo's Climate Change Commitment (CCC), a dedicated transition team was established by Mayor Tanya Hristova in July 2024. This team operates under the oversight of the Gabrovo Council for Sustainable Urban Development, which is responsible for approving the integrated territorial investments outlined in the Gabrovo Integrated Development Plan 2027.

The transition team's composition is diverse and dynamic, involving not only Gabrovo Municipality's administration but also representatives from the quadruple-helix sectors. These sectors include regional and national authorities, business leaders, academia, and healthcare professionals.

The transition team's structure and responsibilities are carefully organized to leverage the unique skills and knowledge of each member. While maintaining simplicity, the team ensures effective communication. Their multifaceted duties include synchronizing efforts across various sectors, aligning initiatives with climate neutrality objectives, and fostering collaborative communication among stakeholders. This approach cultivates teamwork and mutual respect

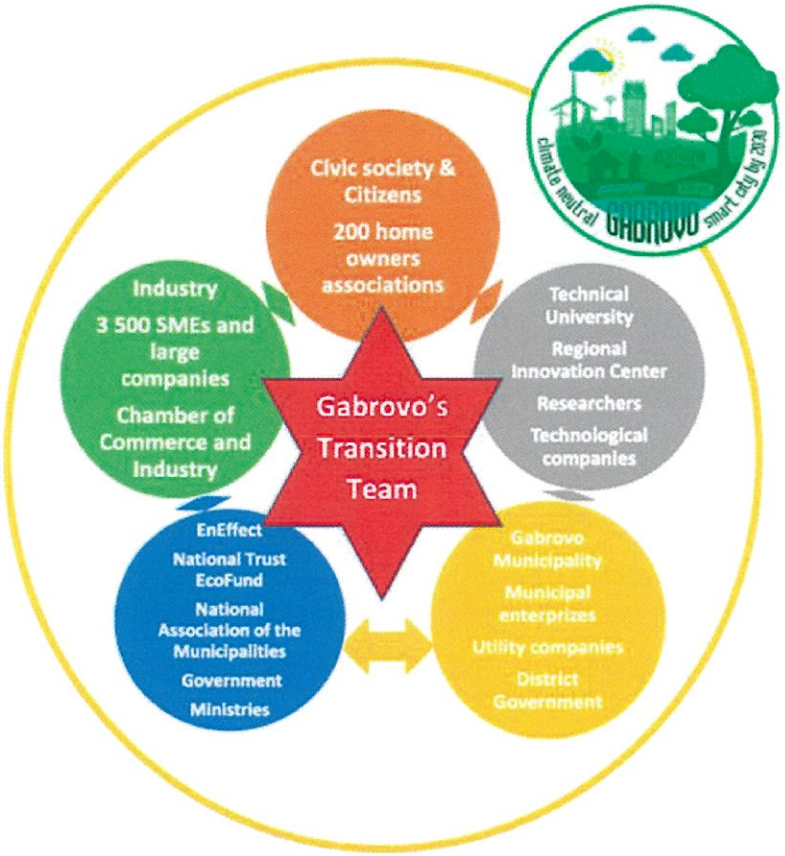
Gabrovo CCC has full political commitment the driving force behind Gabrovo's journey towards climate neutrality. Their dedication, expertise, and collaborative spirit are what will guide us towards a sustainable future. Together, we are making Gabrovo a leader in climate action.

The purpose of the transition team is to develop a new inclusive model for urban development by involving various stakeholders, ensuring transparency and information exchange during the concept development stage, and improving interactions to encourage civic participation in decision-making. The lessons learned, which led to the formation of this team, emphasize the importance of coordinated dialogue, inclusive invitations for participation, and engaging the local community in the use, implementation, and long-term sustainability of projects. The transition team plays a crucial role in ensuring a smooth adaptation to evolving urban development needs, bridging the gap between planning and execution while fostering community trust and engagement. Key lessons include the need for structured processes with clear rules, distributed responsibilities and tasks, and a balance between formal and informal communication. Additionally, utilizing unified portals for comprehensive and up-to-date information, simplifying project presentations for the general public, integrating communication channels, and disseminating timely information are essential. These insights highlighted the need for a dedicated team to address these aspects effectively.

