NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

2030 Climate Neutrality Action Plan of the City of Bratislava

BRATISLAVA

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Table of Contents

Table of Contents 2
Summary 3
List of figures 4
List of tables 4
Abbreviations and acronyms 4
Introduction 6
Part A – Current State of Climate Action 10
Module A-1 Greenhouse Gas Emissions Baseline Inventory 10
Module A-2 Current Policies and Strategies Assessment 17
Local level policies 17
Regional level policies 19
National level policies 20
Quantification of the emission gap 20
1.1 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality 24
2 Part B – Pathways towards Climate Neutrality by 2030 37
2.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways 37
2.2 Module B-2 Climate Neutrality Portfolio Design 51
3 Module B-3 Indicators for Monitoring, Evaluation and Learning 80
4 Part C – Enabling Climate Neutrality by 2030 83
4.1 Module C-1 Governance Innovation Interventions 83
4.1.1 Internal Governance 83
4.1.2 External governance 84
4.1.3 Engaging Citizens in Bratislava's Climate Transition 87
4.1.4 Energy poverty and just transition 89
4.2 Module C-2 Social Innovation Interventions 90
5 Outlook and next steps 93

Summary

Bratislava is one of the 112 European cities selected to participate in the EU Mission for 100 Climate-Neutral and Smart Cities by 2030. This designation reflects the city's commitment to bold, inclusive, and transformative climate action. Although full climate neutrality by 2030 is not currently achievable in Bratislava due to structural and systemic limitations, the city has set a science-based target to reduce per capita emissions from 5.65 tCO_2e in 2005 to 2.1 tCO_2e by 2030. This represents a 63% reduction and reflects both ambition and realism, while paving a clear way for accelerated climate neutrality journey after 2030 with the support of a city-wide stakeholder coalition.

The Climate City Contract Action Plan builds on existing policies, including *Bratislava 2030*, and serves as a bridge between high-level visions and concrete actions. It is structured around three main modules: baseline assessment and policy context (Module A), action portfolios and impact pathways (Module B), and enabling governance and stakeholder engagement (Module C).

The 2022 greenhouse gas (GHG) inventory reports total emissions of 1.67 million tCO_2e. Major emission sources include buildings, transport, and waste, while emissions from industrial processes, agriculture, and land use (regulated at the national or EU level) are excluded. The city itself only directly controls about 11% of emissions, highlighting the importance of cooperation with businesses, institutions, residents, and national stakeholders.

The CCC Action Plan proposes a series of flagship measures to accelerate emission reductions. These include replacing all public lighting with LED systems, reducing energy use in municipal buildings by 35%, and meeting 20% of municipal electricity needs with renewable energy. In the transport sector, the city plans to construct 10 kilometres of new tram lines and 42 kilometres of cycling infrastructure. The plan also prioritizes waste-to-energy facility modernization, and in the building sector, aims for a 23% energy cut in the residential sector and 38% in the tertiary sector. Additionally, nature-based solutions will be supported through the planting of 25,000 trees and shrubs, park revitalisation, and sustainable forest management.

Bratislava has taken concrete steps to enhance its climate governance, including establishing a dedicated Climate Office, appointing a Vice-Mayor for Climate, and launching new participatory bodies such as the Climate Advisory Committee and Climate Leaders Forum. A key innovation proposed by the CCC is its emphasis on engaging children and young people, who are disproportionately affected by climate change, and ensuring intergenerational equity in the city's transition efforts. The city will use existing participation platforms, such as Climathon and City for Children programme, to ensure that specific needs and views of children and young people are represented in the city climate policies and projects.

While local ambition is strong, national-level policies remain insufficiently aligned. As such, the CCC not only functions as an action plan but also as a strategic advocacy tool to push for improved coordination and systemic reform at higher levels of governance.

Despite challenges, Bratislava is positioning itself as a Slovak city leader in climate action. Its approach demonstrates that even under structural constraints, cities can drive meaningful transformation through innovation, collaboration, and political will. The CCC offers a scalable model and pilot solutions for peer cities across Slovakia the Central European region seeking to align local climate efforts with European and global goals.

List of figures

The list of figures **identifies the titles and locations** (page numbers) of **all visual elements:** figures, drawings, photos, maps, etc. used in the CCC Action Plan.

Figure №	Figure title	Page №
Figure 1	Map of the CCC process in Bratislava	8
Figure 2	Projected greenhouse gas emissions until 2030	12
Figure 3	Greenhouse gas emissions change between 2005 and 2022 by sectors	13
Figure 4	Greenhouse gas emissions breakdown by sectors	13
Figure 5 & 6	Energy consumption by type of fuel and respective greenhouse gas emissions	14

List of tables

The list of tables **identifies the titles and locations** (page numbers) of **all tables** used in the CCC Action Plan.

Table title	Page №
A-1.1: Final energy use by source sectors	10
A-1.2: Emission factors applied	11
A-1.3: GHG emissions by source sectors	11
A-1.4: Activity by source sectors	11
A-2.1a: Emissions Gap (kt CO2e) based on the SECAP	20
A-2.1b: Emissions Gap (kt CO2e) based on NZC Planner	21

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
AFOLU	Agriculture, Forestry, and Other Land Use
BA	Bloomberg Associates
BSK	Bratislavský samosprávny kraj (Bratislava Self-Governing Region)
CSR	Corporate Social Responsibility
CNG	Compressed Natural Gas
DPB	Dopravný podnik Bratislavy (Bratislava Transport Company)
DH	District Heating
ERDF	European Regional Development Fund
ESCO	Energy Service Company
ESIF/ESI Funds	European Structural and Investment Fund
EU ETS	European Union Emissions Trading System
GHG	Greenhouse Gas
IPPU	Industrial Processes and Product Use
LULCUF	Land Use, Land-Use Change, and Forestry

MEL	Monitoring, Evaluaton and Learning
NECP	National Energy and Climate Plan
OLO	Odvoz a likvidácia odpadu (Bratislava Waste Management Company)
RES	Renewable Energy Source
SECAP	Sustainable Energy and Climate Action Plan
SIEA	Slovenská inovačná a energetická agenúra (Slovak Innovation and Energy Agency)
SUMP	It is a strategic planning framework used by cities and municipalities
TSB	Technické siete Bratislava (Bratislava Public Lighting and Networks Company)
WTE	Waste To Energy

Introduction

Bratislava is proud to be part of the EU Mission **100 Climate-Neutral and Smart Cities by 2030 (EU Cities Mission)**, a recognition of our commitment to bold, inclusive, and transformative climate action. Participation in the Mission provides not only visibility but also a vital platform to access innovation, technical expertise, funding opportunities, and peer collaboration with Europe's leading cities. Through it, Bratislava is accelerating its transition toward climate neutrality while improving quality of life for all residents—especially those most vulnerable to climate impacts, including children and young people, who face disproportionate risks from the long-term effects of climate change.

Before joining the Mission in 2022, Bratislava's climate efforts focused primarily on adaptation and sustainable mobility. The city launched several initiatives to strengthen local resilience, including revitalising parks and public spaces, halting commercial logging in urban forests, and expanding blue-green infrastructure. In parallel, significant investments in public transport laid the groundwork for reducing emissions and promoting healthier mobility choices.

Since being chosen as a Mission city, Bratislava has entered a new phase of climate action. The city established a dedicated Climate Office, created new leadership roles, and began integrating sustainability priorities into municipal planning, investment, and service delivery. In 2024, Bratislava adopted its first comprehensive **Climate Plan** based on the Covenant of Mayor's framework and shifted its focus decisively toward emission reductions and long-term systemic change.

The **Climate City Contract (CCC)** builds on this foundation and serves as a strategic extension of the city's first climate plan. Together, they represent a unified governance and implementation framework—streamlining planning, and monitoring. Above all, the CCC operationalises the Mission's core values—integrating innovation, citizen participation, and systemic governance into a single, mission-driven structure. A key innovation of the CCC is its focus on Bratislava's role not only as an implementer of local measures, but as a **coordinator and catalyst** of climate action across sectors. While the city directly controls only around 11% of local emissions, it recognises this as a mandate to mobilise and coordinate others—activating businesses, institutions, residents, and national-level actors to contribute to shared climate goals.

Through collaboration with public institutions, private companies, academia, and civil society, Bratislava is working to mobilise a city-wide transformation. A **structured and inclusive stakeholder engagement** process is at the heart of this approach. The city has formalised cooperation with key external actors—including NGOs, academia, and expert communities—through new governance mechanisms such as the **Climate Leaders Forum.** These structures are designed to provide technical guidance, promote transparency, and ensure a wide range of perspectives inform implementation.

Bratislava is also committed to enhancing **citizen engagement, with a particular focus on children and young people.** As the generation most affected by future climate impacts, their participation is essential not only for legitimacy but for ensuring that solutions reflect long-term needs and priorities. Building on the success of its 'City for Children' and Climathon initiatives, the city will work to incorporate the perspectives of younger generations in shaping climate policies, actions, and monitoring processes. Recognising that cities designed with and for children are better for everyone, Bratislava will promote inclusive processes that foster long-term climate awareness, ownership, and intergenerational equity.

While wholly committed to the target of the EU Cities Mission, careful analysis of the emission reduction trajectories, enabling conditions as well as barriers has shown that Bratislava commit to full climate neutrality by 2030. Instead, the city aims to **reduce per capita emissions to 2.1t CO_2e by 2030, a 63% reduction compared to 2005 levels.** This target reflects a realistic and science-based trajectory given the city's limited control over key sectors—such as energy, heating, and transport—and the current lack of systemic support and coordination from the national government. Bratislava also remains committed to laying the groundwork for achieving full climate neutrality well before 2050 by building strong coalitions, piloting innovative approaches, and advocating for enabling reforms at higher levels of governance. **The Mission Label would serve as a critical enabler of this effort** —helping Bratislava

unlock further investment, elevate its credibility with national institutions, and expand cooperation with other frontrunner cities across Europe.

By building on its progress to date and engaging all sectors of society, Bratislava is well-positioned to deliver a just and inclusive transition—and to serve as a model for other cities in Slovakia and across Central Europe. Bratislava stands ready to work with the European Commission, national actors, and peer cities to show that bold climate leadership is possible even under structural constraints. Despite challenges, Bratislava has already succeeded in catalysing institutional and policy change, demonstrating what is possible even in an unfavourable governance and financial environment. This makes Bratislava's approach innovative and relevant for cities across Central and Eastern Europe that face similar challenges.

CCC Action Plan Summary

The CCC Action Plan is structured in three modules:

- **Module A** presents Bratislava's climate baseline, including its most recent GHG inventory, policy context, and a detailed assessment of systemic barriers and sector-specific opportunities. Bratislava's Climate City Contract covers the city's entire administrative territory, including all 17 city districts, with a focus on major emission sectors such as buildings, energy, transport, and waste management. The 2022 GHG inventory reports total emissions of 1.67 million tCO_2e—representing a 30.3% reduction from the 2005 baseline—with per capita emissions dropping nearly 37%. The current analysis excludes emissions from industrial processes (IPPU), agriculture and land use (AFOLU), which shall be rectified in the next CCC iteration Emissions covered under the EU Emissions Trading System are excluded.

- **Module B** defines impact pathways and action portfolios for emissions reductions, outlining priority measures and indicators for monitoring, evaluation, and learning. Flagship measures proposed include: replacing all public lighting with energy-efficient LED systems; cutting energy consumption in municipal buildings by 35%; deploying renewable energy to meet 20% of the electricity needs of city-owned assets; and modernising the city's waste-to-energy facility to increase recovery and reduce landfill reliance. In transport, the plan calls for the construction of 10 km of tram lines and 42 km of new cycling infrastructure. In the building sector, energy consumption is to be reduced by 23% in the residential sector and by 38% in the tertiary sector – with the city supporting by various soft measures. The plan also aims to enhance urban resilience and biodiversity, including through the planting of 25,000 trees and shrubs.

- **Module C** focuses on the enabling environment—governance innovation, stakeholder engagement, and social innovation required to support and sustain systemic change. To support cross-sectoral action, the city established Climate Implementation Groups and a Steering Committee, ensuring alignment across departments and city districts. Externally, Bratislava partners with NGOs, academia, and businesses, through new governance structures like the Climate Leaders Forum, fostering co-creation and accountability. The city will also prioritize deeper and more targeted citizen engagement, focusing particularly on vulnerable groups and youth through existing initiatives like the *Mesto pre deti* programme and the annual *Climathon* event. The city also highlights energy poverty as a key concern for cooperation with the national government, with seniors in older buildings and residents facing summer heat vulnerability requiring tailored interventions.

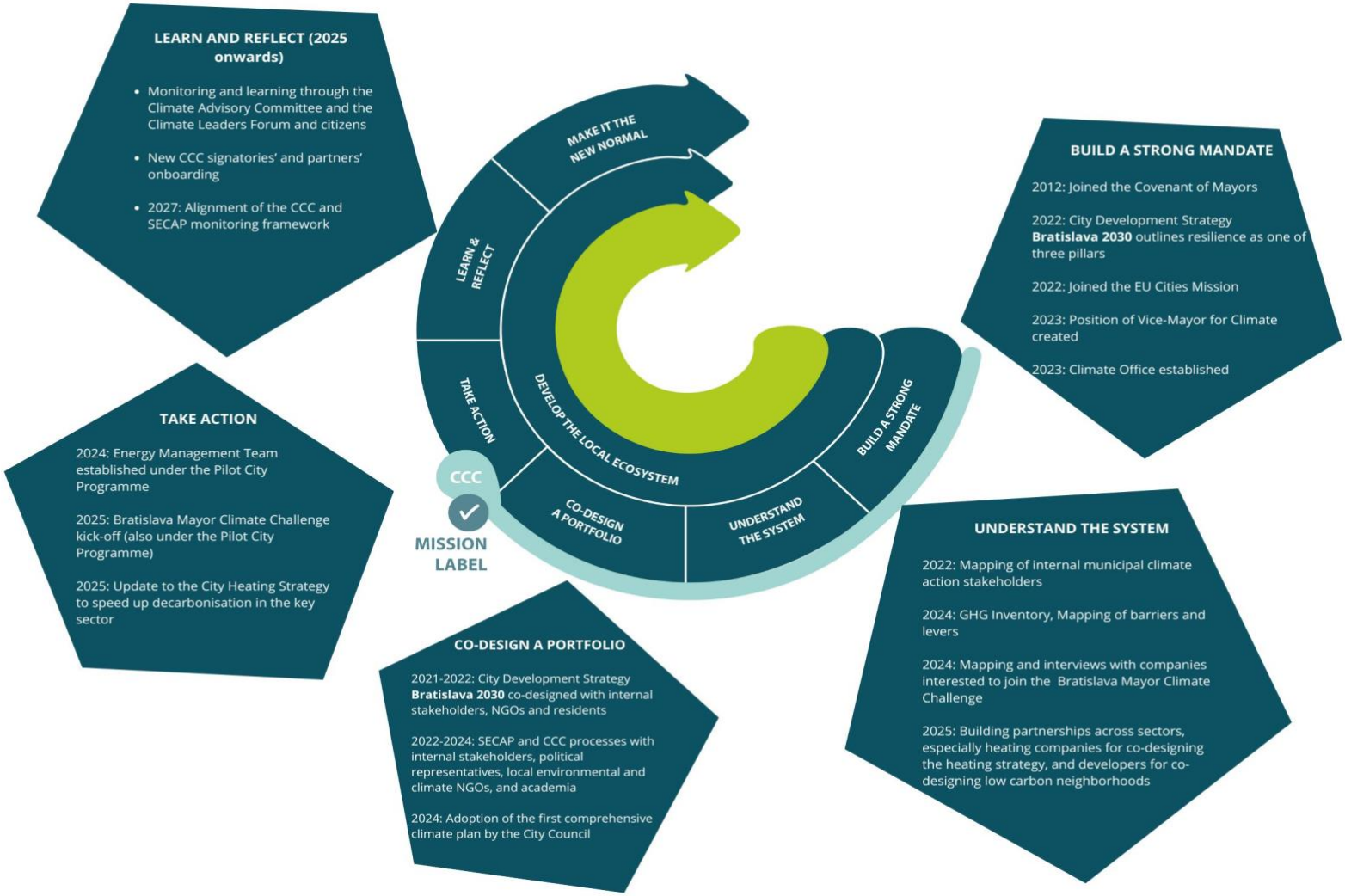
CCC Process in Bratislava

Since joining the EU Mission for 100 Climate-Neutral Cities in 2022, Bratislava has rapidly strengthened its climate governance and implementation capacity through a structured and participatory development process.

The city's climate target was first proposed in the Bratislava 2030 Strategy, which was co-created through an inclusive process involving a wide range of stakeholders and citizens (see Module A-2). This strategy also positioned climate resilience as one of the city's core development pillars. Following its acceptance into the EU Cities Mission, Bratislava focused on building the institutional foundations of its climate agenda—establishing a Vice-Mayor for Climate and a dedicated Climate Office to coordinate a whole-of-government approach and overcome siloed implementation and policymaking. Early efforts also concentrated on system mapping, barrier identification, and the development of the city's most comprehensive GHG inventory to date. Between 2022 and 2024, Bratislava co-developed its first Climate Plan and its strategic extension, the Climate City Contract (CCC), through close collaboration with internal stakeholders and civil society. These efforts culminated in the City Council's adoption of Bratislava's first integrated climate plan in 2024.

Implementation progressed swiftly. With support from the Pilot City Programme, the Energy Management Team was launched in 2024 to introduce strategic approach to energy efficiency, and new partnerships with the business sector were initiated through the Bratislava Mayor's Climate Challenge. In 2025, a thorough update of the City Heating Strategy will focus on accelerating decarbonisation in one of Bratislava's most emission-intensive sectors. Throughout 2025 and beyond, the city will prioritise learning, scaling, and fortification of stakeholder and citizen engagement —supported by newly established advisory and participatory structures (see Module C-1 Governance Innovation Interventions) By 2027, Bratislava aims to fully align its CCC and Climate Plan (SECAP) monitoring frameworks and to onboard additional signatories and institutional partners, thereby anchoring the city-wide transition in long-term governance. A visual map of this process is presented below.

Figure 1: CCC Process in Bratislava



Part A – Current State of Climate Action

Module A-1 Greenhouse Gas Emissions Baseline Inventory

Geographic Boundary

Bratislava is the capital and largest city of Slovakia, with a population of 476,922 residents (2022 census), projected to grow to around 488 000 residents by 2030 (demographic prognosis by Metropolitan Institute Bratislava, 2023). The city serves as the political, cultural, and economic hub of the country, hosting a diverse range of sectors including services, trade, retail, education, healthcare, and public administration. Bratislava's demographic and socio-economic characteristics provide a strong foundation for implementing comprehensive climate strategies. Key climate-relevant sectors include buildings/built environment, energy, transportation, and waste management, which are critical focal points for reducing greenhouse gas emissions and enhancing resilience.

The city's 2030 target encompasses the entire administrative territory of the City of Bratislava, including all urban districts. This comprehensive coverage ensures that every part of our city is involved in the collective effort to reduce emissions and enhance sustainability.

Bratislava's 2030 target Bratislava's greenhouse gas (GHG) inventory for 2022 follows the Covenant of Mayors (GPC-aligned) approach and covers the entire administrative territory, including all urban districts. It reports Scopes 1 and 2 across core sectors (stationary energy/buildings and energy systems, transport, and waste) and forms the basis for the city's 2030 target and action planning. This is the city's first comprehensive, fully CoM-aligned inventory, which required integrating multiple administrative and technical datasets; as a result, several categories exhibit initial data gaps that we are aiming to systematically close until the next CCC iteration in 2027.

Exclusions & rectification plan.

Consistent with Cities Mission guidelines, emissions from EU ETS-regulated installations (large industrial point sources) are excluded from the municipal GHG inventory. Emissions from port and airport infrastructure and ground operations not covered by the ETS are currently not reflected in our targets or actions, and existing data granularity does not allow us to confirm their full presence in the inventory. In the next iteration, we will incorporate these sources—adding them explicitly to the inventory and aligning the 2030 target and measures accordingly—subject to cooperation of the state-owned port and airport companies.

Under the methodology, IPPU (Industrial Processes and Product Use) and AFOLU (Agriculture, Forestry and Other Land Use) should be included; however, in this first iteration they are not yet quantified due to data availability limitations, and F-gases are likewise excluded at this stage.

Regarding Scope 3, we account for emissions from municipal solid waste landfilling occurring outside the city boundary; the city's landfilling rate was 9% in 2022. However, due to data and attribution uncertainties, these landfilling emissions are temporarily reported under Scope 1 and will be reallocated to Scope 3 once waste-flow data are fully verified.

To address these issues, the Climate Office will set up new internal methodology for data collection and will also engage external expertise to derive city-level data for IPPU and AFOLU drawing on national inventories and benchmarking, where necessary. The 2027 CCC update will also include corrected scope allocations, and a transparent exclusion register to maintain full clarity across iterations.

Descriptive Assessment of Current GHG Inventory

The first emissions inventory was carried out in Bratislava for the year 2005, which is considered the baseline year for all of the city's strategic documents, including the Sustainable Energy Action Plan (SEAP) adopted in 2014 (see more info in Module A-2 Current Policies and Strategies Assessment).

In 2022, the latest year for which comprehensive data is available, total emissions in Bratislava amounted to 1.67 million tCO_2e. This represents a 30.3% reduction compared to the 2005 baseline set in the SEAP. Per capita emissions decreased from 5.65 tCO_2e in 2005 to 3.51 tCO_2e in 2022, a reduction of nearly 37%. Emissions from City operations totalled 183,000 tCO_2e, accounting for 11% of Bratislava's overall emissions. The GHG inventory for Bratislava from 2022 provides a comprehensive overview of emissions across the following key sectors:

- Energy consumption at the city level (City, City organisations, municipal companies),
- Public lighting,
- Landfilling and wastewater management,
- Public transport,
- Private and corporate transport on the city's roads,
- Residential sector,
- Tertiary sector.

The GHG inventory was conducted for the consumption of the City of Bratislava and for all fuel and energy consumption in the city, including carbon dioxide, methane and nitrous oxide. The data was converted to carbon dioxide equivalents (CO2e) using global warming potential conversion factors according to the IPCC (2007) guidelines (CO2 = 1; CH4 = 25; N2O = 298). Emissions are calculated for electricity imported into the city and for district heating consumed in the sectors above, i.e. city operations, residential and tertiary sectors.

The city acknowledges uncertainties around transport emissions, stemming from an outdated transport and emission model and limited data availability from national agencies. Several internal projects—calibration of the transport model, transport surveys, and SUMP development —are underway (see part B), to provide a more solid basis for action planning and impact evaluation.

A-1.1: Final energy use by source sectors			
Base year	**2022** *		
Unit	**MWh/year**		
	Scope 1	Scope 2	Scope 3
Buildings	**2 862 187**	**1 334 900**	**N/A**
Electricity		1 334 900	N/A
Natural gas	1 774 125		N/A
Heat/cold	1 062 277		N/A
Diesel fuel	831		N/A
Brown coal	1 220		N/A
Black coal	1 324		N/A
Biofuel	22 410		N/A
Transport	**1 752 757**	**43 268**	**N/A**
Electricity		43 268	N/A
CNG	17 346		N/A
Diesel	995 764		N/A
Gasoline	597 343		N/A
Biofuel	142 304		N/A
Waste	N/A	N/A	N/A
Industrial Process and Product Use (IPPU)	N/A	N/A	N/A
Agricultural, Forestry and Land Use (AFOLU)	N/A	N/A	N/A
* Latest available emission data but we use 2005 as baseline year for emissions reduction ambitions.			

A-1.2: Emission factors applied						
(Please specify for primary energy type and GHG emission factor according to methodology used).						
tonne per MWh of primary energy						
Covenant of Mayors GHG Emission factors following the activity-based approach (IPCC 2006)						
Primary energy/ energy source	Carbon Dioxide equivalents (CO_{2eq})	Methane (CH_4)	Nitrous Oxide (N_2O)	F-gases (hydrofluorocarbons and perfluorocarbons)	Sulphur hexafluoride (SF_6)	Nitrogen trifluoride (NF_3)
Electricity (2021)	0.398					
Natural gas	0.202					
Heat/cold	0.257					
Diesel fuel	0.268					
Gasoline	0.250					

Brown coal	0.365					
Black coal	0.355					
Biofuel	0.001					

A-1.3: GHG emissions by source sectors					
Base year		2022			
Unit		tCO2eq			
		Scope 1	Scope 2	Scope 3	Total
Buildings		632 748	530 766	N/A	1 163 514
Transport		419 847	17 204	N/A	437 051
Waste		73 330*	0		73 330
Industrial Process and Product Use (IPPU)		N/A	N/A	N/A	N/A
Agricultural, Forestry and Land Use (AFOLU)	Sources (positive emissions)	N/A	N/A	N/A	N/A
	Sinks (negative emissions)	N/A	N/A	N/A	N/A
Total		**1 052 595**	**547 970**	**73 330**	**1 673 895**

* Scope 1 emissions now include all waste-related emissions from activities occurring within city boundaries, specifically: waste incineration at the city-owned WTE facility (Vlčie hrdlo), and wastewater treatment processes managed by the Bratislava Water Company. Scope 3 emissions connected with landfilling outside of the city boundary are categorised as Scope 1 due to waste data uncertainties.

A-1.4: Activity by source sectors			
Base year: 2022			
	Scope 1	Scope 2	Scope 3
Sector: Buildings	**632 748**	**530 766**	**N/A**
Municipality	15 679	34 231	N/A
Tertiary	300 599	307 809	N/A
Residential	316 471	181 363	N/A
Public lightning		7 362	N/A
Sector: Transport	**419 847**	**17 204**	**N/A**
City fleet	2 722	0	N/A
Public transport	32 971	17 204	N/A
Private and commercial transport	384 155	*	N/A
Sector: Waste	**N/A**	**N/A**	**73 330**
Waste treatment	0	0	69 842
Wastewater treatment	0	0	3 488
Sector: Industrial Process and Product Use (IPPU)	N/A	N/A	N/A
Sector: Agricultural, Forestry and Land Use (AFOLU)	N/A	N/A	N/A

* No data available from electricity distribution companies on EV chargers' consumption.

A-1.5: Graphics and charts

Figure 2: Projected greenhouse gas emissions until 2030

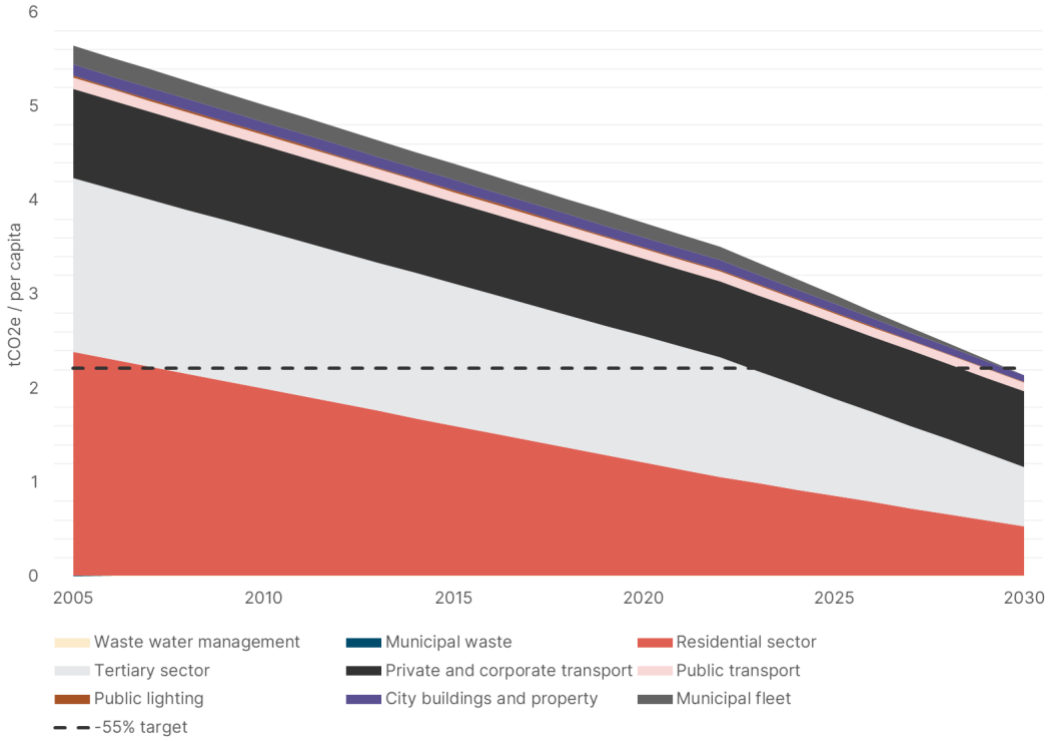


Figure 3: Greenhouse gas emissions change between 2005 and 2022 by sectors

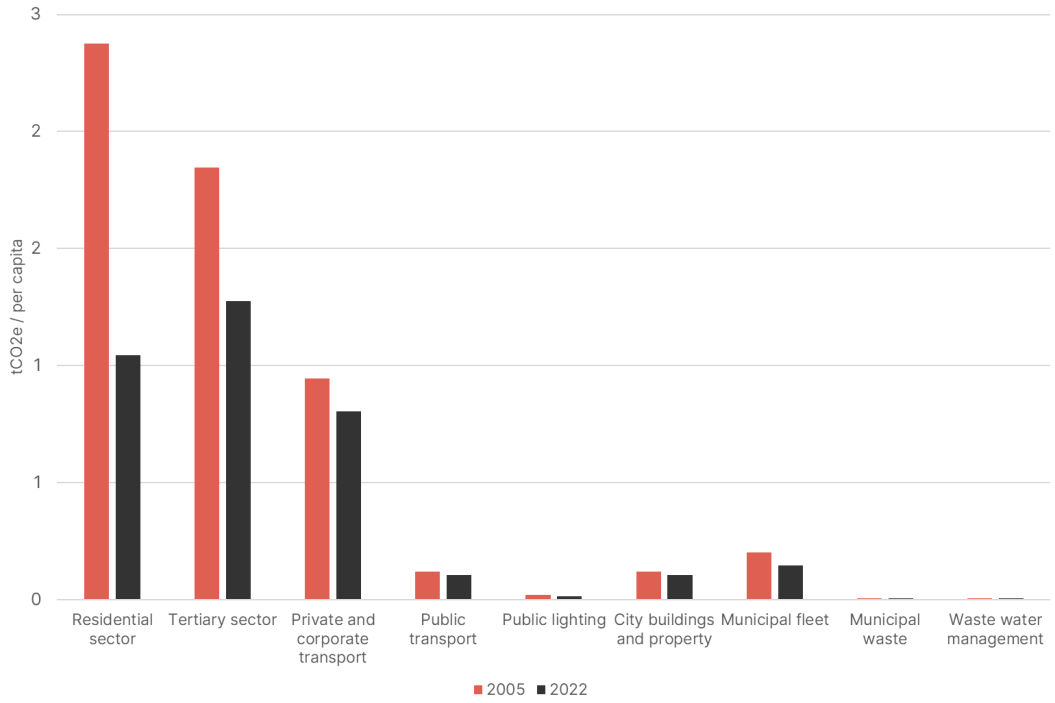


Figure 4: Greenhouse gas emissions breakdown by sectors

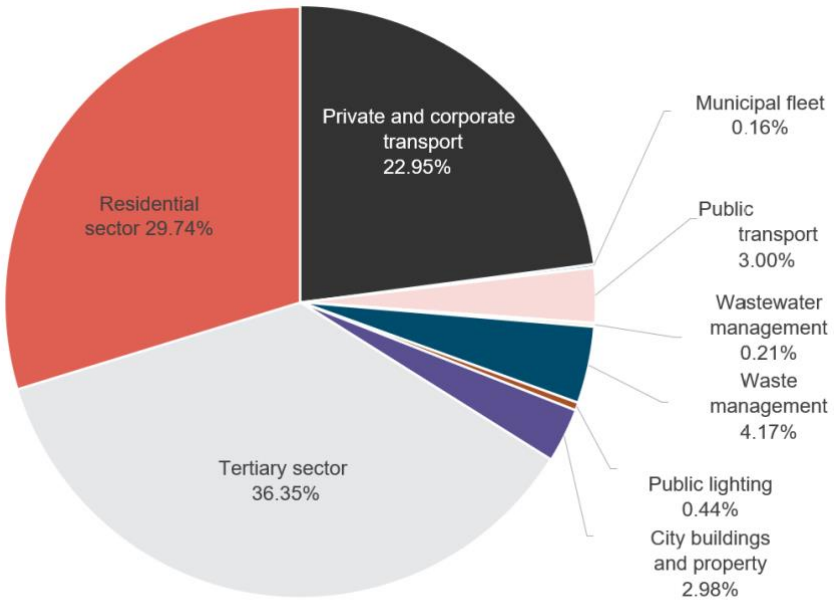
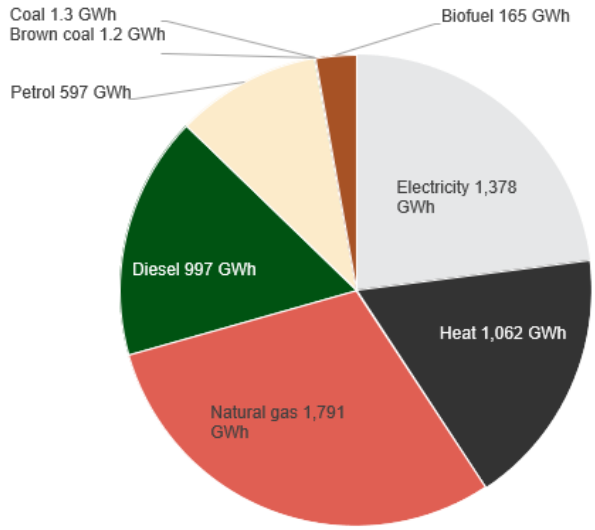
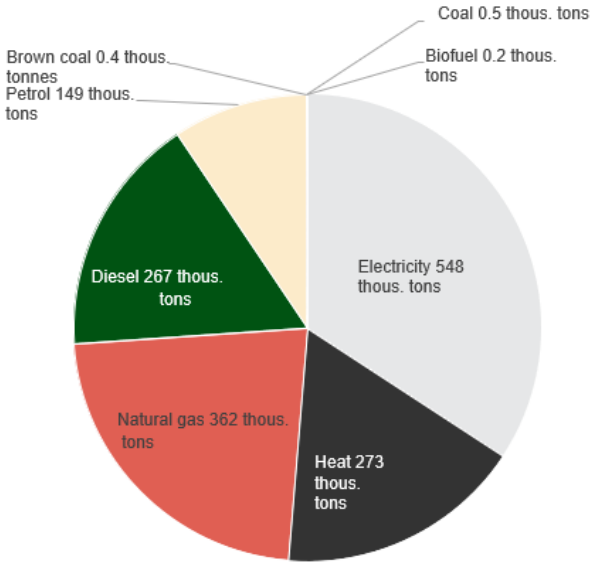


Figure 5 & 6: Energy consumption by type of fuel and respective greenhouse gas emissions


Coal 1.3 GWh
Brown coal 1.2 GWh
Biofuel 165 GWh
Petrol 597 GWh
Electricity 1,378 GWh
Diesel 997 GWh
Heat 1,062 GWh
Natural gas 1,791 GWh


Coal 0.5 thous. tons
Brown coal 0.4 thous. tonnes
Biofuel 0.2 thous. tons
Petrol 149 thous. tons
Electricity 548 thous. tons
Diesel 267 thous. tons
Natural gas 362 thous. tons
Heat 273 thous. tons

Module A-2 Current Policies and Strategies Assessment

This section provides an overview of the current policies, strategies, initiatives, and regulations at the local level that support Bratislava's fulfilment of its climate goals. It also identifies critical gaps and misalignments that need to be addressed to achieve the city's 2030 climate ambition. Specifically, the analysis focuses on how these plans contribute to emission reductions, and whether these contributions are already accounted for in the CCC Action Portfolio. At the end, the section summarises their overall impact and implications for future climate policy planning in Bratislava.

Local level policies

Bratislava 2030 (2022)

The strategic development of the city is guided by the Bratislava 2030 – City Development Strategy 2022 – 2030. The document outlines the city's development vision across three key areas: a caring, accessible, and resilient Bratislava. Below is a list of strategic objectives for each area, with climate change-related goals primarily included in the last category.

- **Bratislava is a city made for people (caring city)**
  C.1.1 A caring city for a dignified life for all. A city that ensures conditions for a dignified life for all its inhabitants, regardless of their living situation, background, or disadvantage.
  C.1.2 Cooperation as a principle. Bratislava as an open and inclusive city for all, which actively cooperates and involves the public in the planning and running of the city.

- **Bratislava is a healthy, vibrant 15-minute city (accessible city)**
  C.2.1 An accessible city. A 15-minute city that offers services, amenities, and access to sustainable transport within walking distance of residences.
  C.2.2 A city that offers quality culture and cohesive neighbourhoods. A city that develops and promotes the unique character of each neighbourhood and a diverse local culture.
  C.2.3 A green and healthy city. The city provides conditions for healthy living and opportunities for recreation, sports and healthy lifestyles through the protection and development of its green and blue infrastructure.

- **Bratislava is a city prepared to face future challenges (resilient city).** It is resilient and self-assured, successfully positioning itself within Central Europe. The city is strategically, professionally, and efficiently managed, with modern institutions and a digital, data-driven, and technical infrastructure that meets future needs. Bratislava is also making significant progress in reducing the impacts of the climate crisis.
  C.3.1 Bratislava, a recognised European metropolis. Bratislava is a strong metropolis in terms of its economic development and jurisdiction/competences, which benefits from its position as the capital of the Slovak Republic and an internationally renowned metropolis of the Central European region.
  C.3.2 A modern and efficient city. The management and operation of the city is efficient, transparent and fully digitised. It emphasises strategic prioritisation of projects, collaboration, and increasing the satisfaction of city employees. Environmental and social sustainability are important factors in the city's decision-making.
  C.3.3 A city ready to face climate change. The city is proactively preparing for climate change through sustainable management of natural resources and waste, reducing its carbon footprint and building its resilience to environmental threats.

The Bratislava 2030 document was transformed into a targeted strategy and project portfolio for the Sustainable Urban Development financial envelope, specifically allocated to Bratislava from the national ESI funds (**Integrated Territorial Strategy for the Sustainable Urban Development of Bratislava for**

2021 – 2027). This includes an ERDF allocation of 26.99 million EUR for areas such as smart city initiatives, energy efficiency, renewable energy sources, waste management and the circular economy, and blue and green infrastructure. Additionally, there is a 221.891 million EUR allocation from the Cohesion Fund for sustainable transport investments. Actions and projects funded by this envelope are clearly marked in the CCC Action and Investment Plans.

While the Bratislava 2030 Strategy provides the overarching vision and policy framework for the city's climate action and includes a quantified emissions reduction target, it stipulated that a new climate plan will propose and quantify reduction pathways. The CCC is thus positioned as a delivery mechanism for the strategic objectives set out in Bratislava 2030, translating high-level ambitions into sector-specific action portfolios.

Sustainable Energy Action Plan (SEAP)

The Sustainable Energy Action Plan (SEAP) of Bratislava, approved in January 2014, was a strategic document focused on short- and mid-term measures to improve the city's energy performance and reduce its environmental impact. Developed after the city joined the Covenant of Mayors in 2012, the plan commits Bratislava to reduce emissions by 20% by 2020 compared to 2005. Over 30 specific measures were proposed focusing on energy efficiency and public transport. The plan was being reported regularly to the City Council, however, not to the Covenant of Mayors platform, as continued political support was not secured. Mayor Matus Vallo in 2021 decided to renew active participation in the Covenant of Mayors and apply to the 100 cities mission.

Bratislava Thermal Energy Development Strategy (2019)

The Thermal Energy Development Strategy (also referred to as local heating strategy/plan) is a standard planning tool used by municipalities in Slovakia since 2004, introduced by Act No. 657/2004 Coll. on Heat Energy. According to § 31(b) of this act, every municipality is required to update its concept at least once every five years. The content and structure of the concept are defined by the Methodological Guideline issued by the Ministry of Economy of the Slovak Republic, which outlines the procedure for preparing municipal development plans in the field of heat energy. The concept plays a key role in urban planning, especially in guiding new development by specifying the acceptable sources of heat for different areas. In addition to this regulatory function, it also maps the current state of the city's heating infrastructure and proposes future development scenarios, supporting both strategic planning and sustainable energy policy. The last issue of the strategy was approved in January 2020, and did not present detailed decarbonisation scenarios for the Bratislava district heating system, but was rather a mapping tool of the status quo. The development of the new heating strategy is a key measure of our CCC, and should help define the necessary pathways towards reducing emissions from the heating sector.

Municipal Waste Management Strategy for Bratislava: Transitioning to a Circular Economy (2021 – 2026)

This strategy aims to transition from a linear to a circular economy by focusing on waste reduction, recycling, and resource recovery. It outlines interim milestones and projects for the city and its waste management company, OLO, to achieve a minimum 65% sorting and recycling rate/material recovery and treating the remaining waste through energy recovery by 2035. Some of the key projects, such as door to door collection, collection of organic waste or creation of a reuse centre (KOLO) have already been successfully implemented. In the next update to this plan, circular economy will be mainstreamed, with a particular focus on circular construction, which can significantly reduce material waste and GHG emissions. An update is to be developed, starting in 2025 and with a stronger focus on emission reductions and circularity.

City Master Plan (adopted 2007)

Urban plan is the city's single strongest tool to support sustainable development, decarbonisation and climate resilience. Until 2022, spatial development was governed by the Building Act of 1976, which,

despite numerous amendments, lacked the flexibility and tools needed to respond to contemporary environmental challenges. Slovakia adopted a new planning and construction legislation in 2022, aiming to streamline procedures, improve coordination, and integrate sustainability principles more effectively into urban development.

In Bratislava, these national reforms are complemented by local innovations led by the Metropolitan Institute of Bratislava (MIB). As part of the preparation for a new urban plan, MIB has developed and started piloting the Ecoindex, a legally binding planning tool designed to evaluate and improve the environmental performance of development projects. Tested in new development areas such as Mlynské Nivy, the Ecoindex replaces the outdated greenery coefficient and introduces a more comprehensive assessment of factors like water retention capacity, green roofs, shading, and biodiversity support. It serves both as a regulatory instrument and as a planning aid to guide climate adaptation at the neighbourhood level.

Based on the new legislation, the city has begun preparation of the new urban master plan following the enactment of new urban planning legislation in 2022 to replace the current plan dating back to 2007. One of the key inputs for the new plan will be the "Bratislava 2050" forecast study. This planning document outlines potential scenarios for urban development and its environmental impacts in the city up to 2050. It considers three possible scenarios based on major climate change projections and other demographic, societal and local trends. The analysis includes considerations of ecosystem service availability, the city's and its residents' vulnerability to climate change, and development potential in different areas of the city.

Through the new master plan, Bratislava aims to achieve a more sustainable and organised urban development, focusing on preventing urban sprawl, creating conditions for the 15-minute city, prioritising public transport and enhancing the quality of green-blue infrastructure. Energy planning has traditionally not been a focus of urban planners in Slovakia, therefore the CCC includes pilot decarbonisation measures in new development areas to test out new regulatory tools or voluntary cooperation with developers. The new legislative framework, mandates that all municipalities, including Bratislava, draft new urban plans that will replace the existing ones by April 2032.