The rationale behind focusing on these five areas is Gabrovo's extensive experience in these domains. The Gabrovo municipality has been engaged in projects within these areas for years, thereby accumulating substantial expertise and knowledge. This experience, coupled with the already achieved reductions in CO2 emissions and the implementation of new greenhouse gas (GHG) measures, underscores the municipality's commitment to sustainable development towards climate neutrality by 2030.

The Transition Team, overseen by the Council for Sustainable Urban Development and facilitated by the Directorate for Sustainable Development, is a crucial component of Gabrovo's climate neutrality journey. The team's interconnectedness is evident in its focus on five key domains: energy systems & built environment, mobility and transport, waste and circular economy, and green infrastructure & nature-based solutions. To address these areas

effectively, five groups of experts and stakeholders are allocated based on their expertise. The Directorate for Sustainable Development facilitates the work and communication between these groups, ensuring a two-way process and fostering collaboration among all participants. This interconnected approach, guided by the team's lessons learned and the Council's political commitment, aims to develop an inclusive model for urban development that prioritizes stakeholder involvement, transparency, and effective communication.



Transparency and Accountability: Building trust is essential for long-term success. Gabrovo is dedicated to maintaining open channels of communication, providing regular updates on our progress, and holding ourselves accountable to the highest standards. Our commitment to transparency ensures that all stakeholders are informed, engaged, and confident in our shared future. The collaboration between all committed parties in Gabrovo ecosystem ensures that all actions are transparent and accountable, fostering trust across all levels of governance.

CO-CREATION OF THE CCC FOR GABROVO

Gabrovo's Climate City Contract embodies a pioneering approach to urban climate governance, driven by a shared vision for achieving climate neutrality by 2030. This vision is supported by a comprehensive strategy that delineates the pathways to reach this ambitious goal. Emphasizing the importance of co-creation and collaborative leadership, the contract engages all stakeholders on local, regional and national level comprising of representatives of the quadruple helix and fosters continuous learning from the process that is led by Gabrovo Transition Team. The execution of Gabrovo's CCC is spearheaded by the city administration, which actively involves multiple stakeholders at various governance levels. This includes local government, businesses, academia, and civil society. By fostering a collaborative leadership approach, the city ensures that diverse perspectives and expertise are integrated into the decision-making process, enhancing the effectiveness and inclusivity of climate actions. Through this inclusive and adaptive approach, Gabrovo is well-positioned to attain its climate neutrality objectives and serve as an example for other cities.

However to accurately depict the reality of Gabrovo in terms of public works, decision-making, governance, and authority, it is essential to clarify the following:

Any financial or significant decision concerning the city of Gabrovo must receive mandatory approval from the Municipal Council, covering both budgetary and decision-making aspects. Additionally, all procedures related to these decisions must comply with public procurement regulations, ensuring transparency, fairness, and adherence to legal standards. This process can sometimes require technical time to pass the vote and come into effect.

Despite the constraints of a limited municipal budget and the challenges Gabrovo faces due to centralized funding and governmental bureaucratic delays, the city has successfully secured a substantial proportion of European and national funding for its projects. Compared to other Bulgarian municipalities, Gabrovo has also contributed a significant amount of co-financing from its own municipal budget, allowing it to continue making progress across all sectors, as outlined in the Gabrovo CCC Action Plan.

Gabrovo is committed to achieving climate neutrality and is prepared to implement a comprehensive Climate city contract plan. To ensure the success of this ambitious goal, the city has adopted several key strategies:

Transparency and Accountability: To ensure transparency and accountability in the implementation of the CCC, Gabrovo has established regular monitoring and reporting mechanisms. These mechanisms provide stakeholders and the public with timely updates on the progress of climate initiatives, fostering trust and ensuring that the city remains accountable to its commitments.