While the new master plan will better integrate adaptation and decarbonisation principles, it does not yet include formal sectoral emissions reduction targets. Energy and heating—two of Bratislava's highest emitting sectors—remain only partially addressed in spatial planning. The CCC fills this gap by introducing pilot measures and voluntary standards, particularly for new developments, as a testbed for future regulatory integration.

Further relevant strategic documents of the city, e.g. *Urban Innovation Strategy - 2022; Urban Housing Policy Concept 2020-2030*, had been prepared prior to the CCC processes was initiated and therefore do not take into account the emission reduction or adaptation goals. The city's new commitments will thus need to be reflected in their future iterations.

Regional level policies

Sustainable Urban Mobility Plan of the Bratislava Self-Governing Region (2021)

The current Sustainable Urban Mobility Plan (SUMP) for the Bratislava region was developed by the Bratislava Self-Governing Region and includes the municipalities and districts of Pezinok, Malacky and Senec, thus addressing commuter flows within the region to Bratislava. While the SUMP emphasises sustainable transport and reducing CO2 emissions, it does not use a specific reduction goal as a basis for planning and monitoring. A revision of SUMP will therefore be required reflecting the increased ambition towards climate neutrality, even more clearly prioritising investments in public transport, active transport, and more effective traffic organisation and regulation over road infrastructure.

The Bratislava metropolitan region is a centre of economic development, with the highest traffic intensities in the country and encompassing several international traffic corridors. Thus, many of the key infrastructure investments proposed by the SUMP are to be implemented by the state, with the key player being the national railway operator, Železnice Slovenskej Republiky (ZSR) and the national

highways and road operators, Narodná dialničná spoločnosť and Slovenská správa ciest. Therefore, effective coordination between the city, region, national transport operators and the Ministry of Transport is crucial. However, this has been challenging in recent years due to largely centralised and often unstable planning amidst changing national administrations, while no coordination framework resulted from the regional SUMP. The current SUMP also lacks a direct emissions reduction trajectory toward 2030, limiting its usefulness as a binding instrument in the climate neutrality pathway. The CCC's sustainable transport action portfolio is largely in line with the SUMP, however focuses more specifically on key climate-aligned actions in Bratislava.

As per the requirement of the new regulation on TEN-T (2024) a new SUMP for the Bratislava urban node will be required, which should contribute to better coordination among stakeholders.

National level policies

Integrated National Energy and Climate Plan of the Slovak Republic (NECP)
In 2024, Slovakia's Integrated National Energy and Climate Plan (NECP) was scheduled for revision to align with the 'REPowerEU' and 'Fit for 55' packages.

The draft NECP submitted to the EC in 2023 targets a 22.7% reduction in greenhouse gas emissions from non-ETS sectors by 2030. However, the European Commission's assessment revealed that the NECP lacked projections for achieving this reduction, as well as targets for final energy consumption, energy efficiency, and GHG removals in Land Use, Land Use Change and Forestry (LULUCF). Furthermore, the renewable energy target was set at only 23%, whereas the recommended target is 35%. Bratislava's climate goals are more ambitious than national policy and depend on significantly boosting solar energy production and overcoming technical barriers in grid infrastructure, which rely on national-level policy. The gap between national and City-level ambition highlights a challenge that the City of Bratislava has to contend with when setting ambitious but realistic targets. As of March 2025, the NECP has not been submitted to the European Commission, nor has it been approved by the Slovak government.

As the NECP remains both delayed and under-ambitious compared to EU requirements, Bratislava's climate targets are effectively being pursued in a policy vacuum at the national level. The city's CCC is not only more ambitious but must account for many emissions reduction levers that are outside of municipal control, relying on systemic reforms and support that have yet to materialise. This reinforces the need for multi-level governance reform and stronger integration of city-level goals in national policy processes.

National Adaptation Strategy
The main national strategy document for adaptation to climate change is the 2018 update of the Adaptation Strategy of the Slovak Republic to Climate Change (National Adaptation Strategy*)*. The strategy is aimed at improving Slovakia's overall preparedness for the adverse effects of climate change, raising public and stakeholder awareness about the issue, and establishing coordination mechanisms to ensure the implementation of adaptation measures and synergies between adaptation and mitigation measures. The strategy takes stock of potential climate change impacts on various environmental systems and proposes key measures for each, including risk and crisis management.

Quantification of the emission gap

Despite Bratislava's progress toward building a robust local framework for climate neutrality, structural misalignments with national and regional policies continue to limit the city's full mitigation potential. Key strategies like the regional Sustainable Urban Mobility Plan (SUMP) do not place emissions reduction at their core, falling short of creating an enabling environment for ambitious municipal climate action. Meanwhile, Slovakia's National Energy and Climate Plan (NECP) remains delayed and insufficiently aligned with the EU's Fit for 55 targets.

In response, the actions provided in the CCC provide almost **full additionality to the business-as-usual (BAU) scenario. Beyond that, the CCC process functions as a strategic advocacy tool—enabling the city to spotlight systemic barriers, push for national policy reforms, and help build a more coherent multilevel governance framework capable of delivering shared climate goals**.

The first iteration of Bratislava's CCC Action Plan aims to reduce per capita emissions to 2.1 tCO_2e by 2030. This reflects a 63% reduction from the 2005 baseline of 5.65 tCO_2e per capita and a 38% drop from 2022 levels. In absolute terms, emissions are expected to remain at around 1.04 million tCO_2e in 2030, which represents 57% reduction in absolute terms compared to 2005 baseline. This science-based target was established through consultation with key city-level stakeholders and adopted through the city's political decision-making process. It reflects both ambition and realism, assuming limited contribution from national or regional policies.

Bratislava fully recognises that the current ambition is not aligned with the Cities Mission 2030 goals. Residual emissions are expected to persist by 2030, primarily in sectors where deep cuts are technically unfeasible or economically impractical within this horizon (selected industrial processes, segments of transport where full electrification is not yet viable, and municipal services still dependent on fossil fuels). In particular, full decarbonisation of the large-scale district heating system by 2030 is not realistic given its present reliance on fossil fuels and the fragmentation of assets under multiple concession agreements with city districts, which limits the City's immediate control over fuel choices and technology upgrades. The City is revising its local heating plan (a key CCC initiative) to maximise influence over new developments and is updating concession approaches to require credible decarbonisation plans. However, the absence of clear gas phase-out mandates and regulated retail gas price caps (set by national regulator ÚRSO) depress the business case for clean heat, lock in fossil dependence, and strain public finances, as flagged by the Council for Budgetary Responsibility. Even with swift national policy shifts, the heat transition will extend beyond 2030 due to infrastructure upgrades and the need to adapt the existing building stock. Bratislava also commits to avoid transitional pathways based on large biomass boilers, which it does not consider a sustainable long-term option.

Throughout the CCC, we strive to identify key barriers and the corresponding levers that could enable higher ambition. In summary, potential avenues—most of which depend on new evidence or external decisions—are:

i. Quantification of currently unaccounted transport emissions. Transport-emissions reductions from major CCC investments—especially tramline extensions and modernisation—are currently unaccounted for because the outdated transport/emissions model does not support impact projections. The forthcoming SUMP (Action 11) will align with the city's climate goals and its actions are designed to reduce (not merely maintain) transport emissions. In addition, a dedicated action (Action 12) in the portfolio will upgrade transport modelling, data, and monitoring so the SUMP measures can be translated into verified emissions reductions in the next CCC iteration.

ii. Increased EV uptake through additional support: EV uptake in Slovakia has lagged (5.3% of new registrations in 2023 versus the EU average of 22.7%). If national EV purchase subsidies are introduced, planned charging-infrastructure investments under the Recovery and Resilience Plan are delivered, and there is national support for low-emission zones (which districts are mandated to impose), EV adoption and overall transport decarbonisation could accelerate significantly. The Bratislava SUMP (please refer to Actions) will outline further supportive (incl. behavioural) actions by the City and other actors to improve EV expansion, beyond the currently proposed EV charger network expansion.

iii. Higher heat-sector ambition Higher ambition is contingent on key operators—especially MHTH—accelerating investments into new low-carbon heat sources and system integration. In parallel, the City will actively explore future DHS governance options, aligned with the City Heating Strategy and EU requirements (EED/EPBD). As a minimum scenario, this includes effort to re-tender/renegotiate the fragmented concessions under a centrally managed city framework with fewer, logically defined service areas, where contracts include binding decarbonisation and transparency obligations. The initial analysis will be a part the Heating Strategy (Action 20).

iv. Higher ambition in the building sector incl. operational and embedded carbon. Bratislava is working to advance voluntary measures to cut embodied and operational emissions—promoting higher efficiency standards, circular construction, and low-carbon materials—through commitments by developers, businesses, and residents. Over time, these practices should be codified into urban-planning legislation to mainstream sustainable development. The work is already underway (Action 19), with the first draft of the Voluntary Decarbonised Development Standard expected in 2026.

v. Deeper cooperation with the national government to unlock enabling regulation and targeted finance through existing or new subsidy schemes or through reform of municipal financing; and

For prudence, we do not quantify any uplift from these factors in the current pathways. However, all these avenues will be revisited and, where justified by evidence and policy decisions, reflected in future CCC iterations.

A-2.1a: Emissions Gap (kt CO2e) based on the SECAP methodology NOT considering BAU Scenario and residual emissions offsetting
This approach shows projected emission reductions through the CCC Action Plan alone, without considering business-as-usual developments or offsetting mechanisms.

	(1) Baseline Emissions		(2) Emissions Reduction Target 2030			(3) Emission Reduction Through the CCC Action Plan			(4) Emissions Gap (amount necessary to achieve net-zero)		
	Baseline emissions for 2022		The emissions reduction target for 2030			These are the emissions reductions that would be achieved through the CCC Action Plan.			(4) = (1) – (2)		
	tCO2e	tCO2e / per capita	tCO2e	% from baseline	tCO2e / per capita	tCO2e	% from baseline	tCO2e / per capita	tCO2e	% from baseline	tCO2e / per capita
Buildings	1 163 514	2,44	563 607	48%	1,16	563 607	48%	1,16	599 907	52%	1,23
Transport	437 051	0,92	-2 163	0%	0,00	-2 163	0%	0,00	439 214	100%	0,90
Waste	73 330	0,15	69 842	95%	0,14	69 842	95%	0,14	3 488	5%	0,01
Industrial Process and Product Use (IPPU)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Agricultural, Forestry and Land Use (AFOLU)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**1 673 895**	**3,51**	**631 287**	**38%**	**1,29**	**631 287**	**38%**	**1,29**	**1 042 608**	**62%**	**2,14**

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

A-3.1: Systems & stakeholder mapping

System
Built Environment – Municipal Assets
Stakeholders
City: Department of Construction, Department of City Property Management, Department of Buildings Renovation, Bratislava Climate Office, Technical Networks Bratislava (TSB), City owned organisations (sports facilities, art schools, museums and galleries, theatres, social housing facilities, etc.), Metropolitan Institute of Bratislava (MIB), city owned companies (OLO – waste management, BVS – water management, DPB – public transport), city districts. **Private sector:** Energy providers and contractors (ESCOs, energy auditors and consultants, construction firms, renewable energy companies, etc.) **Regulatory and legislative stakeholders:** Government of the Slovak Republic, specifically Ministry of Economy, Ministry of Environment, Ministry of Regional Development and Informatisation, Slovak Energy and Innovation Agency (SIEA), Union of Cities of Slovakia, Bratislava Self-Governing Region, EU institutions.
System Description
Influence on the city's climate neutrality ambition: Compared to the residential or tertiary sector, municipal assets contribute to only 2.98% and public lighting 0.44% of Bratislava's total CO2e emissions. However, we see this system as key, as the city needs to lead by example to be able to influence other stakeholders. Comprehensive building reconstructions to the highest standards will require significant investments from the city. Therefore it will be important to secure funding and financing through national, European, or international instruments to the maximum extent possible, while also making use of financial tools, such as guaranteed energy services (ESCO companies, energy auditors, energy providers). Bratislava has recently established a new Energy Management Team under the Climate Office. This Team will be responsible for coordinating all stakeholders across the municipality, city companies and the private sector to deliver short-term and long-term energy savings in municipal assets. NGOs and civic associations do not have direct influence on the city emissions but play a key role in communication and advocating for change.

System
Built Environment – Private Buildings
Stakeholders
City: Bratislava Chief Architect, Metropolitan Institute of Bratislava (MIB) – Department of Urban Planning, Bratislava Climate Office. **Residential and Tertiary Sector:** companies (services and industries), asset managers, energy providers, residents of Bratislava, flat owners' associations, NGOs and civic organisations. **Regulatory and legislative stakeholders:** Government of the Slovak Republic, specifically Ministry of Economy, Ministry of Environment, Ministry of Regional Development and Informatisation, Government Office for Urban Planning, Slovak Energy and Innovation Agency (SIEA), Union of Cities of Slovakia, Bratislava Self-Governing Region, EU institutions.
System Description
Influence on the city's climate neutrality ambition: Existing private buildings Energy consumption in the residential and tertiary sector amounts to two thirds of overall city GHG emissions. There has been a significant increase in energy efficiency from the year 2005, however there are still measures that could bring about important changes (installing renewable energy sources, buildings renovations, switch to energy efficient appliances, etc.). Most importantly, both district and local heating sources must shift away from natural gas to ensure full decarbonisation. New developments Building new neighbourhoods is a long-term project that spans decades and has enormous influence on the city's climate neutrality pathway. The city has limited direct influence on how new developments will perform in terms of sustainability and climate, since building performance requirements are set at the national level. However, the city can intervene through spatial planning and voluntary cooperation with developers. In cooperation with developers, Bratislava will propose pilot measures/standards for new neighbourhoods in areas such as thermal management, energy efficiency of buildings, transportation, parking, and building materials. **Interest in the city's climate neutrality ambition:** Existing private buildings Residents are willing to improve energy efficiency in their homes to decrease energy expenses. However, processes to obtain permits or funding can be difficult and long. The city plans to provide support in this area by simplifying permitting processes and communicating about the benefits to increase energy efficiency. Based on preliminary conversations, companies are already taking steps or planning to reduce their carbon footprint. There is increased pressure (from EU regulation or business policy) to implement ESG commitments, deploy energy management, install renewables and other sustainable practices. The city will motivate them further through its Bratislava Mayor Climate Challenge (see detail in Module C.1). New developments While developers must ensure their new projects are financially feasible, there are also important incentives for them to increasingly prioritise climate neutrality. First, they need to consider not only current legislative conditions but also future EU requirements for new buildings and neighbourhoods, as new developments take a long time to plan and construct. The best way to prepare for the future is by building to the highest net-zero standards. Second, there is a growing market demand for

sustainable housing, offices, and other buildings. The city can also play an important role through urban planning, regulation, and cooperation with developers interested in creating demonstration projects. This cooperation has already been started for several large-scale developments in the city, which are being prepared for construction, including Mlynske Nivy (around 8,000 new flats expected until 2040), New Lido (5,000 new flats) and Zimny Pristav (number of flats TBD).

System
Energy Supply
Stakeholders
Energy providers: heat (MHTH, Veolia, Engie, others), electricity producers and distributors (ZSE, ZSD, SSD), gas (SPP, heating companies), renewable energy companies (solar, heat pumps). **City of Bratislava:** Bratislava Climate Office, Energy Management Team, Department of City Companies' Management, Technical Networks Bratislava (TSB), waste-to-energy plant (operated by OLO - municipal waste company), BVS (municipal water company). **Regulatory and legislative stakeholders:** Government of the Slovak Republic, Ministry of the Environment, Ministry of Economy, Slovak Energy and Innovation Agency (SIEA), Regulatory Office for Network Industries (URSO), EU institutions. **Research and Innovation:** Slovak Academy of Sciences, Slovak Technical University.
System Description
Influence on the city's climate neutrality ambition: Energy suppliers have a very important impact on the city's climate neutrality ambition. For electricity providers, the main challenge is to facilitate the readiness of the grid for massive renewables deployment. For heat production, which is the overall largest contributor to the city's emissions, decarbonising both local and district heating are crucial for Bratislava's climate neutrality ambition. In this area, the city plans to explore its own maximum potential for producing clean energy through waste incineration (electricity and heat), use of residual heat from wastewater treatment and other sources. In this area, the city is planning to play a more active role in regulation through its local heating plan and new concession agreements. Relevant ministries and the Slovak Energy and Innovation Agency can have significant influence in terms of funding allocation and overall technical and regulatory support. **Interest in the city's climate neutrality ambition:** Energy providers in Bratislava are private companies, so their main interests are profits and economic viability of investments. These companies are willing to cooperate with the city on climate neutrality, but their goals do not necessarily align with Bratislava's climate ambitions. For some of them, like the natural gas distributors, decarbonisation means end of business. Intense negotiations will be needed in this area, and alignment with national and regional authorities and agencies, particularly regarding financial, technical and regulatory support is a crucial precondition for success.

System
Sustainable Transport
Stakeholders
City: DPB (city transport company), Department of Transportation, Department of Construction. **Residential and Tertiary Sector:** Bratislava residents, NGOs and civic organisations, private companies, shared mobility providers. **Regulatory and legislative stakeholders:** Bratislava Self-Governing Region (BSK), Slovak Railways (ZSSK), Ministry of Transportation, EU institutions.
System Description
Influence on the city's climate neutrality ambition: Currently, transport's share of total emissions is increasing as other sectors achieve significant savings. Private and corporate transport comprises 22.95% of Bratislava's emissions, public transport accounts for 3.00%, and the city fleet accounts for 0.16% of the total emissions. Reducing emissions in the transport sector depends both on the availability of clean transport options and on their social acceptance as the preferred alternatives. Since they are not economically viable, sustainable transport measures depend on public funding. These projects are often investment-intensive and, particularly in the Slovak context, extremely complex from both technical and managerial perspectives. Therefore, transport measures require comprehensive cooperation with the Slovak Government, the Slovak Railways, and the Bratislava Self-Governing Region (BSK), as much of the individual car traffic flows into the city from nearby municipalities. This traffic needs to be influenced before it reaches the city limits by providing commuters with adequate sustainable transport alternatives. The new Sustainable Urban Mobility Plan, required by the TEN-T regulation, can be a powerful tool to provide the necessary coordination framework. **Interest in the city's climate neutrality ambition:** Bratislava takes a proactive approach to mobility, aiming to expand sustainable transport options for residents rather than relying on restrictive measures. The city's mobility ecosystem includes a diverse range of stakeholders, and Bratislava is committed to improving conditions for all users. While public transport users and NGOs advocate for cleaner air and reduced emissions, car owners tend to prioritize traffic reduction, convenience, and parking availability. At the national level, urban transportation in Bratislava has become a politically charged issue, with recent proposals from the national government seeking to limit municipal authority over transport systems through legislative changes. In this context, aligning policy and communication across stakeholders emerges as a key challenge—and a critical success factor—for achieving transformative change in urban mobility.
System
Waste and Wastewater
Stakeholders
City: Department of City Companies' Management, Department of Environment, OLO (Waste management company of Bratislava) including their 2 reuse centres KOLO, BVS (Wastewater management company of Bratislava). **Private sector:** Waste management companies (other than OLO), Energy providers (electricity and heat from incineration, potential residual heat from wastewater), Companies (as waste producers). **Regulatory and legislative stakeholders:** Government of the Slovak Republic, Ministry of the Environment, Ministry of Economy, Slovak Energy and Innovation Agency (SIEA), EU institutions

Civil society: Residents of nearby areas (incinerator, composting plant, biogas plant), Citizens (as waste producers), NGOs and civic associations.

System Description

Influence on the city's climate neutrality ambition:

Emissions from waste: From municipal waste originating in Bratislava, despite measures in place and the utilisation of landfill methane for energy purposes, approximately 2,794 tons of CH4 escape into the atmosphere annually. While Bratislava has a strong waste strategy in place and succeeds at educating both residents and the private sector in recycling, waste management (landfilling) still amounts to a little over 4% of the city's overall GHG emissions, so the influence on climate neutrality is non-negligeable.

Reduced emissions from waste-to-energy: The incineration of non-recyclable communal waste can significantly contribute to the decrease of fossil gas usage in district heating and electricity production. The waste-to-energy plant, which is already connected to the DH system and electricity network, will have its capacity augmented in the coming years, which means it could cover an important proportion of the electricity and heat needs of the city. Additionally, Bratislava collects bio-degradable kitchen waste and plans to build a compost and/or biogas plant to process it, which will again support the decarbonisation of the energy system and further reduce methane emissions from organic materials sent to landfill. Lastly, the Climate Office together with its water management company (BVS) are exploring options for using residual heat from wastewater treatment as another way to decrease emissions in the heating sector.

Interest in the city's climate neutrality ambition:

City: In 2021, Bratislava adopted the "Strategy for Municipal Waste Management in Bratislava 2021 - 2026: Transitioning to a Circular Economy". The strategy sets out three strategic goals for Bratislava to achieve by 2035: 1. Achieve a minimum of 65% rate of waste sorting and recycling/material recovery, 2. Reduce landfilling to less than 5% (by 2035), 3. Process the remaining waste through energy recovery and utilise waste as a source of heat.

Private sector: Companies are working to improve their waste management usually as part of their ESG strategies. Energy providers are interested in the city's waste-to-energy projects, as these could help them increase their own standards. Especially the main heat distributor MHTH has a strong interest to connect the waste-to-energy facilities to its network, because it makes the whole district heating system more efficient in EU and national regulation terms, hence more difficult for customers to disconnect.

Civil society: Bratislava residents are learning fast to sort waste, as attested by the great success of the new organics collection system and of the new municipal re-use centres (KOLO). However, for waste-to-energy facilities or the planned compost plant, the city is facing negative reactions from residents living nearby (NIMBY).