Stakeholder Engagement: The co-creation process of the CCC involves active participation from all relevant stakeholders. This engagement ensures that the diverse perspectives and expertise of local government, businesses, academia, and civil society are integrated into the CCC. By involving stakeholders in the planning and execution phases, Gabrovo enhances the relevance and acceptance of its climate policies.

Citizens' Involvement: Citizens play a crucial role in the co-creation process of the CCC. They contribute ideas, feedback, and support for climate actions through public consultations and participatory workshops, studies and activities. This inclusive approach ensures that the voices of the community are heard and considered, fostering a sense of ownership and commitment to the city's climate goals.

Iterative Learning: The CCC is designed as a living document that evolves based on continuous learning and feedback from stakeholders. This iterative process will allow Gabrovo to identify and address obstacles, ensuring that the CCC remains relevant and effective over time. By embracing a culture of continuous improvement, the city can adapt to new challenges and opportunities in its pursuit of climate neutrality.

The ongoing political crisis in Bulgaria, which has persisted for several years, along with the absence of a stable government, has significantly delayed the implementation of the Recovery and Resilience Plan, the national programs for 2021-2027, and other related initiatives. These governmental delays and decisions have had a considerable impact on municipalities across the country. Local governments have struggled to access necessary funds and resources, hindering their ability to carry out critical projects and improvements. The uncertainty and instability at the national level have also disrupted the planning and execution of local initiatives, causing delays and setbacks in municipal operations and development efforts. In response to these challenges, the CCC will focus on five key areas: energy efficiency and the built environment, mobility and transport, waste management and the circular economy, green infrastructure, and nature-based solutions. The CCC will continue to involve and engage a broad range of stakeholders and citizens in relevant project activities and decision-making processes.

GABROVO PUBLIC ENGAGEMENT EXPERIENCE AND GOOD PRACTICES

The involvement of private stakeholders is crucial for the execution of the local climate policy, and the municipality is actively working to engage them in sustainable energy projects and initiatives.

- **Workshops and Brainstorming Sessions:** Regularly organized to gather ideas from diverse community members through events such as energy community, meetings of the private property owners, meetings of the Council for Sustainable urban development that comprises of various members of society – administrative bodies, academia, business, NGOs – RIC "Ambitious Gabrovo" is especially prominent for the city as it brings together academia, business and administration together to tackle and work on issues and projects.

- **Collaborative Projects**: continue project work that involves citizens, local organizations and municipal experts on projects pertaining to culture, sustainable governance, mobility and energy efficiency, also adapting to climate changes that has commenced last year for the municipality of Gabrovo. Projects that Gabrovo is involved in like AMIGOS, MountResilience, SOTERIA work with a broad stakeholder groups from the community comprising of members of – Technical University of Gabrovo, RIC "Ambitious Gabrovo", Regional Governor's office, ENERGO-PRO Gabrovo (Electricity Supply Company), Water Supply and Sewerage Gabrovo (local water utility company), Fire department, Police department, Tota Venkova General Hospital (MBAL Tota Venkova), National statistics institute, "Municipal Enterprise 'Urban Development', Insurance companies, Smart behavior – specializing in human behavior and change, and others.

- **Feedback Mechanisms:** Continuous collection of feedback through surveys, public forums, and social media that has been an ongoing practice for Municipality of Gabrovo. Apart from the websites for events that take place – chistogarovo.bg; Uzana Polyana Festival; radio programmes, FB page, Gabrovo has created a new platform dedicated specifically for projects on climate change and adapting to it. It is called FORUM. It is expected to be launched in the fall 2024.

2. Engaging Citizens

Engaging the community is a cornerstone of the CCC's mission. This is achieved through:

- **Public Events:** Gabrovo is hosting a variety of events such as festivals, concerts, and art exhibitions that are open to all throughout the year. There are seasonal festivals that take place during the year, but also a diverse array of artists that participate in the cultural life of the city – from classical and modern music through theatre, exhibitions and festivals.
- **Educational Programs:** Gabrovo offers a number of workshops, classes, and lectures that cater to different age groups and interests pertaining to health, mobility, energy systems, urban development and ecology. A number of these programs take place in the public, however there are those that cater specifically for children
- **Volunteer Opportunities:** Encouraging citizens to participate in the CCC's activities by volunteering, which fosters a sense of ownership and involvement.

3. Governance Structure

The governance of Gabrovo CCC is designed to be inclusive and transparent:

Gabrovo's Climate Action Plan aims to foster collaboration and co-creation among stakeholders to achieve climate neutrality by 2030. A key principle of this plan is transparency and accountability, ensuring that decision-makers are held responsible for their actions and that these decisions are openly discussed and reported. Gabrovo aims to focus on five main domains of climate change:

1. **Energy Systems and Built Environment**
2. **Mobility and Transport**
3. **Waste and Circular Economy**
4. **Green Infrastructure**
5. **Nature-Based Solutions**

Each of these domains has an appointed leader who will work on issues specific to their area of expertise and relevant stakeholders. They will also be accountable for organizing and carrying out the initiatives within their respective areas of responsibility while communicating with the Council for Sustainable urban development and Directorate for sustainable development. Each individual domain is integral to Gabrovo's sustainable transformation and contributes accordingly to its specific goals.

To ensure transparency, the Municipality of Gabrovo will publicly share information about its climate actions, including decisions, implementation measures, and results. This will enable citizens and stakeholders to stay informed and contribute to the goal of climate neutrality.

The CCC plan emphasizes inclusivity and diversity, ensuring that all citizens, regardless of age, gender, education, place of residence, or socioeconomic status, have an opportunity to participate. The process will be designed to be accessible to all interested individuals, avoiding any form of discrimination or harassment.

Gabrovo has a long history of involving citizens in the process of shaping their community. This tradition of citizen participation is essential for achieving climate neutrality by 2030.

Social responsibility and inclusion is of paramount importance for reaching our climate goals. Gabrovo Municipality has a long history of citizens' engagement and thus continues to work on projects while seeking active citizen involvement, working collaboratively with local stakeholders to create systemic change.

The Municipality of Gabrovo is actively working to empower its citizens and foster a sense of belonging and responsibility for climate-related issues. They have established several points of contact between citizens and local government actors, including, but not limited to the following parties:

- **District Information Point**: A one-stop shop for information and assistance.
- **RIC "Ambitious Gabrovo"**: A resource centre for climate initiatives and smart specialization.
- **Monthly Vending Machine Events**: Regular events to engage the community.
- **Planned and Ad Hoc Meetings**: Opportunities for open dialogue and collaboration on everyday climate-related issues, such as waste disposal.
- **Open door policy** - Additionally, Gabrovo has an open-door policy, allowing citizens to call, visit, or receive advice on their issues via phone or personal visits to the municipality. Citizens can also book meetings with the mayor during regular open days.

This proactive approach aims to create a collaborative environment where citizens feel involved and responsible for addressing climate challenges in their community.

The processes of informing, monitoring and joint learning are crucial to ensure that climate actions are on track. However, this can be challenging due to the diverse range of stakeholders involved and the focus on individual and corporate actions. To address these challenges, the municipality will prioritize inclusivity in citizen participation measures, ensuring that underrepresented groups, including those from different age, gender, ethnic, religious, and minority backgrounds, are represented.