System
Green-Blue Infrastructure
Stakeholders
City: Department of Environment – Department of Greenery, Metropolitan Institute of Bratislava (MIB), Bratislava Water Management Company (BVS), Department of Construction, Department of Transportation, Bratislava City Districts, City Forests. **Private sector:** Companies (CSR cooperation on tree planting initiatives), Developers. **Civil society:** Residents, NGOs and civic associations. **Regulatory and legislative stakeholders:** Ministry of Environment, Forests of the Slovak Republic (state forests), EU institutions. **Research and Innovation:** Comenius University Bratislava (Faculty of Environment).
System Description
Blue-green infrastructure is predominantly important for the resilience of the city and adaptation to climate change. However, its increased quality and quantity can also contribute to emissions reduction (i.e. through sequestration). The city is mostly responsible for this area, but other stakeholders also play an important role: Private sector Since blue-green infrastructure is not a profitable business, it requires investments which cannot come from the city alone. Bratislava cooperates with companies to finance greening projects in Bratislava as part of their CSR strategies. The Metropolitan Institute of Bratislava (MIB) has also developed a new urban planning tool (ecoindex) to ensure that developers build new neighbourhoods with blue-green infrastructure of sufficient quantity and quality. Residents, Volunteers and NGOs Residents also have significant influence on the blue-green infrastructure, e.g., through activities supported by Bratislava, such as greening front yards, starting up community gardens, or volunteering for tree-planting activities across the city. NGOs play an important role in communication and advocating for nature protection. National government A very influential stakeholder is also the state-owned company Forests of the Slovak Republic, which manages a significant portion of forests within the city's territory. While the city considers forests to be important from a recreational and environmental perspective (besides being important carbon sinks), the state sees them as economic potential for logging. Recently the city reached an agreement with state forests to reduce logging on Bratislava's territory, marking an important milestone in the preservation of this key piece of blue-green infrastructure. However, the agreement with the state is contingent upon regular payments from the city budget and ongoing political support from the national government.

In addition to the systems described above, key public stakeholders in Bratislava include the **17 city districts**, each with distinct but complementary powers to the City of Bratislava. In this regard, Bratislava and Košice are unique in Slovakia, having a two-level municipal government structure. Additionally, the **Bratislava Self-Governing Region (Bratislavský samosprávny kraj)** holds specific responsibilities within the territory and will be a key partner, specifically in transport planning and specific property portfolios (mainly secondary schools). In the next interaction of the CCC, the city will seek to engage the region with defined roles in the implementation of the CCC. Bratislava also supports active

cooperation among the city districts in the implementation of their local climate plans. So far, three city districts have either joined or are preparing to join Bratislava's climate plan.

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

Municipal Governance	
Type of barrier	**Description of the barrier and opportunity**
Financial/Institutional	**Funding of municipalities** Slovakia is one of the most centralised countries in Central and Eastern Europe (IMF Country Report No 19/330), which affects regional and local government powers and funding. Slovak regions and municipalities, while largely independent in fiscal planning, receive government funding solely through personal income taxes. These tax receipts are redistributed among all municipal/regional governments based on population, without considering the level of economic activity. Local taxes have a minimal impact on total revenues, while regions and municipalities have limited revenue-raising authority and must maintain balanced budgets. CAPEX budgets are low, and all major investments, such as in energy, sustainable transport, or adaptation, are mostly made through grants or loans. These constraints have been exacerbated as the Slovak government has repeatedly reduced cities' revenues in 2022 and 2023 to fund financial assistance through tax cuts on personal income to help address increased energy and living costs. In 2025 onwards, Bratislava will have to contend with the government's fiscal consolidation packages— in 2025 particularly the rise in VAT and the introduction of a financial transaction tax, both of which directly affect the cost of goods and services procured by the city. Additionally, there has been a change in the system of redistributing shared taxes in Slovakia, resulting in municipalities receiving a smaller share of collected taxes than in the past. "The financial outlook for Bratislava is bleak," acknowledged Mayor Matúš Vallo in a Startitup.sk interview in 2025. "Alongside Sofia, the capital of Bulgaria, Bratislava ranks as the poorest capital in the European Union," he noted. His words underline a stark reality: despite its status as Slovakia's capital, Bratislava continues to grapple with deep-rooted structural underfunding, making its ambitions all the more challenging in an increasingly strained economic climate in the world and Slovakia specifically. *Opportunity:* Administrative reform of municipalities incl. reform of funding is crucial prerequisite for successful and systematic investment into climate action by the City of Bratislava.
Organisational	**Siloed organisational structures** Traditional municipal governance structures promote silos, hindering effective cross-cutting cooperation necessary for transformative climate action. Hierarchical departmental organisation leads to insufficient communication between the different levels of the administration, city departments, and city organisations and a lack of ownership for delivering the overall result among civil servants. *Opportunity:* • New governance structures created for the CCC processes. • Embedding climate targets into all policies and projects (climate mainstreaming).
Organisational	**Fragmentation of city governance**

	The city of Bratislava and the city of Košice are the only two cities in Slovakia with two-level local administrations: city and city districts. The competences of the capital city and the individual city districts are governed by a specific law, Act No. 377/1990 Coll. on the Capital City of the Slovak Republic Bratislava. Each city district has its own mayor and local parliament. A third level of administration is constituted by the regional authority, Bratislava Self-Governing Region that has specific competences over the whole NUTS 3 region and also has its own regional president and its own regional parliament. Fragmentation and overlapping of competences/governance decrease the overall effectiveness of local administration in Bratislava and prevent formation of functional links within the larger metropolitan area, which covers certain districts of the Bratislava region (NUTS 3), especially the towns of Pezinok, Senec and Malacky. In addition, this fragmentation complicates the economic governance of the city, since more human resources are needed across the 3 levels of government, and since it limits the possible benefits of economies of scale.
Institutional	**Lack of technical staff** Slovak cities' ability to drive transformation and innovation is also limited by lacking human capacities due to 'brain drain'. More than 300 000 people have left Slovakia in the past 15 years. Those departing are more likely to be highly qualified, and only one third of leavers express a desire to return (SLSP, 2022). This brain drain contributes to a lack of capacities across all sectors but is especially pronounced in the public domain, where salaries and career options cannot compete with private companies or higher offers abroad.
Political	**Lack of support from the national government** On the national level, there has not been sufficient commitment (see part on NECP) or legislation (e.g., climate law) that would enable stakeholders, including cities, to create, implement and finance tools to influence various climate-related processes. Moreover, approaches, methods and strategies to tackle climate change often vary from one ministry to another and there is no overarching guidance. Ministries and government offices have been repeatedly approached for CCC participation but have so far not been interested to join or support the process in terms of their capacities or additional funding.
Social and Behavioural	**Lack of awareness of climate change among city staff and the public and resistance to lifestyle changes** *Opportunity:* - 64% of Slovaks consider climate change a "very serious problem" and 27% more think it is a "fairly serious problem" (Eurobarometer, 2023). Most citizens expect action from national government, EU and business/industries as well as municipalities. - Use co-benefits to communicate climate action to them, use well-established city communication channels (internal or external).

Municipal Assets	
Type of barrier	**Description of the barrier and opportunity**
Financial	**Infrastructure modernisation debt/high upfront costs** The city's building stock has significant deferred maintenance and modernisation needs. This is particularly acute for energy-intensive buildings

	including heritage protected buildings or sports facilities. High upfront costs to retrofit such buildings discourages the city from undertaking deep retrofit projects. Instead, partial solutions are repeatedly chosen to address immediate problems through repairs. This approach perpetuates a vicious cycle where short-term, affordable solutions fail to address the underlying inefficiencies. As a result, buildings and facilities continue to consume excessive energy, while they function sub optimally for users and deteriorate at a pace that necessitates further maintenance and repairs.
Financial	**Barriers to use subsidies and financial tools** Bratislava is operating just under the debt ceiling, while also having limited access to ESI funds as it is classified as a developed region. Consequently, innovative approaches to climate action, including to energy efficiency, are avoided as they involve higher rates of financial and capacity risks. This is coupled with negative previous experience with innovative funding models, such as energy performance contracting or guaranteed energy services. The renovation rate of public buildings has also been low because of the significant fragmentation of national/EU funding sources and responsibilities across multiple governmental and administrative bodies. According to the Supreme Audit Office of the Slovak Republic, over fifteen institutions are involved in the financial mechanisms for building renovations, leading to complex and inefficient coordination.
Organisational	**Lack of capacity** Public bodies may lack the necessary technical expertise to plan, manage, and execute complex renovation projects, especially with regards to new technologies and building practices. *Opportunity:* Focus on training and expertise exchange with peer cities

Waste and Wastewater	
Type of barrier	**Description of the barrier and opportunity**
Financial/technical	**Infrastructure modernisation debt** The existing waste management infrastructure in Bratislava (particularly its waste-to-energy plant, which ensures the city's landfilling rate remains low, as well as the wastewater treatment plants, which could potentially be supplemented with the heat recovery technology) requires significant investment for modernisation. The high costs associated with upgrading facilities and implementing new technologies pose a financial challenge for the city. *Opportunity:* Seek funding and investment through national and EU programs, as well as sustainable sources of financing that are supported by reliable profitability projections. However, requirement for a balanced budget remains an obstacle for the city or its companies to take on more loans.
Financial	**Insufficient financial sustainability for circular initiatives** Circular economy initiatives require substantial investment and ongoing operational costs. Ensuring the financial viability of these initiatives can be challenging, particularly in securing consistent funding streams. Opportunity:

	Develop sustainable financing models, including pay-as-you-throw systems, and collaborate with private sector partners to share costs and resources.
Organisational	**Lack of capacity and expertise** Sustainable practices for waste management require specialised knowledge and skills, as well as a paradigm shift, which may be lacking in the current workforce of the city's waste management agency, OLO. Ensuring that staff have the necessary expertise to advance the decarbonisation and circularity of the waste management system and implement new technologies is essential. *Opportunity:* Provide training and capacity-building programs for OLO staff and engage external experts and consultants to support complex projects.

Sustainable Transport	
Type of barrier	**Description of the barrier and opportunity**
Organisational	**Fragmentation of planning** Transport in Bratislava is significantly influenced by the broader metropolitan region. However, urban and transport planning in this area is fragmented among various municipalities, the region, and the state, resulting in conflicting goals, changing priorities, and continued urban sprawl. The City of Bratislava has been advocating for administrative reform to strengthen planning at the metropolitan level. Despite these calls for reform, no concrete plans currently exist to implement such changes. This lack of coordination and unified planning continues to challenge the development of a cohesive and efficient transport system in the wider Bratislava metropolitan region.
Funding	**High investment needs into network expansion (public transport, cycling routes)** 20% of Bratislava's total city budget is allocated to public transport as a transfer to the Municipal Transport Company for its OPEX and CAPEX expenditures. Consequently, both the city and the Transport Company are left with insufficient funds to undertake significant investments in expanding the network. This financial constraint limits them to basic maintenance of existing infrastructure, hindering potential improvements and expansion necessary for enhancing the public transport system's capacity and efficiency. Over the past two decades, all major public transport projects have been funded by the EU, and this source of funding will continue to be crucial for Bratislava in the future.
Structural	**Low population density in Bratislava** Low residential density in Bratislava has significant impacts on urban services leading to higher per capita costs for infrastructure and public services, as utilities and services must cover larger areas with fewer users. Specifically, public transportation becomes less cost-effective and harder to sustain with fewer passengers spread over a larger area, leading to longer routes and less frequent services, while the system is reliant on tramline infrastructure as its backbone, which remains underdeveloped compared to similar cities in the region.
Organisational	**Lack of quality data for planning** The ability to evaluate proposed changes to the city transport system is currently hampered by the lack of a good-quality transport model allowing the selection of appropriate measures that will yield optimal results in terms of

	traffic flow and calming, as well as in terms of reducing emissions of greenhouse gases and other pollutants. *Opportunity:* Bratislava is currently preparing a project to systematise the collection and analysis of data, including completing the sensor network. This data will be used to calibrate and create a multimodal transport model that includes emissions and noise models.
Social and Behavioural	**Growing reliance on private cars** The transport sector has not seen a significant reduction in greenhouse gas emissions since 2005. Measures implemented, such as improving the public transport and tightening emission limits, have mainly mitigated additional emissions from increased car traffic. In Bratislava, the number of registered personal vehicles grew from 181,500 in 2005 to 328,600 in 2021, an 80% increase (Statistical Office of the Slovak Republic, 2023) and reaching 500 cars per 1 000 residents. Efforts to promote modal shift and reduce the number of cars, such as city-wide parking regulations, public transport preference or expanding cycling routes at the expense of roads, have faced resistance and come at a high political cost to recent municipal administrations. Additionally, adoption of electric vehicles (EVs) in Slovakia continues to lag behind other countries. In 2023, only 5.3% of new car registrations in Slovakia were electric—well below the EU average of 22.7%, placing Slovakia among the three slowest adopters of EVs in the European Union. *Opportunity:* Slovakia's strong automotive industry presents a strategic advantage for accelerating the transition to electromobility. As a key economic sector, it holds significant potential to drive innovation, attract investment, and enhance national competitiveness in the global shift toward low-emission transport.

Private Buildings/Built Environment	
Type of barrier	**Description of the barrier and opportunity**
Institutional/Regulatory	**Limited municipal powers** Bratislava and other Slovak municipalities have limited ability to drive non-municipal decarbonisation action because of lacking regulatory power to mandate energy efficiency and/or emissions reduction action by the private sector and citizens, limited authority over energy regulations and building codes and lacking financial capacity to directly support decarbonisation action, *Opportunities:* - Engagement with the private sector that can be leveraged to build cooperation on emissions reduction. - Engage national government for enhanced support and regulation, introduce local energy efficiency regulations.
Financial	**Limited support for residents in the Bratislava region** through EU or national subsidy schemes, as support is oriented towards all other regions, with the Bratislava region qualified as the only more developed region in Slovakia. However, income inequalities in the region are among the highest in the country, creating barriers for many households for undertaking renovations.

Political	**Low support for Renewable Energy Sources (RES)** According to the EC assessment report of the draft NECP revision Slovakia's submitted contribution to the EU RES target is significantly below the one resulting from EU legislation. This low support translates to various practical steps that hinder a transition to a more sustainable energy system, such as complicated permitting procedures or a recent increase of grid connection charges. Discussions with Západoslovenská distribučná a.s., the distribution grid opera for western Slovakia, reveal current grid capacity constraints. At present, operator can theoretically accommodate approximately 250 MW of n connections. This capacity is sufficient to meet the current 145 MW by 20 renewable energy target (combined city-owned buildings with residential a tertiary sector) required under our current commitment. However, further renewa energy connections may not be possible until 2030, particularly as demand fr new developments increases.
Social and behavioural	**Low public acceptance** Slow uptake of RES among the public results from continuing misconceptions and a lack of understanding about the benefits of renewable energy, Moreover, a significant price cap on electricity to households that has been in place since 2022 potentially discourages energy-saving measures and investments into RES.

Blue-Green infrastructure	
Type of barrier	**Description of the barrier and opportunity**
Structural	**Lack of public land** The municipality can only invest on its own land, which may not be available in areas with highest vulnerabilities to the effects of climate change, notably heat islands and local flooding. Tree-planting in the built environment has become increasingly difficult due to underground utilities and poor quality of soil. *Opportunity:* Use new tools in urban planning or voluntary cooperation with developers
Financial	**Lack of financing tools for capital expenditures** Nature-based solutions entail important upfront costs with little ability to recover them through revenue-raising. In this context, it is difficult for the city to find financing for these projects, as there is no expected revenue stream.
Financial	**Ongoing maintenance requirements** Green infrastructure projects often require ongoing maintenance to remain effective and aesthetically pleasing. The costs and logistics of maintaining these projects can be a barrier. *Opportunity:* Develop long-term maintenance plans and secure funding for ongoing upkeep. Involve community groups and volunteers in maintenance activities to foster a sense of ownership and reduce costs.
Social and behavioural	**Public resistance and lack of awareness**: Residents and businesses may resist green infrastructure projects due to perceived disruptions, lack of understanding of benefits, or concerns about maintenance. *Opportunity:*

	Conduct public awareness campaigns to educate citizens on the benefits of green infrastructure. Engage the community through participatory planning processes and provide incentives for local businesses and residents to support green initiatives.

2 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.

2.1 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.

- List of impact pathways, selected from or inspired by the NetZeroCities Theory of Change, including early and late outcomes (strategic objectives) and levers of change structured along the fields of action.
- Descriptions of the impact pathways, summarising their relationship with key priorities and strategic interventions and with the analysis developed in Part A

B-1.1: Impact Pathways					
Fields of action	**Systemic levers**	**Early changes (1-2 years)**	**Late outcomes (3-4 years)**	**Direct impacts (potential emission reductions in tCO2eq/year)**	**Indirect impacts (co-benefits)**
MUNICIPAL ASSETS	**Governance & policy** **Technology**	**Comprehensive energy savings** The city develops and approves a building renovation standard and a clear prioritisation plan for city buildings. The city introduces yearly KPIs for energy efficiency for its municipal companies	**Comprehensive energy savings** As a result of the procedural and governance changes, more renovation projects are initiated yearly with higher performance in terms of energy savings CO2 reduction.	11,060	Improved comfort and functionality of retrofitted municipal buildings, such as schools, kindergartens, retirement homes, cultural venues, etc.

			Comprehensive energy savings in municipal companies Companies achieve a 20% reduction in yearly energy consumption compared to 2022.		Financial savings Development of the market for building retrofits (including local green jobs), enabling private building owners to deploy retrofits for their building stock.
	Governance & policy **Data and digitisation** **Learning & capabilities** **Social innovation**	**Energy management** The city will enhance data management through a building inventory. This will be combined with improved governance via a newly established energy management team and an intersectoral community of practice of energy/facility managers, facilitating both short-term and long-term systematic energy and emission savings. Energy savings will be introduced as key KPIs for city departments, organisations, and companies.	**Energy management** Most of the city buildings' portfolio is included in the building inventory and the energy management system, allowing for centralised buildings management as systemic governance change. Clear reporting is in place on energy savings.	620	Improved city governance and overall asset management Enhanced sense of ownership over energy efficiency measures

	Governance & policy **Technology/infrastructure**	**Public Lighting Renovation** The city continues to carry out a comprehensive upgrade of city-wide lighting infrastructure, showcasing a transformational project that successfully ended a long-term vendor lock-in and is resulting in up to 60% energy savings.	**Public Lighting Renovation** Public lighting network continues to be upgraded to provide other smart services to the city to allow for better planning based on robust data and integrating the city's e-charger network	1,800	Reliable and efficient operation Increased safety in neighbourhoods
	Governance & policy **Technology/infrastructure** **Procurement**	**Renewable Energy Deployment** The annual electricity consumption of the city's properties and municipal organisations is approximately 86,000 MWh. Currently, the city does not generate electricity from renewable sources on; all electricity is purchased from external suppliers. Therefore, we will develop a long-term strategy, focused predominantly on solar energy, as a crucial step for achieving the city's climate goals and as one of the breakthrough projects that can also influence other sectors.	**Renewable Energy Deployment** A clear investment plan and model (such as energy communities or guaranteed energy services) is in place, gradually increasing yearly output, enhancing price stability, and securing a reliable energy supply for the city.	6,000	Potentially additional sources of revenue from energy generation Energy security increased

MUNICIPAL WASTE & WASTEWATER	**Technology/infrastructure**	**Waste-to-Energy** The municipal waste management company, OLO, replaces fossil fuel consumption and associated CO_2 emissions by recovering waste heat generated during the incineration of waste at the waste-to-energy facility (WTE) in Vlčie hrdlo. The current technology dating back to 1970s is, however, obsolete and inefficient, and is being prepared for replacement.	**Waste-to-Energy** The K3 combustion line modernisation project will increase the volume of waste used for electricity and heat production. After the completion of the K3, OLO will produce 96,106 MWh/year of electricity and supply 53,000 MWh/year of heat to the district heating system, providing a key contribution to the decarbonisation of the district heating system and allowing the city to largely eliminate landfilling. Overall efficiency of the technology will be increased from 25% to 85%.	Impact included under DHS decarbonisation.	Elimination of landfilling Potentially new business opportunities in circular economy
	Technology/infrastructure	**Composting and Biogas plant** The waste management company OLO is designing a new composting and biogas plant. The plant will be capable of using biogas for electricity and heat production or potentially	**Composting and Biogas plant** The project will contribute to maximising the material recovery of waste, as it will improve the infrastructure for processing organic waste, which accounts	17,000	

		producing BioCNG fuel for transportation.	for up to 45% of total municipal waste. Public awareness campaigns on separation and recycling will remain an integral part of the city policy. Both investments contribute to the overall waste management goal of 65% recycling and sorting.		
	Technology/infrastructure	**Utilisation of residual wastewater heat** The first step towards unlocking the energy recovery potential of residual wastewater heat is a feasibility study, which will determine the optimal use, location of the technology, possible decentralisation at neighbourhood level, or estimated investment costs.	**Utilisation of residual wastewater heat** If the economic feasibility of the project is demonstrated, the project can be implemented either directly by the private sector or through a public-private partnership.	Not possible to calculate, as project scope not defined yet. In pre-feasibility stage.	
SUSTAINABLE TRANSPORT* *** It was not possible to calculate the impact of individual measures due to the outdated transport model. The city is working to rectify this until the next iteration.**	**Governance & policy** **Data and digitisation** **Learning & capabilities**	**Development and integration of a multimodal transport model with GHG and noise modelling** A new multimodal transport model is currently being procured by Bratislava	**Development and integration of a multimodal transport model with GHG and noise modelling** The integrated model will support strategic transport planning and	The creation of the model will allow for better establishment of the baseline as well as impact for individual measure.	

		including collection of the latest transport data and update of the software (Visum). The model will be expanded with integrated GHG emissions and noise modules.	feed directly into the preparation of Bratislava's Sustainable Urban Mobility Plan (SUMP). It will also provide a baseline for future quantification of GHG reduction measures		
	Governance & policy	**Sustainable Urban Mobility Plan (SUMP) – update & alignment with TEN-T Regulation - development** City of Bratislava coordinates stakeholder and citizen participation and drafts the plan for approval.	**Sustainable Urban Mobility Plan (SUMP) – update & alignment with TEN-T Regulation - development** Improved policy and projections based on validated data and increased capability by the city.	Impact of individual measures will be evaluated as part of planning.	Improved air quality and reduced noise More quality public space Increased public health Increased quality of life Increased comfort of public transport A more accessible city for all residents
	Technology/infrastructure	**Tram infrastructure** Bratislava is currently preparing or already building four new tram lines: line extension to Petržalka, line extension to Bory, new line on Pribinova - Košická streets, and line extension to multimodal hub in Ružinov. In addition to preparing new lines, the city is also preparing or has already implemented the	**Tram infrastructure** By 2030, 10 km of the tram system, which is the city's public transit backbone, will either be modernised and/or built to increase efficiency and connect densely populated areas or new developments. This is of key importance to increase the number of passengers and to support modal shift		

		modernisation of three key tram lines: 1. Vajnorská, 2. Ružinovská and 3. SNP/Kamenné Square	towards sustainable modes.		
	Technology/infrastructure	**Zero-Emission Vehicles** This includes primarily investing into new trolleybus lines replacing buses on concrete routes as well as purchases of new public transport vehicles, specifically trams and trolleybuses,	**Zero-Emission Vehicles** Investments, especially in the field of public transport, are continued as part of increasing the overall quality, efficiency and attractiveness of public transport.		
	Technology/infrastructure	**Cycling infrastructure** Bratislava continues investing to achieve 42 km of new or modernised cycling infrastructure.	**Cycling infrastructure** Public acceptance of cycling is growing, including as a means of daily commute or for travelling shorter distances.		
PRIVATE (RESIDENTIAL AND TERTIARY) BUILDINGS EFFICIENCY/BUILT ENVIRONMENT	**Technology/infrastructure**	**Private residents invest in refurbishment, technology replacement, and renewable energy sources.** The city and state support this through communication campaigns and by reformulating energy subsidies to better motivate change.	**Reduction of energy consumption in the residential sector by 23%, Increase of renewable energy production by 226,000 MWh**	127,000	
	Technology/infrastructure	**Businesses invest in refurbishment, technology replacement,**	**Reduction of energy consumption in the tertiary sector by 38%, Increase of**	317,750	

		and renewable energy sources. The city and state support this through communication campaigns and by reformulating energy subsidies to better motivate change.	**renewable energy production by 380,000 MWh**		
	Governance & policy	**District heating decarbonisation** The Bratislava Climate Office, with wide stakeholder participation, develops a new heating strategy outlining decarbonisation pathways and investments by heating companies to achieve them.	**District heating decarbonisation** Heating companies start preparing investments according to the decarbonisation pathways laid out in the heating plan.	150,000	Improved air quality Enhanced cooperation with the private sector
	Governance & policy	**Spatial Planning and Regulation** The city aims to pilot decarbonisation measures in new developments in collaboration with major developers, and focusing on local energy production, decarbonised heating and local adaptation measures through piloting a new urban planning tool (ecoindex).	**Spatial Planning and Regulation** New regulatory tools are developed and integrated into the new city master plan.	Contributes to the overall reduction in the sector.	Enhanced cooperation with the private sector Improved quality of public space Improved quality of living/housing
	Social innovation	**Bratislava Mayor's Climate Challenge** In 2025, The city is implementing a pilot	**Bratislava Mayor Climate Challenge** In the following years, the BMCC is expanded	Contributes to the overall reduction in the sector.	Enhanced cooperation with the private sector

		Bratislava Mayor Climate Challenge partnering with 10 retailer and asset managers with one or more sites in Bratislava to accelerate decarbonisation of existing assets. This focus reflects these sectors' impact on Bratislava's current emissions footprint, and their ability to drive emissions reduction both on their own premises and among suppliers, contractors, customers, and other stakeholders through their actions, requirements, and engagement.	to further companies and sectors, delivering measurable energy savings and RES output targets.		Better preparedness of local companies for future challenges Potentially improved air quality Potentially improved quality of public space
BLUE-GREEN INFRASTRUCTURE	**Technology/infrastructure**	**Park Redevelopment** Bratislava continues to systematic investment into park redevelopment according to standards developed by the Metropolitan Institute of Bratislava. Overall, 15 parks will be redeveloped by 2030.	**Park Redevelopment** Renewed parks form a connected network across the city; quality green and blue infrastructure is available to residents of every neighbourhood.	Most of the direct impact of this action relates to helping the city adapt to extreme heat and flash flooding. This action has a limited carbon sequestration effect.	Increased public health Improved quality of life Enhanced biodiversity Improved quality of public space
	Social innovation	**Urban Tree Planting Initiative**	**Urban Tree Planting Initiative**	Most of the direct impact of this action relates to	Improved public health

		Since 2019, the city has been organising the initiative to plant 10,000 trees with various partners from companies, institutions, organisations and communities. By 2030, the city is extending the programme to planting 25,000 new trees and shrubs. As part of this initiative, the city will also provide post-planting care until the trees are well-rooted and can survive without further assistance.	The city can continue the programme in all city districts, working on the technical barriers to tree planting.	helping the city adapt to extreme heat. This action has a limited carbon sequestration effect.	Improved quality of life Enhanced biodiversity Improved quality of public space
	Technology/infrastructure **Social innovation**	**Sustainable Forest Management and Protection** In 2021, the city of Bratislava concluded an agreement with the Slovak State Forests (Lesy Slovenskej republiky) to limit logging in state forests within the city. As a result, state forests reduced logging in Bratislava forests by more than half (from 17,319 m^3 to below 8,000 m^3), saving approximately 4,000 trees from being felled annually.	**Sustainable Forest Management and Protection** Both of the programmes are upheld to ensure continued sequestration of carbon and quality recreational opportunities for Bratislava residents.	Most of the direct impact of this action relates to helping the city adapt to extreme heat and flash flooding. This action has a limited carbon sequestration effect.	Improved public health Improved quality of life Enhanced biodiversity Improved air quality

		At the same time, the Bratislava City Forests expanded the quiet zone from the original 4% to 51%, a higher proportion than in the Slovak national parks. The aim is to maintain this management regime on 1,500 hectares in the long term, with logging on a further 1,500 hectares kept to a minimum.			
	Technology/infrastructure Social innovation	**Comprehensive Water Retention Measures** A yearly target will be established for both the city operation as well as for the Bratislava water management company, BVS.	**Comprehensive Water Retention Measures** Water retention measures are integrated into every newbuild and gradually also integrated to existing buildings. Ideally, the city and other stakeholders are able to implement larger-scale measures to limit surface flows of rainwater in the city.	Most of the direct impact of this action relates to helping the city adapt to flash flooding.	Improved quality of life Increased comfort of public transport (usually disturbed by floods) Increased safety of residents and city users

Important on co-benefits monitoring: While co-benefits such as improved public health, or increased biodiversity are important motivators for local climate action, monitoring them comprehensively presents significant challenges for Bratislava. Data collection often requires long-term, sector-specific studies or proxy indicators that are not readily available at the local level. Additionally, quantifying these effects can be costly, involve multiple institutions, and rely on methodologies that are still evolving. As a result, many of these co-benefits remain qualitatively described but not systematically measured. However, until the next iteration Bratislava will provide a list of co-benefits to be measured through our evolved reporting mechanisms of its strategic framework, especially the city development plan **Bratislava 2030**. Bratislava will consider reporting such co-benefits, which it can collect independently or through co-operation with academic

partners, including for example energy and financial savings, air quality (upon completion of the sensor network), biodiversity indicators for new parks, public satisfaction survey, for examples. We will also be engaging with partners from the NetZeroCities Consortium.

B-1.2: Description of impact pathways

The city has the ability to directly impact emissions from public transport, waste management (including wastewater treatment), municipal buildings, public lighting, and the city's vehicle fleet (including its organisations and municipal enterprises). In 2022, these emissions totalled 183,000 tCO2eq, which is just under 11% of Bratislava's total emissions.

To achieve the overall goals, Bratislava commits to actively influence decarbonisation in the city, as the actions taken by other sectors are crucial for the success of the overall City's climate agenda. Bratislava wants to lead by example in the measures implemented on its property, create an environment to facilitate decarbonisation for residents and companies, and implement pilot decarbonisation projects in key areas, such as district heating and spatial planning. Using the CCC methodology and approach, the city will also foster active engagement and participation of all relevant partners – residents, the non-profit sector, the private sector, city districts, regional, national, and European authorities, as outlined below in Section 3.

Below is an explanation on why we chose to focus on specific areas, also highlighting the key measures in each:

- **Municipal Assets:** Although measures in the "Municipal Assets" sector may not significantly reduce the city's overall emissions, they are crucial for fostering relationships with stakeholders and residents. To ensure buy-in from other non-City stakeholders, which represent the majority of GHG emissions that take place within City limits, the city needs to demonstrate its commitment to its climate goals. Through cooperation with companies, measures related to municipal assets can be scaled up to the private sector. One example of this approach is the partnership with companies on energy efficiency that is planned under the Bratislava Mayor Climate Challenge as part of the "Building Power" Pilot City project. Solutions will also be communicated to residents, including joint action to address systemic barriers (i.e. permitting processes for refurbishments or renewable energy deployment). Other public buildings managed by city districts, regional and national authorities, or even other Slovak cities, will also be able to benefit from the experience of Bratislava (the "Building Power" Pilot City Project also includes knowledge exchange and capacity building with other Slovak cities). Lastly, by working on energy efficiency measures for municipal assets, the city will be sending a strong signal and showing direction to players on the market, increasing demand for retrofits and renewable energy deployment.
- **Waste Management and Wastewater:** This area is crucial for achieving elimination of landfilling, while also contributing to sustainable heat production in the city's large district heating system, which is currently running almost solely on gas. As heating amounts to 40% of total GHG emissions in Bratislava, two important measures include the modernisation of the waste-to-energy facility to replace part of the natural gas as a heat source and exploration of the wastewater residual heat potential.
- **Transport:** The strategic priority is to increase the share of public, pedestrian, and bicycle transport to 70% of mode share through various measures, as defined by the **Bratislava 2030** document The key measure in this area is modernisation and expansion of the 10 km of tram tracks, which are central to Bratislava's transport system, for which funding is already secured from the Cohesion Fund. With the expansion of the city's public transport system, transit will become more accessible to Bratislava residents in several key city districts, especially Petržalka (more than 100,000 residents), further increasing ridership and supporting mode shift. Additionally, Bratislava is offering free or cheaper public transport to vulnerable categories such as the elderly, children, and people with disabilities. In line with the new 2024 TEN-T regulation, a new Sustainable Urban Mobility Plan (SUMP) for the Bratislava urban node must be completed by 2027. This updated SUMP will enhance coordination among stakeholders, support a continued shift toward sustainable mobility, and serve as a key monitoring tool for tracking changes in modal split,
- **Climate Change Adaptation:** It is essential that the city continues to invest both CAPEX and OPEX resources into green and blue infrastructure, water retention and sustainable forest

management. However, these can mostly be funded through the city's own budget, as there is a lack of funding tools on the market. Bratislava recently updated its **Vulnerability and Risk Assessment to the Adverse Impacts of Climate Change**, which will enable the city to more effectively target its adaptation measures to focus on vulnerable residents and areas. The vulnerability assessment analyses the impact of heat and torrential rainfall on vulnerable urban populations (based on socio-economic factors, education, and age), transport infrastructure, and buildings. The results, in the form of interactive maps, will be used by the city when planning adaptation measures, designing infrastructure, and implementing social policies, hence contributing to climate justice.

The residential and tertiary (services) sectors, which together account for two-thirds of total emissions, is not under direct control of the municipality. Similarly, the private and corporate transport sector, producing nearly a quarter of emissions, is primarily regulated by the state. To achieve the overall reduction target, household energy consumption should decrease by 23%, while the production of energy from renewable sources should increase to 226,000 MW. Companies and other stakeholders in the tertiary sector should reduce energy consumption should by 38%, while their production of energy from renewable sources should increase to 380,000 MW. Since the city can only influence these sectors indirectly, we are committed to supporting these major undertakings through a combination of regulations, incentives, communication, and social innovation measures. Continued advocacy measures towards the national government also remains crucial, despite the national government not officially supporting the Mission. A key measure implemented by the city in both sectors will be the update of the local heating plan, which will outline clear targets and pathways towards decarbonisation of the system, translating the EU-level commitments and regulation into a Bratislava-specific context. Complementary initiatives include the **Bratislava Mayor's Climate Challenge** and **voluntary partnerships with developers** to promote higher sustainability standards and certification.

These efforts take place within a broader institutional framework in which key emission sectors—such as energy, buildings, and transport—are primarily regulated at the national level.

While Bratislava has begun to effectively deploy soft policy tools, such as voluntary agreements and stakeholder engagement, these cannot replace the need for robust national legislation. Coordinated action across all levels of government is therefore essential to unlock the full potential of local climate leadership.

We welcome the European Commission's outreach in support of the Mission and encourage stronger emphasis on effective national-local coordination—and, where necessary, public-sector reform—across all relevant EU strategies, laws or funding instruments.

2.2 Module B-2 Climate Neutrality Portfolio Design

B-2.1: Description of action portfolios	
Fields of action	Portfolio description
Municipal Assets	• **Comprehensive Energy Savings**: Implementing renovations and energy-saving measures in municipal buildings to achieve a 35% reduction in energy consumption by 2030. • **Energy Management**: Introducing comprehensive energy management systems to reduce energy consumption by 20% across all city companies. Partially funded through the Pilot City Project. • **Public Lighting**: Ensuring 100% coverage with LED fixtures with the possibility of intensity control to improve energy efficiency and reduce CO2 emissions. • **Renewable Energy**: Installing renewable energy sources to cover at least 20% of the annual electricity consumption of municipal assets.
Municipal Waste & Wastewater	• **Waste-to-Energy**: Upgrading the Waste to Energy (WTE) facility to increase the volume of waste used for electricity and heat production, contributing to the greening of local heat production. • **Composting and Biogas Plants**: Building a new composting plant and a biogas plant to treat biodegradable waste, reducing landfill rates and producing renewable energy. • **Reducing Landfilling**: Achieving a minimum of 65% sorting and recycling rate, less than 5% landfilling, and treating the rest of the waste through energy recovery by 2035. • **Wastewater Heat Recovery**: Conducting feasibility studies for the potential for residual wastewater heat from buildings.
Sustainable Transport	• **Increase of modal share of sustainable transport modes**: Raising the combined share of public transport, walking, and cycling to 70% by 2030—directly contributing to emission reductions. This target originates from the Bratislava 2030 strategy and will need to be validated through updated mobility surveys and enhancements to the city's transport modelling tools. • **Tram Infrastructure**: Building and modernising 10 km of tram lines, as the key city transit infrastructure, to enhance public transport efficiency and reduce reliance on private vehicles. Support already ensured or envisioned through ESI Funds 2021 – 2027. • **Zero-Emission Vehicles**: Increasing the share of zero-emission vehicles in the municipal fleet to 50% and building 400 new charging stations for electric vehicles. • **Cycling Infrastructure**: Constructing at least 42 km of new cycling infrastructure, including the installation of new bike racks and support for shared bike infrastructure. The city has been successful in applying for grants from the national Recovery and Resilience Plan. It is crucial that the national government continues the support for cycling infrastructure.

Private Buildings Efficiency/Built Environment	• **Residential Sector:**
	  ○ **Energy Consumption Reduction:** Encourage residents to reduce household energy consumption by 23% through energy-saving measures and increased efficiency.
	  ○ **Renewable Energy Production:** Significantly increase the production of energy from renewable sources, targeting a

	production volume of 226,000 MW to enhance energy self-sufficiency. The city commits to support co-operation among distribution companies, permitting offices (incl. for heritage buildings) and providers to facilitate installation of photovoltaics.
	• **Tertiary Sector:**
	  ○ **Energy Consumption Reduction:** Recommend a 38% reduction in energy consumption for companies in the services, trade, retail, educational institutions, hospitals, and public administration sectors. Launch a Bratislava Mayor Climate Challenge to engage local businesses in achieving this goal.
	  ○ **Renewable Energy Production:** Increase energy production from renewable sources to 380,000 MW in the tertiary sector.
	  ○ **Spatial Planning and Regulation:** Promote spatial planning and regulatory measures focused on decarbonisation, specifically for development of new neighbourhoods and focusing on local energy production and enhancing local adaptation measures through the new urban planning tool.
	• **District Heating Decarbonisation:**
	  ○ Bratislava will work with private heating companies using the tool of the **local heating plan** to ensure that the industry, which is almost fully reliant on natural gas, commits to clear decarbonisation targets and pathways.

Blue-Green Infrastructure	• **Park Redevelopment:** Bratislava will transform at least 15 existing public spaces such as parks, pocket parks, plazas, and courtyards into higher quality spaces that reduce temperatures in summer, improve air quality, promote local biodiversity, and enhance rainwater retention. In addition to this, the city is committed to creating more linear parks and greenery, to counter the urban heat island effect and reduce flooding risk. • **Urban Tree Planting Initiative:** Planting 25,000 trees and shrubs by 2030, expanding the existing commitment from the 10,000 trees planting initiative started in 2019. This initiative includes providing post-planting care for trees and prioritising species that are resistant to extreme urban conditions. Trees in the city help reduce the heat island effect, filter pollutants, retain water, support biodiversity, and improve overall quality of life. • **Sustainable Forest Management and Protection:** In cooperation with the State Enterprise Forests of the Slovak Republic, reducing logging in Bratislava forests by more than half and expanding 'rest zones' where economic logging is excluded to promote recreational use and preserve biodiversity. The city aims to maintain a management regime that excludes commercial logging from more than half of Urban Forests and will seek ways to link corporate volunteering and regular cooperation with the private sector for forest maintenance. • **Comprehensive Water Retention Measures:** Implementing systemic water retention measures such as the construction of retention ponds, rain gardens, green roofs, and vegetation islands around roads at risk of flooding. The initiative aims to increase the retention capacity of urban areas, reduce drainage load on the sewer system, and prevent local flooding. Specific projects include reviewing 50,000 stormwater connections to sewers and, in the city forests, restoring two large and four small ponds, and creating 30 amphibian hatcheries.

Municipal Assets

B-2.2: Individual action outlines		
Action outline	**Action name**	**1 Comprehensive Energy Savings at the City and City Companies**
	Action type	Renovation and energy-saving measures
	Action description	Implement renovations and energy-saving measures in municipal buildings to achieve a 35% reduction in energy consumption by 2030, and implement actions to achieve overall reductions of 20% by the municipal companies
Reference to impact pathway	Field of action	Energy systems
	Systemic lever	Technological, financial, organisational
	Outcome (according to module B-1.1)	Reduced energy consumption, increased energy efficiency
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava and municipal organisations
	Action scale & addressed entities	Municipal buildings
	Involved stakeholders	Municipal staff, energy consultants, contractors
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for renovations, energy-saving technologies Key milestones 2-3 years: 1. Prepare a building renovation standard 2. Introduce yearly KPIs for city companies 3. Prepare an investment plan incl. prioritisation criteria 4. Complete energy audits and prepare an investment package 5. Initiate renovation projects
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced electricity and heating fuel consumption
	GHG emissions reduction estimate (total) per emission source sector (tCO2e/year)	3,060, city and 8,000 city companies
	GHG emissions compensated (natural or technological sinks)	Not applicable

	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**2 Energy Management**
	Action type	Energy management system implementation
	Action description	Introduce comprehensive energy management systems to reduce energy consumption by 20% across all city companies.
Reference to impact pathway	Field of action	Energy systems
	Systemic lever	Technological, organisational
	Outcome (according to module B-1.1)	Improved energy efficiency, reduced operational costs
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, city companies
	Action scale & addressed entities	All city companies
	Involved stakeholders	City companies, City energy managers
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: energy management platform, expert consultation, energy management team and staff training Key milestones 2-3 years: 1. Create an energy management team 2. Build a community of practice of city facility and energy managers 3. Develop and scale a building inventory 4. Procure an energy management platform
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced electricity and heating fuel consumption
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	620
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**3 Public Lighting**
	Action type	Lighting system upgrade
	Action description	Ensure 100% coverage with LED fixtures with the possibility of intensity control to improve energy efficiency and reduce GHG emissions.
Reference to impact pathway	Field of action	Energy systems
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Reduced energy consumption, improved public lighting efficiency
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Public lighting systems throughout the city
	Involved stakeholders	Municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for LED installations, smart lighting systems Milestones: Project implementation is ongoing; funding through a bank loan is secured – completion expected in 2030.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced electricity consumption
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	1,800
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**4 Renewable Energy**
	Action type	Renewable energy installations
	Action description	Deploy renewable energy to cover at least 20% of the annual electricity consumption of municipal assets.
Reference to impact pathway	Field of action	Energy systems
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased use of renewable energy, reduced reliance on fossil fuels
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Municipal buildings and facilities
	Involved stakeholders	Renewable energy providers, municipal staff, contractors
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for renewable installations Milestones for 2-3 years: 1. Selection of an implementation model (energy community, GES or PPP) 2. Development of a pilot project scope and design At the same time, individual installations on refurbished buildings should be ongoing.
Impact & cost	Generated renewable energy (MWh/year)	15,500
	Removed/substituted energy, volume, or fuel type	Reduced reliance on grid electricity and fossil fuels
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	6,000
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