Joint learning provides a valuable platform for sharing knowledge and experiences among stakeholders and the community. By integrating a citizen-cantered approach in the already established bureaucratic one, Gabrovo aims to set a new and innovative way for citizen's inclusion in the decision making. As clarified in the action plan, the decision making process for municipality of Gabrovo is oftentimes burdensome as it involves approval by the city council. Any decision that pertains to a new activity, project and or practice, and financing has to go through the city council's approval. Gabrovo's City Council is responsible for a wide range of activities that shape the community, namely

- Urban Development: They oversee the planning and development of infrastructure projects, including roads, public buildings, and parks.
- Public Services: This includes waste management, water supply, and public transportation.
- Education and Culture: They support local schools, libraries, and cultural institutions, organizing events and programs to enrich community life.
- Economic Development: The council works to attract businesses and investments to the area, fostering economic growth and job creation.

- Environmental Initiatives: They implement policies and projects aimed at sustainability and environmental protection.

For the Gabrovo CCC and its strategic implementation an array of various stakeholders from municipality – administrative and other departments, the Council for sustainable urban development, actors from municipal enterprises will be involved. But also service staff, including transport, waste management actors, universities, schools, national actors, and the industrial sector, will be involved in the process. Given the significant contributions of the transport, mobility, and industrial sectors to Gabrovo's emissions, the city will prioritize their involvement in assessing and implementing measures to bridge the gap towards climate neutrality. Technical meetings with sector leaders and dynamic sessions will be held to explore innovative approaches and inspire systemic, demand-driven actions.

By adopting a collaborative and inclusive approach, Gabrovo aims to create a sustainable and resilient future for its citizens and communities.

As one of the most proactive Bulgarian municipalities, Gabrovo places significant emphasis on strong cooperation with various levels of governance, including regional, national, and European. National-level policies and actions support capital allocation toward achieving net zero, including in cities. However, the prolonged political crisis has become a major obstacle, delaying access to available funding and the implementation of planned activities and projects. Citizen involvement is essential for achieving the goals of the CCC. Direct engagement of residents in various activities, including design and implementation, ensures their active participation in initiatives. These citizen engagement strategies aim to provide meaningful opportunities for residents to connect with the narrative and purpose of the CCC actions, fostering a deeper collective understanding, enabling co-creation, encouraging a sense of ownership of Gabrovo's climate policies, and stimulating local investment. By fostering a culture of collaboration and shared responsibility, Gabrovo aims to not only meet its climate targets but also to inspire lasting, sustainable change that will benefit future generations. The involvement of businesses, NGOs, and educational institutions will further amplify the impact, ensuring that innovation and expertise are fully utilized in the city's climate journey. Through these combined efforts, Gabrovo seeks to position itself as a national leader in sustainable urban development, demonstrating that meaningful change is possible through collective action. A comprehensive citizens' engagement strategy will be developed as part of the NetZero Hero project. This strategy will include several key components: community surveys, co-creation workshops, pilot projects and demonstrations, capacity building and training for citizens, and community outreach and awareness campaigns.

Gabrovo is committed to achieving climate neutrality by leveraging the expertise and tools provided by administrative, financial, citizen, and academic institutions. By working closely with all citizens, Gabrovo ensures that its efforts align with the city's vision of being clean, green, smart, and sustainable, while adhering to the principle of "no one is left behind".

5 Signatories

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

Name of the signatory (organisation)	Sector / Domain / Level of operation[2]	Legal form	Name of the responsible person	Position of the responsible person
Gabrovo Municipality	All sectors of Gabrovo CCC	Local authority	Tanya Hristova	Mayor
Technical University of Gabrovo	All sectors of Gabrovo CCC	State university	Prof. Iliya Zhelezarov	Rector
Regional Innovation Center «Ambitious Gabrovo»	All sectors of Gabrovo CCC	NGO	Nikolinka Hinkova	Chair of Board

[1] Climate City Contract signatories may be individuals or organisations. They ideally include national and/or regional governments, for example concrete agreements/ commitments made through the multi-level governance engagement processes supported by NetZeroCities, CapaCities, and other emerging national level initiatives.
[2] Please mention if the organisation is active at local, regional, national, or international level.