Municipal Waste & Wastewater

B-2.2: Individual action outlines		
Action outline	**Action name**	**5 Waste-to-Energy Plant**
	Action type	Facility upgrade
	Action description	Upgrade the Waste to Energy (WTE) facility to increase the volume of waste used for electricity and heat production.
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased renewable energy production, reduced landfill waste
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, Municipal waste management company (OLO)
	Action scale & addressed entities	OLO facilities
	Involved stakeholders	OLO, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for facility upgrades Milestones for 2-3 years: 1. Environmental impact assessment process completed 2. Project design under development 3. Procurement to start in 2025
Impact & cost	Generated renewable energy (MWh/year)	96,000 MWh of electricity and 53,000 MWh of heat produced yearly
	Removed/substituted energy, volume, or fuel type	Reduced landfill and fossil fuel usage
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	Impact included under DHS decarbonisation
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**6 Composting and Biogas Plants**
	Action type	Facility construction
	Action description	Build a new composting plant and a biogas plant to treat biodegradable waste, reducing landfill rates and producing renewable energy.
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased renewable energy production, reduced landfill waste
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, OLO
	Action scale & addressed entities	OLO facilities
	Involved stakeholders	OLO, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for new facilities Timelines: 2024-2026 Milestones: 1. Project design ongoing, implementation expected by 2029
Impact & cost	Generated renewable energy (MWh/year)	7,920 MWh of electricity
	Removed/substituted energy, volume, or fuel type	Reduced landfill and fossil fuel usage
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	17,000
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**7 Reducing Landfilling**
	Action type	Waste management policy
	Action description	Achieve a minimum of 65% sorting and recycling rate, less than 5% landfilling, and treat the rest of the waste through energy recovery by 2035.
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Regulatory, organisational, financial
	Outcome (according to module B-1.1)	Increased recycling rates, reduced landfill waste
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, OLO
	Action scale & addressed entities	Municipal waste management system
	Involved stakeholders	OLO, municipal staff, recyclers, residents
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for recycling programs and facilities Milestones for 2-3 years: 1. Continue improving collection of waste for residents 2. Introduce a pay-as-you-throw system 3. Expand programmes for the collection of construction waste
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced landfill usage
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	Impact included under composting and biogas and DHS decarbonisation through waste-to-energy plant, see above.
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**8 Wastewater Heat Recovery**
	Action type	Feasibility studies
	Action description	Conduct feasibility studies for the potential recovery of residual wastewater heat from buildings.
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Identification of potential heat recovery opportunities
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava and Bratislava Water Management Company (BVS)
	Action scale & addressed entities	Municipal buildings and facilities
	Involved stakeholders	Energy consultants, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for feasibility studies Milestones for 2-3 years: 1. Completion of a feasibility study and identification of viable projects
Impact & cost	Generated renewable energy (if applicable)	Potential renewable energy from heat recovery
	Removed/substituted energy, volume, or fuel type	Potential reduction in heating energy usage
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	Dependent on feasibility study outcomes and all impacts to be reflected in the decarbonisation of the district heating action.
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

Sustainable Transport

B-2.2: Individual action outlines		
Action outline	**Action name**	**9 Increase of Modal Share of Sustainable Transport Modes**
	Action type	Transportation infrastructure and policy
	Action description	Raising the combined share of public transport, walking, and cycling to 70% by 2030—directly contributing to emission reductions. This target originates from the Bratislava 2030 strategy and will need to be validated through updated mobility surveys and enhancements to the city's transport modelling tools.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Technological, regulatory, financial
	Outcome (according to module B-1.1)	Increased use of sustainable transport modes, reduced vehicle emissions
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, City Transport Company (DPB)
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal transportation department, City Transportation Company (DPB)
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for infrastructure improvements and policy changes, update of the city transport modelling tool. Milestones: Action includes various policy-related as well as infrastructural measures to be implemented on an ongoing basis.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced fossil fuel usage in transportation
	GHG emissions reduction estimate (total) per emission source sector	Significant reductions in transport-related emissions
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**10 Increase of Modal Share of Sustainable Transport Modes**
	Action type	Transportation infrastructure and policy
	Action description	Deliver a city- and region-wide programme of traffic surveys (household travel survey, automatic counts, cordon/origin-destination, junction counts), process the data, and update/calibrate the existing PTV Visum multimodal model (latest version). Build an integrated emissions model (HBEFA-based; CO_2, CH_4, $N_2O \rightarrow CO_2e$ and air pollutants) and a noise model linked to the road network. Outputs will underpin strategic transport planning, environmental analyses, and serve as core inputs to the SUMP and CCC impact quantification.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Technological, data/analytical
	Outcome (according to module B-1.1)	Validated baseline and forecasting tools for mobility; quantified transport activity, emissions and noise; improved planning & prioritisation; enables robust GHG reduction estimates for transport measure
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava (Transport/ Mobility dept., Climate Office); City Transport Company (DPB)
	Action scale & addressed entities	City and hinterland
	Involved stakeholders	DPB, NDS, ZSSK, IDS BK, Ministry of Transport (MD SR), private/regional operators, telco operators (mobility data), city districts, SUMP team.
	Comments on implementation – consider mentioning resources, timelines, milestones	Milestones: under procurement in 2025,
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not direct; action **enables** fuel use reduction via better policy, modal shift, and network efficiency measures.
	GHG emissions reduction estimate (total) per emission source sector	**Enabling action.** No direct tCO_2e claimed to avoid double counting. Provides transport

		GHG baseline and measure-level estimates for subsequent actions (from next inventory cycle).
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	TBD

B-2.2: Individual action outlines		
Action outline	**Action name**	**11 Sustainable Urban Mobility Plan (SUMP) – update & alignment with TEN-T Regulation**
	Action type	Strategic planning & governance
	Action description	Preparation of a new Sustainable Urban Mobility Plan (SUMP) for Bratislava, aligned with TEN-T Regulation (EU 2021/1153, as revised) and EU Mission neutrality goals. The SUMP will integrate passenger and freight, cross-border commuting, active mobility, public transport, and decarbonisation pathways into one metropolitan framework.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Regulatory, governance, data/analytical, financial
	Outcome (according to module B-1.1)	Legally compliant SUMP providing investment roadmap to 2030; integrated scenarios for sustainable modes (70% modal split target); prioritised TEN-T node interventions; quantified contribution to GHG reduction and air quality.
Implementation	Responsible bodies/person for implementation	City of Bratislava, Ministry of Transport
	Action scale & addressed entities	City and metropolitan area
	Involved stakeholders	DPB, NDS, ZSSK, IDS BK, Ministry of Transport (MD SR), private/regional operators, telco operators (mobility data), city districts, SUMP team.
	Comments on implementation – consider mentioning resources, timelines, milestones	**Resources:** procurement of expert consortium; EU/TEN-T technical assistance; staff coordination. **Process:** participatory design; compliance with EU SUMP guidelines

		& TEN-T Regulation. **Milestones:** (1) Scoping & governance setup; (2) Baseline data consolidation (surveys, model inputs); (3) Stakeholder forums & citizen engagement; (4) Draft scenarios (BAU, green, TEN-T priority); (5) Cost-benefit & climate impact analysis; (6) Draft plan; (7) Political adoption; (8) Integration into investment planning (ESIF, CEF, RRP). First milestone: training by Ministry of Transport, engage external advisor.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not direct; action **enables** fuel use reduction via better policy, modal shift, and network efficiency measures.
	GHG emissions reduction estimate (total) per emission source sector	**Enabling action.** No direct tCO_2e claimed to avoid double counting. Provides transport GHG baseline and measure-level estimates for subsequent actions (from next inventory cycle).
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	TBD

B-2.2: Individual action outlines		
Action outline	**Action name**	**12 Tram Infrastructure**
	Action type	Infrastructure development
	Action description	Building and modernising 10 km of tram lines to enhance public transport efficiency and reduce reliance on private vehicles.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Improved public transport infrastructure, reduced vehicle emissions
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, City Transport Company (DPB)
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal transportation department, City Transport Company (DPB)
	Comments on implementation – consider mentioning resources, timelines, milestones	A total of nearly 6 km will be finished by the end of 2025, including the new Petrzalka tramline connecting a neighbourhood of 100,000 residents to the city's crucial transport system. Funding for the remaining projects is secured through the European Structural and Investment Funds/Cohesion Fund.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced fossil fuel usage in transportation
	GHG emissions reduction estimate (total) per emission source sector	Significant reductions in transport-related emissions
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**13 Zero-Emission Vehicles**
	Action type	Fleet upgrade
	Action description	Increasing the share of zero-emission vehicles in the municipal fleet to 50% incl. development of trolleybus lines. Building 400 new charging stations for electric vehicles.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased use of zero-emission vehicles, reduced vehicle emissions
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, City Transportation Company, Technical Networks of Bratislava (city company)
	Action scale & addressed entities	Municipal fleet
	Involved stakeholders	Municipal transportation department, electric vehicle providers, charging station contractors
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: Funding for charging infrastructure expected from the national RRF funding for vehicle procurement is dependent upon ESI funds becoming available. Timelines: 2024-2029 Milestones: Individual projects will be implemented as their maturity progresses and funding from RRF/ESI funds becomes available.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced fossil fuel usage in transportation
	GHG emissions reduction estimate (total) per emission source sector	Significant reductions in transport-related emissions
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**14 Cycling Infrastructure**
	Action type	Infrastructure development
	Action description	Construct 42 km of new cycling infrastructure to promote sustainable transport and reduce vehicle emissions.
Reference to impact pathway	Field of action	Mobility & transport
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased use of cycling as a mode of transport, reduced vehicle emissions
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal transportation department, urban planners, cycling advocacy groups
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for cycling infrastructure, construction equipment Timelines: 2024-2030 Milestones: Ongoing preparation and completion of individual cycling infrastructure projects.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced fossil fuel usage in transportation
	GHG emissions reduction estimate (total) per emission source sector	Moderate reductions in transport-related emissions
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

Private Buildings Efficiency

B-2.2: Individual action outlines		
Action outline	**Action name**	**15 Residential Sector: Energy Consumption Reduction**
	Action type	Energy-saving measures
	Action description	Encourage residents to reduce household energy consumption by 23% through energy-saving measures and increased efficiency.
Reference to impact pathway	Field of action	Residential sector
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Reduced energy consumption
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava (in a supporting role)
	Action scale & addressed entities	Residential buildings
	Involved stakeholders	Residents, energy consultants, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for energy-saving measures, incentives for efficiency improvements Timelines: 2024-2030 Milestones: Implementation of energy-saving measures
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced electricity and heating fuel consumption
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	77,000
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**16 Residential Sector: Renewable Energy Production**
	Action type	Renewable energy installations
	Action description	Significantly increase the production of energy from renewable sources, targeting a production volume of 226,000 MW to enhance energy self-sufficiency. The city commits to support co-operation among distribution companies, permitting offices (incl. for heritage buildings) and providers to facilitate installation of solar panels.
Reference to impact pathway	Field of action	Residential sector
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased renewable energy production
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava (in a supporting role)
	Action scale & addressed entities	Residential buildings
	Involved stakeholders	Distribution companies, permitting offices, providers, residents
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for renewable installations Timelines: 2024-2030
Impact & cost	Generated renewable energy (MWh/year)	226,000
	Removed/substituted energy, volume, or fuel type	Reduced reliance on grid electricity and fossil fuels
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	50,000
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**17 Tertiary Sector: Energy Consumption Reduction**
	Action type	Energy-saving measures
	Action description	Recommend a 38% reduction in energy consumption for companies in the services, trade, retail, educational institutions, hospitals, and public administration sectors. Launch a Bratislava Mayor Climate Challenge to engage local businesses in achieving this goal.
Reference to impact pathway	Field of action	Tertiary sector
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Reduced energy consumption
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava (in a supporting role)
	Action scale & addressed entities	Tertiary sector buildings
	Involved stakeholders	Businesses, educational institutions, hospitals, public administration
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for energy-saving measures, incentives for efficiency improvements Timelines: 2024-2030 Milestones: 1. City support through the Bratislava Mayor Climate Challenge to start in 2025. The design is being prepared.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced electricity and heating fuel consumption
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	124,100
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**18 Tertiary Sector: Renewable Energy Production**
	Action type	Renewable energy installations
	Action description	Increase energy production from renewable sources to 380,000 MW in the tertiary sector.
Reference to impact pathway	Field of action	Tertiary sector
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Increased renewable energy production
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava (in a supporting role)
	Action scale & addressed entities	Tertiary sector buildings
	Involved stakeholders	Businesses, educational institutions, hospitals, public administration
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for renewable installations Timelines: 2024-2030 Milestones for the city support TBD.
Impact & cost	Generated renewable energy (MWh/year)	380,000
	Removed/substituted energy, volume, or fuel type	Reduced reliance on grid electricity and fossil fuels
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	193,650
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**19 Tertiary Sector: Spatial Planning and Regulation**
	Action type	Policy and regulatory measures
	Action description	Promote spatial planning and regulatory measures focused on decarbonisation, specifically for development of new neighbourhoods and focusing on local energy production and enhancing local adaptation measures through the new urban planning tool.
Reference to impact pathway	Field of action	Tertiary sector
	Systemic lever	Regulatory, organisational
	Outcome (according to module B-1.1)	Improved urban planning, increased focus on decarbonisation
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, Metropolitan Institute of Bratislava
	Action scale & addressed entities	Citywide
	Involved stakeholders	Metropolitan Institute of Bratislava, developers, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	The city is co-creating Bratislava's **Voluntary Decarbonised Development Standard (DDS)** that translates EPBD/EED into locally usable performance thresholds, criteria, and processes. Milestones: Develop DDS v0, **pilot** it in private and municipal projects, then publish **DDS v1** with a Technical Implementation Manual. Build internal capacity, onboard developers, produce an explainer kit, and drive **national policy** alignment. Timeline: until mid-2027..
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not applicable
	GHG emissions reduction estimate (total) per emission source sector	Moderate reductions in urban emissions
	GHG emissions compensated (natural or technological sinks)	Contributes to the overall reduction envisaged for the sector.
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**20 District Heating Decarbonisation**
	Action type	Energy infrastructure upgrade
	Action description	Bratislava will work with private heating companies using the tool of the local heating strategy to ensure that the industry, which is almost fully reliant on natural gas, commits to clear decarbonisation targets and pathways.
Reference to impact pathway	Field of action	District heating
	Systemic lever	Technological, financial
	Outcome (according to module B-1.1)	Decarbonisation of district heating systems, reduced reliance on fossil fuels
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	District heating systems
	Involved stakeholders	Private heating companies, energy consultants, municipal staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for heating infrastructure upgrades, incentives for decarbonisation Timelines: 2024-2030 Milestones: Development of a new local heating plan in 2024 and 2025.
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Reduced reliance on fossil fuels for heating
	GHG emissions reduction estimate (total) per emission source sector (tCO2eq/year)	150,000
	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

Blue-Green Infrastructure

B-2.2: Individual action outlines		
Action outline	**Action name**	**21 Park Redevelopment**
	Action type	Public space transformation
	Action description	Bratislava will transform at least 15 existing public spaces such as parks, pocket parks, plazas, and courtyards into higher quality spaces that reduce temperatures in summer, improve air quality, promote local biodiversity, and enhance rainwater retention. In addition to this, the city is committed to creating more linear parks and greenery, to counter the urban heat island effect and reduce flooding risk.
Reference to impact pathway	Field of action	Green infrastructure
	Systemic lever	Technological, financial, organisational
	Outcome (according to module B-1.1)	Improved urban climate resilience and biodiversity
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal staff, urban planners, local communities
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for park redevelopment, public engagement programs Timelines: 2024-2030 Milestones: Completion of park redevelopment projects
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not applicable
	GHG emissions reduction estimate (total) per emission source sector	Not applicable
	GHG emissions compensated (natural or technological sinks)	Moderate carbon sink through increased trees and greenery
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**22 Urban Tree Planting Initiative**
	Action type	Tree and shrub planting
	Action description	Planting 25,000 trees and shrubs by 2030, expanding the existing commitment from the 10,000 trees planting initiative started in 2019. This initiative includes providing post-planting care for trees and prioritising species that are resistant to extreme urban conditions. Trees in the city help reduce the heat island effect, filter pollutants, retain water, support biodiversity, and improve the overall quality of life.
Reference to impact pathway	Field of action	Green infrastructure
	Systemic lever	Technological, financial, organisational
	Outcome (according to module B-1.1)	Enhanced urban greenery and improved air quality
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal staff, local communities, environmental NGOs
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for tree planting, post-planting care programs Timelines: 2024-2030 Milestones: Achievement of tree planting targets
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not applicable
	GHG emissions reduction estimate (total) per emission source sector	Not applicable
	GHG emissions compensated (natural or technological sinks)	Significant carbon sink through tree planting
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**23 Sustainable Forest Management and Protection**
	Action type	Forest management
	Action description	In cooperation with the State Enterprise Forests of the Slovak Republic, reducing logging in Bratislava forests by more than half and expanding 'rest zones' where economic logging is excluded to promote recreational use and preserve biodiversity. The city aims to maintain a management regime that excludes commercial logging from more than half of Urban Forests and will seek ways to link corporate volunteering and regular cooperation with the private sector for forest maintenance.
Reference to impact pathway	Field of action	Forest management
	Systemic lever	Regulatory, organisational, financial
	Outcome (according to module B-1.1)	Preserved biodiversity and enhanced recreational spaces
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava
	Action scale & addressed entities	Urban forests
	Involved stakeholders	State Enterprise Forests, municipal staff, private sector volunteers
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for forest management, volunteer coordination Timelines: 2024-2030 Milestones: Establishment and maintenance of 'rest zones'
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not applicable
	GHG emissions reduction estimate (total) per emission source sector	Not applicable
	GHG emissions compensated (natural or technological sinks)	Carbon sink preserved through trees not logged

	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.2: Individual action outlines		
Action outline	**Action name**	**24 Comprehensive Water Retention Measures**
	Action type	Blue infrastructure
	Action description	Implementing systemic water retention measures such as the construction of retention ponds, rain gardens, green roofs, and vegetation islands around roads at risk of flooding. The initiative aims to increase the retention capacity of urban areas, reduce drainage load on the sewer system, and prevent local flooding. Specific projects include reviewing 50,000 stormwater connections to sewers and, in the city forests, restoring two large and four small ponds, and creating 30 amphibian hatcheries.
Reference to impact pathway	Field of action	Water management
	Systemic lever	Technological, financial, organisational
	Outcome (according to module B-1.1)	Improved water retention and reduced flood risk
Implementation	Responsible bodies/person for implementation	Municipality of Bratislava, Water Management Agency of the city (BVS)
	Action scale & addressed entities	Citywide
	Involved stakeholders	Municipal staff, water management authorities, local communities
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources needed: funding for water retention projects, public engagement Timelines: 2024-2030 Milestones: Completion of water retention projects
Impact & cost	Generated renewable energy (if applicable)	Not applicable
	Removed/substituted energy, volume, or fuel type	Not applicable
	GHG emissions reduction estimate (total) per emission source sector	Moderate reductions through enhanced water management

	GHG emissions compensated (natural or technological sinks)	Not applicable
	Total costs and costs by CO2e unit	Estimated project cost and cost-effectiveness analysis needed

B-2.3: Strategy for residual emissions

Bratislava commits to prepare a residual-emissions strategy as part of the 2027 CCC update. The strategy will quantify residual 2030 emissions and set out a compensation approach that prioritises locally proven nature-based solutions (NbS), building on the city's internal experience with NbS pilots and landscape stewardship implemented in recent years.

This includes peri-urban rewilding pilots such as the LIFE SteppeLife project at Sysľovské polia (https://steppelife.eu/en/), which reconnects fragmented urban land and shifts from intensive use to nature-friendly management with the twin goals of protecting rare bird species and enhancing carbon sequestration. Bratislava is also scaling NbS through sustainable urban-forest stewardship. Since 2019, the municipal enterprise Mestské lesy v Bratislave has expanded non-extractive zones from 4% to 51% of its territory (≈1,500 ha), a share exceeding that in Slovak national parks. In 2021, the city concluded an agreement with the state forestry company (Lesy SR) to restrict logging within Bratislava's boundaries, cutting annual volumes by more than half—from 17,319 m³ to under 8,000 m³—saving ~4,000 trees each year and establishing "quiet zones" on 44% of 4,000 ha of state forests. To sustain this model—which prioritises ecosystem services, biodiversity and public access over commercial extraction—the city will develop innovative private-sector partnerships and a robust MRV framework to track carbon sequestration, biodiversity and social co-benefits.

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

Module B-3 “Indicators for Monitoring, Evaluation and Learning” contains a selection of indicators to monitor and evaluate progress along the selected impacts pathways and fields of action described in Module B-1. as well as a monitoring and evaluation plan, i.e., metadata on each indicator selected, in addition to milestones and timeline. More specifically:

- An overview table listing the indicators selected per outcome and impact including targets and evaluation points (B-3.1);
- A metadata table for each indicator selected (B-3.2).

Fields of Action	Indicator	KPI	Indicator Unit	Indicator Baseline*	Indicator Target 2030	Corresponding Action	Note
Buildings & Heating	Energy consumption from municipal buildings	KPI.1	MWh/year	Electricity: 35,530 Heat/Cold: 10,271 Natural Gas: 5,667	Electricity: 23,313 Heat/Cold: 3,511 Natural Gas: 4,979	1,2	
	Shared of modernised public lighting	KPI.2	%	-	100%	3	Baseline 2021
	Share of own production of electricity and heat from renewable sources in the total consumption of buildings	KPI.3	%	0%	20.0%	4	Baseline 2022
	Overall building renovation (envelope)	KPI.4	% annual renovation rate	1%	2.5%	15,16,18	
	Decarbonizing district heating	KPI.5	% share of district heating produced using renewables vs. fossil fuels	TBD	TBD	17	
	Emission factor of heat supplied by the district heating system	KPI.6	tCO2e/MWh	TBD	0.122	17	
	Companies participating in the Bratislava Mayor Climate Challenge	KPI.7	number of companies	0	30	19	
	Energy savings participating companies in the Bratislava Mayor Climate Challenge	KPI.8	MWh/year	0	2	19	
Electricity	Renewable electricity production in Bratislava	KPI.9	MWh/year		606,000.00	4,15,16,18	
Transport	Modal split	KPI.10	share of sustainable travel modes	60%	70%	10,11,12, 14	in 2014
	Cycling infrastructure	KPI.11	km per year of new infrastructure		5	14	

	Modernised or new line infrastructure (tram)	KPI.12	km	0	10	12	
	% of zero-emission vehicles in public transport	KPI.13	km	0	1	13	
Waste	Municipal waste landfilling rate	KPI.14	%	8.9%	under 5%	5,6	Baseline 2022, target by 2035
	Volume of municipal waste generated	KPI.15	kg/year/per capita				Actions covered by a separate strategy.
	Waste sorting rate	KPI.16	%	39%	45%		Actions covered by a separate strategy.
	Volume of heat supplied to the central heat supply system	KPI.17	MWh/year	0	53,000	5	
Blue-Green Infrastructure	Number of parks redeveloped	KPI.18	number	0	15	20	
	Area of public space revitalised	KPI.19	m2	TBD	TBD	20	
	Trees and bushes planted	KPI.20	number	0	25,000	21	
	Volume of trees/timber protected from logging	KPI.21	m^3/year	0	13,000	22	
	Impervious area replaced	KPI.22	m2/year	TBD	TBD	23	
Citizen engagement	Number of citizens engaged in education or campaign activities	KPI.23	number/year	0	100		
	Number of citizens engaged through participatory activities	KPI.24	number/year	0	100		

4 Part C – Enabling Climate Neutrality by 2030

Part C "Enabling Climate Neutrality by 2030" aims to outline any enabling interventions, i.e., regarding organisational setting or collaborative governance models or related to social innovations – designed to support the climate action portfolios (Module B-2) as well as aiming to achieve co-benefits outlined in the impact pathway (Module B-1). These interventions also address the identified opportunities, gaps and barriers identified Module A-2 and A-3.

4.1 Module C-1 Governance Innovation Interventions

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

4.1.1 Internal Governance

Bratislava has already made, and continues to make, significant steps to prepare its governance structures to achieve climate neutrality.

Climate neutrality is not solely the responsibility of one department, and we are working to **embed it across the entire city administration**. It influences all key areas, from urban planning and transport to energy and water management, making it a fundamental principle guiding the city's policies and decisions. Bratislava ensures this integration through **regular coordination meetings, joint discussions, and collaborative development of strategic documents.** These efforts create a **shared understanding of climate neutrality** as a cross-cutting priority and encourage cooperation between different departments. The city administration is committed to continuing this approach, as it not only enhances efficiency but also **brings more people on board, helping them recognise the importance of climate action** as a fundamental, **city-wide agenda.**

In November 2023, Bratislava established a **Climate Office**, which operates **directly under the Mayor's Office** within the city's organisational structure, underscoring its strategic importance. The Climate Office is part of the Urban Strategies and Analysis Unit, which integrates forward-thinking planning methods with contemporary urban policy trends, ensuring that the city's development is aligned with the most innovative approaches in urbanism. The Unit is responsible for implementing **Bratislava 2030**, the city's main strategic plan, and making sure that all other sector-specific strategies, including those on climate, are in line with it.

The Climate Office currently employs five staff members and has also established an internship programme. The team now includes an experienced decarbonisation specialist, a communications expert, municipal project manager/funding specialist and two energy managers (Energy Management Team established under the NetZeroCities Pilot Project). The main responsibilities of the Climate Office include:

- **Strategy & Coordination**: The Climate Office develops and oversees Bratislava's climate neutrality plan, integrating the climate plan into all city policies, investments, and operations. It supports internal collaboration across municipal departments, companies, and districts, ensures reporting and supports climate mainstreaming.
- **Partnerships & Projects**: It fosters cooperation with external stakeholders, including businesses, NGOs, and academia, while coordinating efforts across key climate-related areas such as energy, transport, spatial planning, and waste management. The office also initiates and implements pilot projects with decarbonisation benefits.
- **Monitoring, Learning & Communication:** The office monitors the impact of climate initiatives, ensures the integration of successful practices into city operations, raises awareness among residents and stakeholders, and acts as the primary point of contact for climate policy discussions at both local and international levels.

Each measure from the climate plan is assigned to the relevant city department best positioned to implement it effectively. However, as the climate transition is a cross-cutting issue that impacts multiple departments simultaneously, we have established this internal governance system to ensure coordinated action. This system operates across two levels of management, providing a structured approach to overseeing and integrating climate policies within the city's administration.

- **Climate Implementation Groups** – implementation teams built around emission domains and strategic priorities, composed of key senior or professional staff of the municipality and municipal organisations who will have the capacity and authority to guide and implement climate actions in their respective areas.
- **Climate Steering Committee = internal transition team =** comprising willing and motivated partners from various departments across City administration.

The Climate Office is responsible for efforts and helps build internal understanding of climate issues, enabling city departments and organisations to make climate-conscious decisions independently. Based on biannual evaluations, the city will adjust its structure and responsibilities to optimise climate action implementation.

Climate action also provides a key opportunity for engagement with Bratislava's 17 city districts, which can play a vital role in the city's climate neutrality efforts, as they manage specific services for residents as well as key infrastructures, including heating through concession agreements. Their proximity to residents makes them essential partners in implementing climate policies. At this point, 2 city districts have joined the climate plan, and a third one is preparing its action plan (Stare Mesto).

The implementation of the CCC will be reported regularly to the Environment and Climate Change Commission, ensuring transparency and accountability. Biannually, reporting to the City Council is planned and required.

Barrier(s) addressed 4.1.1	Siloed organisational structures (Municipal governance) Fragmentation of city governance (Municipal governance)

4.1.2 External governance

NGOs, Academia and Expert Communities

Achieving climate neutrality requires action across all sectors—including those beyond municipal control—and building trust and shared ownership is essential. Broad and inclusive stakeholder engagement not only fosters legitimacy and public support but also unlocks innovation, resources, and behavioural change at scale.

To tackle climate challenges effectively, Bratislava is prioritising collaboration with both the **scientific community and civil society**. The Climate Office is actively engaging with researchers, academics, and NGOs focused on climate and energy to co-create and implement impactful policies. By combining scientific evidence with the real-world experience of civil society actors, the city can develop **solutions** that reflect community needs.

To formalise this engagement, Bratislava is introducing two key structures:

- The **Climate Advisory Committee** will serve as a **specialised expert body** providing long-term technical and strategic guidance for the city's decarbonisation efforts. Composed of a small group of carefully selected experts, the Committee will ensure agility, credibility, and a high level of expertise. The Advisory Committee will be organised according to priority topics each year to ensure relevance. It may also invite participants from the **business sector or energy operators,** depending on the topic.

- The **Climate Leaders Forum** will act as a **broad stakeholder platform**, ensuring that implementation is informed by a wide range of perspectives and expertise. Meeting regularly, the Forum will foster **ongoing dialogue, collaboration, and feedback**, enabling more inclusive and effective implementation of climate objectives.

The establishment of these bodies reflects the city's commitment to a structured, inclusive, and expert-led approach to climate action. We recognise that strong political will must be supported by the active contribution of diverse voices, whose insights and lived experiences can help ensure Bratislava's climate strategies are ambitious, realistic, and forward-looking. These new structures will also promote transparency, accountability, and knowledge exchange, thereby enhancing Bratislava's institutional capacity to deliver on its climate commitments.

The city laid the groundwork for these partnerships in 2023 and 2024, involving climate NGOs and academia during the preparation of the Climate Plan, before its approval by City Parliament. These initial consultations marked the start of Bratislava's **formal cooperation with external expert stakeholders,** which now continues on a regular basis, with meetings held at least twice a year.

In alignment with the internal governance mechanisms described above, the **outputs and effectiveness of the Advisory Committee and Leaders Forum** will be reviewed **biannually**, with adjustments made as needed to structure, scope, or membership to ensure they remain fit for purpose.

Looking ahead, Bratislava will continue to expand community engagement through **public consultations, workshops, and participatory processes**, inviting residents to co-create local climate solutions. Partnerships with regional and international climate networks will also support mutual learning and alignment with emerging global practices. To further advance this work, the Climate Office will pilot **interdisciplinary workshops** bringing together professionals from urban planning, environmental science, and social sciences, unlocking creative synergies for climate solutions.

Barrier(s) addressed 4.1.2	Lack of technical staff (Municipal Governance) Lack of capacity (Municipal Assets) Lack of capacity and expertise (Waste and Wastewater) Lack of quality data for planning (Sustainable Transport)

Private sector engagement

Bratislava has long fostered partnerships with socially responsible businesses that have supported local climate initiatives—such as the **10,000 Trees Campaign** and joint efforts like the **Climathon**, co-organised with Swiss Re. Building on this solid foundation of CSR cooperation, the city has launched the **Bratislava Mayor's Climate Challenge**, a voluntary program engaging private sector actors in concrete, measurable actions to reduce emissions and advance the city's climate goals.

The initiative, developed with pro bono strategic support from **Bloomberg Associates** and informed by global best practices (e.g. London's Bratislava Mayor Climate Challenge, NYC's Carbon Challenge, and Melbourne's 1200 Buildings program), was piloted through the **NetZeroCities Pilot Cities Programme** and is now entering its first full year of implementation in **2025**.

The **2025 pilot cohort includes 10 companies**, representing **12 commercial buildings** and **243,000 m²** of floor space. These buildings currently consume over **34 GWh of energy annually**, and participating companies have voluntarily committed to reduce energy use by at least **3 GWh**, and to deploy **over 3,100 kWp** of new on-site renewable energy capacity. Several companies are also taking steps to eliminate fossil fuel-based heating systems, reduce waste, improve water efficiency, and encourage sustainable commuting among employees.

The programme targets large retailers, real estate asset managers, and office building operators—businesses with existing climate commitments or a demonstrated interest in CSR and sustainability. Participants sign a voluntary memorandum of cooperation with the city, committing to set and report on

energy and climate goals. In return, the city offers peer learning opportunities, training and technical support, public recognition, and visibility on municipal platforms.

The programme is more than a technical initiative—it is a platform for **public-private climate leadership**, encouraging knowledge exchange and community-building around shared climate goals. The city plans to recognise achievements at a public event, while using the pilot year to learn, adapt, and shape a long-term framework for expanding business participation across additional sustainability themes such as mobility, circular economy, and climate resilience.

The Bratislava Mayor's Climate Challenge is a key component of the city's broader effort to mobilise actors beyond its own operations—critical given that **municipal emissions account for just 11%** of the citywide total. **As the Challenge matures, Bratislava aims to grow this model into a standing partnership with the private sector on the path toward climate neutrality, including participants of the challenge into the above-mentioned external governance boards and onboarding them as signatories of the CCC.**

Developers' engagement

Bratislava has updated its **Methodology and Strategy for Urban Development**, focusing on enhancing cooperation between the city and developers to achieve sustainable urban growth. The new approach allows for broader forms of contributions from developers, including financial and non-financial commitments. These contributions are earmarked for improvements within the areas affected by zoning changes, ensuring that development projects directly benefit the local infrastructure and public amenities.

By involving developers in investments such as roads, public utilities, and green spaces, the city ensures that new developments contribute to the overall quality of life. This strategy aims to balance public and private interests, making developers jointly responsible for essential urban amenities, thereby supporting the sustainable growth and liveability of Bratislava. This collaborative mechanism is a modern, fair, and sustainable policy, clearly defining the responsibilities of developers, not only in Bratislava but possibly for other cities in the region and beyond.

The initiative is coordinated by the Urban Strategies and Analysis Unit, and the Climate Office plays an active role in focusing the city's relationship with developers on climate neutrality goals. We also propose pilot measures for new neighbourhoods in areas such as thermal management, energy efficiency of buildings, transportation, parking, and building materials. These measures will be:

- defined in development and financing strategies for each district and integrated into the methodology for urban plan changes,
- in mid-term defined through a voluntary standard for the city and developers.

Initially, we plan to develop a voluntary standard looking to incorporate selected solutions into spatial planning, since Bratislava is now developing its new urban master plan. Potential pilot solutions for testing may include:

- A local heating plan, focusing either on emission-free central heat production and distribution (e.g., using residual heat from wastewater, the Danube or traditional heat pumps with a connection to the central heat supply), or decentralised heat production from renewable sources.
- Maximising the share of renewable energy produced on the building in the building's total final consumption.
- Inventory of all reusable materials during the demolition of existing buildings to maximise the use of such materials in the construction of new buildings, which can serve as a basis for architectural competitions for the project.
- Design of the energy assessment of buildings for actual as well as projected energy consumption.
- Reducing the parking minimums, which will allow a significant reduction carbon footprint from the materials used in construction and promote non-motorised mobility.

- Maximising public transport accessibility and facilitating sustainable forms of transport (walking and cycling).
- Maximising the share of parking spaces prepared for the installation of charging stations for electric vehicles.

Co-creation with energy suppliers

Energy supply is vastly privatised in Bratislava, which means the city will need to engage all relevant energy providers and coordinate shared action for climate neutrality. The Climate Office already started the engagement process in the following two areas:

- **Electricity:** A key measure to reduce emissions in the built environment is to increase electricity production from local renewable energy sources (mostly solar PVs) on residential, commercial, and public buildings. Bratislava's role in this area is to strongly support processes aimed at simplifying the permits for photovoltaic installation and their connection to the grid. The Climate Office has started discussions with the main electricity provider ZSE to explore possibilities of cooperation on the deployment of renewables across the city. This will address the technological barrier of connectivity of renewables to the grid.
- **Heat:** While Bratislava has a large district heating network, it predominantly uses natural gas. The decarbonisation of district heating is a key priority for achieving climate neutrality, as it is responsible for 40% of the city's total GHG emissions. A key obstacle here is the fragmentation of the district heat system under several concession agreements with the city districts, which leaves the city without immediate control over strategic decisions on fuel sources and technology upgrades. Bratislava aims to maximize its influence on heat sources in new developments through its local heat plan, that is currently under revision as one of our key initiatives under the CCC, while also revising our approach to new concessions focusing on decarbonisation plans. However, the absence of clear gas phase-out mandates limits our ability to drive a full transition until 2030.

Barrier(s) addressed 4.1.3	Lack of financing tools for capital expenditures (Blue-Green Infrastructure) Limited municipal powers (Built Environment – Private Buildings) Low support for Renewable Energy Sources (Built Environment – Private Buildings) Low public acceptance of renewables (Built Environment – Private Buildings) High investment needs into network expansion (Sustainable Transport)

4.1.3 Engaging Citizens in Bratislava's Climate Transition

Bratislava's approach to citizen engagement in the Climate City Contract (CCC) is grounded in the city's existing experience with participatory planning, particularly through the development of the Bratislava 2030 Strategy.

As Bratislava has been building its climate agenda from the ground up since 2022, the CCC was co-created with internal and external stakeholders, including NGOs. Rather than launching a separate large-scale engagement process for the CCC, the city has drawn upon the outcomes of Bratislava 2030's comprehensive participatory framework and continues to develop tools and practices that make engagement more inclusive, targeted, and effective.

This earlier engagement process was structured around four core principles: integration of internal expertise, broad stakeholder participation, alignment with sustainable development goals, and a strong focus on monitoring and evaluation. A variety of formats—public meetings, surveys, workshops, and working groups—allowed for meaningful contributions from district representatives, experts, civil society, and municipal organisations. One central component was the Metropolitan Forums, which facilitated dialogue around urban challenges and gathered feedback from over 175 participants across seven events between 2020 and 2021, with an eighth forum functioning as a public hearing for Bratislava 2030.

Looking ahead, Bratislava will focus on deepening participation by expanding proven practices and making citizen engagement a central pillar of climate action. **The Metropolitan Institute of Bratislava (MIB) plays a key role through its participation department, active since 2020.** This team uses diverse, inclusive formats—from participatory walks to neighbourhood roundtables—to co-design public space projects, guided by the city's *Manual of Participatory Planning and Socio-Spatial Mapping.* Special attention is given to vulnerable groups such as children, seniors, and residents with limited mobility.

For several years now, Bratislava has been placing particular focus on children and young people, who are among the most affected by long-term climate impacts and key beneficiaries of today's decisions. Despite this, evidence suggests that youth engagement in urban policy in Slovakia remains limited. Research from the Friedrich Ebert Stiftung report *Youth Study Southeast Europe 2023: Slovakia Country Report* highlights that many young people in Slovakia prioritise personal independence and career over civic involvement, with activism and societal participation ranking low among their interests. Additional findings from GLOBSEC's study *Digital Youth Engagement in Slovakia and Poland (2023)* identify a lack of trust in institutions and limited awareness of participation opportunities as key barriers. These insights further justify Bratislava's commitment to engaging young people in co-designing the city's climate policies, ensuring their voices shape the transition they will inherit.

Bratislava's strategy places youth engagement not only as a matter of equity, but as a precondition for long-term success. One cornerstone of this approach is the **City for Children (Mesto pre deti)** programme, developed with UNICEF, which aims to create a city that respects the needs of children by improving public space, school streets, and mobility. It recognises that a child-friendly city is more accessible, safer, and healthier for everyone. The programme works closely with schools, parents, and children through participatory mapping, workshops, and surveys to identify challenges and co-create solutions. Over 2,000 children, parents, and teachers have contributed input, which led to the implementation of traffic calming measures, better visibility, and enhanced green infrastructure around selected schools. **Mesto pre deti** is also developing a framework for long-term systemic change, including guides and recommendations for redesigning school zones and influencing broader city policies through a child-first lens. This reflects Bratislava's commitment to designing the climate transition with and for younger generations. The Climate Office will actively engage with the **Mesto pre deti** programme to identify synergies and infuse the programme with the overall city climate vision. More information is available at mestopredeti.sk.

Another longstanding initiative is the **Bratislava Climathon**, a 48-hour hackathon event that has engaged hundreds of young people, students, and professionals over the past five years. Organised annually, the Climathon connects participants with mentors, city officials, and experts to co-create innovative solutions to local climate challenges. It serves not only as an idea incubator but also as an awareness-raising and education platform, encouraging active involvement in Bratislava's climate transition. More information is available at climathon.bratislava.sk. **The sixth edition will take place in 2025, with a renewed focus on engaging youth in the design of social interventions to raise climate awareness.** This year, the city also plans to involve secondary school students more directly in shaping and contributing to local climate mitigation efforts.

To further support engagement, a dedicated communications expert has joined the Climate Office to lead a robust communication and participative strategy, while also seeking external funding to amplify the city's climate narrative and establish completely new participation formats suitable for local conditions. Recognising that terms like "climate change" may not always resonate with the public, Bratislava plans to tailor its messaging to local values—emphasising health, nature, quality of life, and neighbourhood improvement. Slovak public opinion research shows that residents are highly responsive to messages that focus on their immediate environment and wellbeing, which provides an opportunity to make climate measures visible, relatable, and widely supported.

Through these initiatives, Bratislava is laying the groundwork for an inclusive and intergenerational climate transition. The CCC recognises that citizen ownership—especially from those who will live the longest with the outcomes—is not just desirable, but essential to the long-term credibility, fairness, and effectiveness of local climate policy.

4.1.4 Energy poverty and just transition

According to the Energy Poverty Risk Index developed by the Slovak Academy of Sciences (Dokupilová, D., Gerbery, D. (2023). Hĺbková štúdia energetickej chudoby. Centrum spoločenských a psychologických vied Prognostického ústavu SAV), Bratislava is the region with the lowest overall risk of energy poverty in Slovakia. This is largely due to higher-than-average household incomes and pensions, as well as a housing stock that is relatively modern or has undergone renovation.

However, vulnerable groups, particularly seniors living in older or unrenovated buildings, remain at risk of energy poverty. These households are more susceptible to inadequate heating in winter and may lack the means to maintain thermal comfort. Identifying these households and tailoring support mechanisms will require further analysis and data collection, including the integration of social, building, and energy datasets.

While energy poverty in Slovakia has traditionally been associated with inadequate heating, climate change is shifting the risk profile. Rising temperatures and more frequent heatwaves are creating new challenges, especially in urban environments like Bratislava, which already experiences higher-than-average national temperatures. The concept of “summer energy poverty”—the inability to cool indoor spaces during extreme heat—is becoming increasingly relevant and poses health risks to vulnerable populations, including the elderly, children, and people with chronic illnesses.

The city is actively putting forward recommendation to the design of the **Social Climate Fund**, which could help address specific issues in the Bratislava region. Our recommendations for measures to be implemented with or by the city using the Social Climate Fund include:

- Address Summer Energy Poverty in Climate and Social Policy

Recognize cooling needs as an emerging aspect of energy poverty. Include measures to provide passive and active cooling solutions (e.g. shading, ventilation, energy-efficient air conditioning) for vulnerable groups.

- Expand Access to Renovation Support

Ensure that vulnerable households and or social care facilities have access to public funding for energy efficiency upgrades, including both insulation and climate-adaptive cooling retrofits.

- Integrate Cooling Measures into Urban Planning

Prioritize green infrastructure (trees, green roofs, shaded public spaces) in areas with high social vulnerability and poor thermal performance of buildings.

- Continue Data Collection and Monitoring

Invest in regular data collection in partnership with research institutions to improve targeting, assess trends, and evaluate the effectiveness of interventions. This should include not only quantitative indicators but also community-based research and feedback

- Support Transport Poverty through Active and On-Demand Mobility

Prioritize investments in active mobility infrastructure (safe walking and cycling routes) in underserved areas, and expand on-demand mobility services (e.g. microtransit, shuttle services) for residents with limited access to public transport. These solutions can reduce car dependency, support inclusive mobility, and improve quality of life.

Barrier(s) addressed 4.1.3	Underrepresentation of youth in climate policy co-creation Energy poverty

4.2 Module C-2 Social Innovation Interventions

This module lists the actions taken by the city to support and foster social innovation initiatives or non-technological innovation more broadly (e.g., in entrepreneurship, social economy, social awareness & mobilisation, social cohesion and solidarity, etc) aimed to address the systemic barriers and leverage the opportunities identified in Module A-3[4].

Intervention name	Description	Systemic barriers / opportunities addressed	Leadership and stakeholders involved	Enabling impact and co-benefits
Mayor of Bratislava Climate Challenge	Bratislava is developing a programme that engages commercial building owners and tenants to pursue voluntary workplace energy use reductions.	Limited municipal powers (Built Environment – Private Buildings) Low support for renewable energy sources (Built Environment – Private Buildings) Low public acceptance of renewables (Built Environment – Private Buildings)	Bratislava Climate Office Private companies Mayor of Bratislava Energy providers	Emissions reduced through energy savings, renewable energy sources deployment and other measures taken by companies in the challenge. Strengthened relationship between the city and the private sector. Increased environmental awareness in companies.
Climathon Bratislava	Climathon Bratislava is an innovative event where teams of students and enthusiasts from across Slovakia develop creative solutions around climate mitigation and adaptation for the city of Bratislava	Siloed organisational structures (Municipal governance) Lack of technical staff (Municipal Governance) Lack of capacity (Municipal Assets) Lack of capacity and expertise (Waste and Wastewater)	Bratislava Innovations Office Bratislava Climate Office Metropolitan Institute of Bratislava (MIB) Private companies and start-ups Citizens and students	Various solutions for climate change mitigation and adaptation developed each year. A community of environmentally conscious students, workers and companies is created to support further climate action in the city. Proposal for social innovation tools as well as digital solutions
Re-use centres KOLO	KOLO serves as a tool for waste prevention. For a recommended contribution, residents can take items away and can also bring items	Insufficient financial sustainability for circular initiatives (Waste and Wastewater)	Department of Environment Waste Management Company (OLO) NGOs and civic organisations	Reduced landfilling and enhanced circularity principles. Educated citizens and children, who engage in more sustainable practices.

	they no longer need at home.	Lack of capacity and expertise (Waste and Wastewater) Lack of awareness of climate change among city staff and the public and resistance to lifestyle changes (Municipal Governance)	Citizens Private companies City Organisations (libraries, museums, schools)	Increased quality of life. Business opportunities for circular economy. Support for socially disadvantaged households.
Bratislava Municipal Rental Agency	The project of the Municipal Rental Agency is aimed at reducing and overcoming barriers in the availability of housing. It is intended for all people facing various obstacles in the commercial housing market, including those who are suffering from energy poverty.	Limited municipal powers (Private Buildings) Limited support for residents in the Bratislava region (Private Buildings)	Department of Social Affairs Citizens (single women, seniors, low-income households) Flat owners Banks Private Companies	No direct impact on climate neutrality. Social inclusion and support for disadvantaged households. Enhanced partnership between the city and private finance institutions.
City for Children programme	The City for Children project aims to create a safe, inclusive and functioning environment for children. In cooperation with schools, the city is developing mobility plans, introducing measures to increase the safety of pedestrians, supporting outdoor play, creating attractive and functional public spaces and building communities.	Growing reliance on private cars (Sustainable Mobility) Public resistance and lack of awareness (Blue-Green Infrastructure) Lack of awareness of climate change among city staff and the public and resistance to lifestyle changes (Municipal Governance)	Metropolitan Institute of Bratislava (MIB) Schools Citizens Children	Reduced emissions from transportation of children to schools. Changing behaviours of children towards more sustainable transportation. Reduced air pollution and noise from traffic. Increased quality of life. Increased quality of public spaces.
City Forests Eco-education Centre	The city has opened a modern eco-education centre in one of its most frequented forest areas. The centre offers courses,	Public resistance and lack of awareness (Blue-Green Infrastructure)	Bratislava City Forests Department of Environment	Educated children (and adults) who are more aware of environmental issues and are closer to nature.

	trainings and professional meetings on topics such as forest care, beekeeping, and supporting biodiversity	Lack of awareness of climate change among city staff and the public and resistance to lifestyle changes (Municipal Governance)	Schools (mostly primary) Academia (environmental researchers and specialists) NGOs and civic associations	Protected and enhanced biodiversity in city forests. Increased quality of life. Improved learning.

C-2.2: Description of social innovation interventions

Bratislava has introduced a range of social innovation initiatives in recent years that offer important lessons for advancing climate mitigation. These pilots span various sectors and stakeholders, from citizens to private companies, and serve as foundations for more structured and scalable approaches in the future. In the next iteration of the CCC, the city plans to build on these experiences, with a particular focus on strengthening cooperation with the private sector and engaging citizens in new ways.

Climathon Bratislava

Climathon is an innovation event where student teams and enthusiasts collaborate with city staff and experts to develop climate-related solutions. Hosted as part of a global network, Climathon Bratislava has generated ideas such as early warning systems, mobility apps, and digital tools to connect citizens to climate action. The city plans to better integrate future Climathon events with CCC implementation and ensure winning projects are carried forward with support from dedicated city leads.

KOLO Re-use Centres

The KOLO centres promote waste prevention and reuse by offering a space for residents to donate, repair, and acquire second-hand items. In partnership with NGOs, KOLO also delivers educational programs on recycling, fashion sustainability, and green consumption. One initiative—run with the ONE PARENT NGO—supports single-parent families with material aid and skill-building workshops. These centres support climate goals while advancing social inclusion and education.

Municipal Rental Agency (MNA)

Launched in 2023, the MNA pilot expands access to affordable housing by leasing private flats through a city-backed rental scheme. The programme also provides social support to tenants and works with private financial partners. While primarily a housing intervention, MNA contributes to climate goals by stabilising vulnerable households and demonstrating how public-private cooperation can address social and environmental challenges simultaneously.

City Forests Eco-Education Centre

Opened in 2023, the City Forests Eco-Education Centre offers environmental learning programs for schools and the public. With support from local NGOs such as the Daphne Institute, it delivers courses on biodiversity, forest ecosystems, and climate adaptation. The centre has quickly become a popular and accessible venue for hands-on education.

These social innovation projects showcase Bratislava's ability to test and deliver creative solutions that connect climate action with everyday life. Going forward, the city will work to systematise these efforts, gather expertise across disciplines, and embed social innovation as a key pillar in climate mitigation planning and CCC implementation.

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

Looking ahead, Bratislava will continue refining the CCC Action Plan through an iterative and inclusive process. This process will be guided by strengthened internal governance structures, participatory mechanisms, and regular feedback from partners and residents. The city aims to build on the lessons during the first implementation phase – evaluating effectiveness, applying new insights, and embedding learning throughout the transition.

Key infrastructure projects are already underway or nearing maturity enabling us to maximise early impact and demonstrate progress. These include the construction and modernisation of tram lines to enhance sustainable mobility, the upgrade of the Waste-to-Energy (WtE) facility to improve energy recovery and support district heating decarbonisation, and the deployment of solar on municipal buildings to accelerate clean energy generation. At the same time, the city will reinforce its strategic planning framework with two cornerstone documents: a new the Sustainable Urban Mobility Plan (SUMP) and an upgraded municipal heating strategy. The new SUMP will among other goals focus on improving coordination in a sector with very fragmented competencies. The revised heat plan will chart a clear pathway toward decarbonising district heating, which currently accounts for a major share of emissions. Together, these updated strategies will provide the necessary guidance to deliver long-term progress across key emission sectors.

To ensure coordinated implementation, Bratislava will further solidify its governance framework. Internal coordination will be reinforced through the Climate Office and Energy Management Team, while the new external platforms—the Climate Advisory Committee and the Climate Leaders Forum—will ensure inclusive and expert-led decision-making. Crucially, Bratislava also aims to broaden its coalition by onboarding new CCC signatories from the business, academic, and civil society sectors. The city also recognises that citizen engagement must be significantly strengthened in the coming years. This includes expanding inclusive participation formats, building on existing practices, and ensuring that climate action is shaped by local knowledge and lived experience. These initiatives will aim to reach underrepresented groups, especially young people, engaging them in co-designing Bratislava climate action.

By 2027, our climate action framework will be fully integrated, supported by biannual evaluations and updated GHG inventories. Implementation will prioritise transparency and open internal and external dialogue.

Bratislava is well-positioned to deliver a just and inclusive transition—and to serve as a model for other cities in Slovakia and across Central Europe. We stand ready to work with the European Commission, national actors, and peer cities to show that bold climate leadership is possible even under structural constraints. Despite challenges, Bratislava has already succeeded in catalysing institutional and policy change, demonstrating what is possible even in an unfavourable governance and financial environment. This makes our approach innovative and relevant for cities across Central and Eastern Europe that face similar challenges.

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

2030 Climate Neutrality Commitments

BRATISLAVA

NetZeroCities has received funding from the H2020 Research and Innovation Programme under the grant agreement n°101036519.

Table of contents

1 Introduction 3
2 Goal 4
3 Strategic priorities 7
4 Process and principles 9
5 Signatories 12

1 Introduction

Bratislava is proud to be part of the **EU Mission 100 Climate-Neutral and Smart Cities by 2030 (EU Cities Mission)**, which confirms our ambition to play a leading role in the transition to climate neutrality in the European and Slovak contexts. Our participation in the Mission is not only a recognition of our goals but a unique opportunity to leverage global and European innovation, local talent, and robust community engagement to accelerate this transition. Building on a foundation of strong political leadership and growing climate expertise, Bratislava envisions the coming decade as a chance to reimagine the city as climate-resilient, accessible, and caring for the needs of all citizens, especially those most vulnerable to climate change. In our view, thus group includes children and young people, who face disproportionate risks from the long-term effects of climate change, while not yet participating in the political process.

Before joining the Mission in 2022, the city focused primarily on building resilience through adaptation. Key initiatives included revitalising parks, rejuvenating public spaces, halting commercial logging in city forests, and expanding blue-green infrastructure. In parallel, significant investments in public transport laid the groundwork for sustainable mobility choices among residents. The Mission has acted as a key catalyst for Bratislava to strengthen and formalise its climate governance. Since 2022, the city has institutionalised climate leadership through the establishment of a dedicated Climate Office, new leadership roles, and integration of climate and sustainability priorities across municipal planning and investment processes.

In April 2024, Bratislava adopted its first Climate Plan, with a strong focus on reducing greenhouse gas emissions. The plan was developed by the Climate Office as the coordinating body, in close cooperation with municipal departments and relevant stakeholders, and was validated through the political process. Priority actions include boosting energy efficiency, co-creating a roadmap to decarbonize the heating sector, scaling up renewable energy deployment, enhancing sustainable transport infrastructure, and aligning urban planning with accessibility, the 15-minute city principle and decarbonization requirements.

The Climate City Contract (CCC) builds on this foundation as a strategic extension of the first climate plan. Together, they form a unified climate governance and policy framework that streamlines planning, implementation, and monitoring. The CCC adds particular value by placing stakeholder and citizen engagement at the centre of Bratislava's climate strategy, working towards a robust city-wide coalition led by the Mayor. The city now acts as a coordinator and accelerator, bringing together businesses, institutions, residents (especially young people), and civil society in joint commitments and shared learning to drive climate action forward.

The EU Cities Mission has provided an unparalleled opportunity to reinforce Bratislava’s efforts and help to turn our climate vision into reality. Through it, Bratislava gains access to technical support, targeted funding, and a platform for peer exchange with Europe’s leading cities. These resources will help refine strategies, deploy cutting-edge solutions, and deepen collaboration with citizens and stakeholders. The Mission Label can further boost Bratislava’s credibility and investment appeal, unlocking additional funding to advance the city's climate ambitions.

2 Goal

Context, Target and Approach

Bratislava is not starting from scratch in its efforts to reduce greenhouse gas emissions. In 2022, the most recent year for which complete data is available, 1.67 million tCO_2e of greenhouse gases were emitted within Bratislava's territory, representing 3.51 tCO_2e per capita. Compared to the baseline year of 2005, emissions per capita were reduced by nearly 37%. This progress reflects strong efforts by residents and businesses, particularly in improving building energy efficiency.

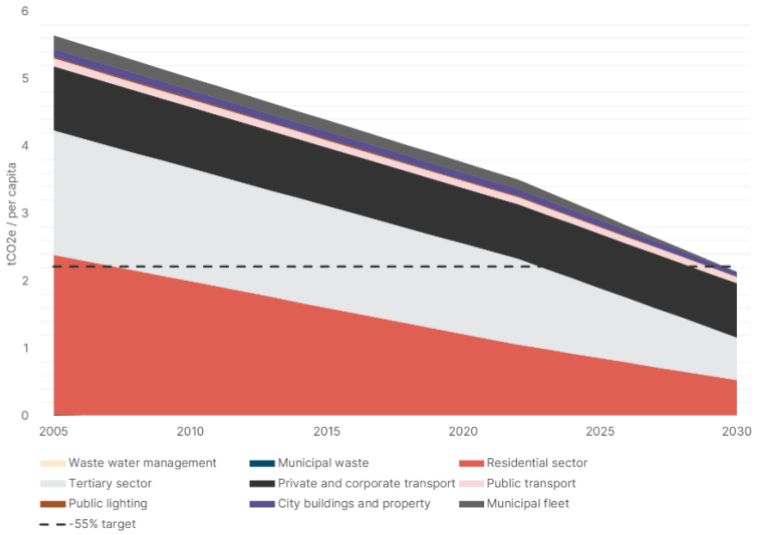
Building on this foundation, Bratislava aims to reduce emissions to 2.1 tCO_2e per capita by 2030—a 63% reduction from 2005 levels. In absolute terms, this represents 57% reduction compared to the baseline. While this target does not fully meet the EU Mission's definition of climate neutrality, it is both ambitious and achievable, laying the groundwork for full neutrality on an accelerated timeline and well before 2050. The CCC Action Plan outlines key levers to support this accelerated transition.

Bratislava directly manages around 11% of emissions, primarily through municipal buildings, public services, and mobility. Rather than viewing this as a limitation, the city embraces its role as a coordinator and convener. The CCC process has reinforced this responsibility, positioning Bratislava to align diverse stakeholders—from national agencies to local businesses—in joint climate action. This evolving collaborative model is essential. Emissions in sectors like heating and transport depend on decisions beyond the city's legal authority. Bratislava is therefore focused on influencing and supporting action by others—through policies, partnerships, and pilot projects.

While the CCC does not yet commit Bratislava to full neutrality, it sets a clear path forward, as it enables the city to secure technical assistance and funding, engage citizens and businesses more effectively, learn from leading European cities, and develop a science-based neutrality roadmap aligned with EU goals.

In future iterations of the CCC, Bratislava aims to build on this momentum, scale up partnerships, and deepen cooperation across all levels of governance to unlock the city's full transformation potential. The Climate Action Plan also proposes several pathways for accelerated action that could open up if the support of the national government for the Mission work is secured in the future.

Figure 1: Greenhouse gas emissions 2005 – 2030



Structural Challenges to Climate Action

Despite its ambition, Bratislava faces several systemic barriers that limit the full implementation of its climate neutrality pathways.

One major challenge is the city's limited fiscal autonomy. Slovakia remains one of the most centralised countries in Europe in terms of local government spending. Bratislava relies heavily on central government transfers, lacks the authority to adjust local taxes, and is legally bound to maintain balanced budgets and comply with strict debt ceilings. These constraints prevent the city from engaging in strategic borrowing for large-scale climate investments.

Another key barrier lies in national-level regulation. Critical emission sectors such as energy, buildings, and transport are governed at the national level, leaving Bratislava with limited power to initiate structural reforms. The city cannot mandate a phase-out of natural gas nor adopt stricter local building codes beyond national standards. Heating poses a particularly significant challenge, accounting for approximately 40% of the city's emissions. The district heating network is almost entirely dependent on natural gas and is largely outside municipal control. Nonetheless, Bratislava is leveraging instruments such as the local heating plan to encourage decarbonisation, particularly in new developments.

A further complication stems from fragmented governance. In the transport sector, responsibilities are divided among national, regional, city, and city district levels. This division of competencies hampers the creation of an integrated, efficient transport system and underscores the broader need for administrative reform and stronger metropolitan coordination.

Despite these constraints, Bratislava has made tangible progress in key areas of urban sustainability and climate adaptation. Since 2019, the city has launched a large-scale tree planting initiative and revitalised public spaces to enhance green infrastructure and improve quality of life. Urban forest management has been reformed to support biodiversity and climate resilience. The city has also significantly expanded its public transport system, investing in modern tram infrastructure and new vehicles with support from European Structural and Investment Funds. To further reduce emissions, Bratislava has introduced parking regulations to better manage car use and has improved waste management by establishing reuse centres and implementing a modern organic waste collection system.

These measures show that Bratislava is capable of decisive action within its current mandate. They also serve as a foundation for broader, more transformative climate action—should enabling conditions and multilevel cooperation improve.

Stakeholder and Citizen Engagement as a Lever for Systemic Change

The Climate City Contract builds on and extends Bratislava's climate efforts by placing stakeholder and citizen engagement, including children and young people, at the centre of climate governance. In line with the core principles of the EU Cities Mission, we envision the CCC is a platform for raising challenges to higher levels of government, promoting reform, and mobilising the broader ecosystem.

Since joining the Mission, Bratislava has established a Vice Mayor for Climate, created a Climate Office, including senior energy experts, and has started implementing climate actions integrated into the climate action plan developed through a data-driven, participatory process. Engagement efforts are already showing results. Ten major companies have joined the Bratislava Mayor Climate Challenge to improve energy efficiency, marking an important step in private sector involvement. In parallel, the city is preparing voluntary standards for developers aimed at reducing both operational and consumption-based emissions, encouraging circular construction practices and the use of low-carbon materials. A stakeholder platform Climate Leaders Forum, participating in the Climate Plan co-creation and monitoring have been operational since 2023.

Bratislava recognises the need to significantly step up its efforts to engage all citizens in meaningful and inclusive ways. Public participation is crucial not only to ensure social acceptance of climate measures, but also to harness local knowledge, build ownership, and promote behavioural change. In addition, a comprehensive communication strategy is being developed within the Climate Office to support the city's climate initiatives, with a focus on children and young people as future residents, whose opinions the city aims to listen to from the outset.

In this regard, the city plans to build on its existing experience, strong communication channels and participation tools. For example, it aims to expand its annual Climathon event—now in its fifth year—to engage more secondary school students, while focusing on social innovation. The city also plans to work closely with the Metropolitan Institute of Bratislava (MIB), which since 2020 has operated a dedicated participation department. MIB supports public engagement in revitalisation projects through diverse and inclusive formats such as focus groups, workshops, round tables, neighbourhood events, interviews, and participatory walks or rides. Vulnerable groups such as children, seniors, and people with limited mobility are actively included, guided by Bratislava's *Manual of Participatory Planning and Socio-Spatial Mapping.*

These actions represent the first steps toward building a strong, city-wide coalition for climate neutrality.

Administrative Boundaries and Scope

Our 2030 target encompasses the entire administrative territory of the City of Bratislava, including all urban districts. This comprehensive coverage ensures that every part of our city is involved in the collective effort to reduce emissions and enhance sustainability.

The 2.1 tCO2e per capita by 2030 target excludes industrial emissions, which fall under the European Union Emissions Trading System (ETS). The City of Bratislava's most recent GHG inventory, which was developed with 2022 data, excludes IPPU and AFOLU.

Co-Benefits of Climate Action

Bratislava's commitment to sustainable transformation by 2030 brings a multitude of co-benefits that will enhance the quality of life for our residents, support economic development, and protect our natural environment. Key co-benefits include:

- **Improved Air Quality**: Reducing reliance on fossil fuels will significantly decrease air pollution, leading to better respiratory health and overall well-being for our citizens.
- **Stronger Local Economy**: Investing in renewable energy sources and energy efficiency will stimulate job creation and innovation in green technologies, bolstering our local economy.
- **Enhanced Public Health**: Promoting active transportation modes such as cycling and walking, alongside cleaner public transit options, will encourage healthier lifestyles and improve health outcomes.
- **Energy Security**: By increasing our use of locally produced renewable energy, Bratislava will enhance its energy independence and resilience against global energy market fluctuations.
- **Biodiversity and Green Spaces**: Expanding green infrastructure and sustainable urban planning will protect local biodiversity, enhance urban ecosystems, and provide recreational spaces for residents.
- **Climate Resilience**: Comprehensive climate action plans will improve the city's resilience to climate impacts, such as heatwaves and extreme weather events, ensuring a safer and more adaptable urban environment.
- **Social Benefits**: Sustainable climate solutions will enhance the quality of life in Bratislava by creating a healthier and more desirable living environment, strengthening local communities

through adaptation efforts, reducing energy poverty among vulnerable populations, promoting active transport to improve health, and fostering community cohesion through engagement in climate action, and empowering children and youth to take an active role in shaping a sustainable future.

By pursuing our climate ambition, Bratislava aims to create a caring, accessible, and resilient city for current and future generations – as defined in our key roadmap, Bratislava 2030. Our efforts will serve as a model for other cities in Slovakia and beyond striving to achieve similar goals, demonstrating that ambitious climate action is both necessary and beneficial.

3 Strategic priorities

Bratislava is committed to paving the way toward climate neutrality through a set of clear, actionable strategic priorities. These priorities focus on areas where the city can lead by example and activate broader systemic change: municipal assets, waste and wastewater, sustainable transport, and private building efficiency.

1. Municipal Assets: Leading by Example

Bratislava is taking direct responsibility for decarbonising its own operations. The city aims to:

- Renovate and upgrade municipal buildings to reduce energy consumption by 35% by 2030.
- Roll out comprehensive energy management systems to achieve a 20% energy savings across all city-owned companies.
- Replace all public lighting with LED luminaires featuring smart intensity controls.
- Install renewable energy systems to cover at least 20% of annual electricity demand in municipal buildings.

These actions are central to Bratislava's leadership role in climate action, demonstrating what is possible and setting a standard for other sectors.

2. Municipal Waste and Wastewater: Turning Waste into Value

Bratislava intends to modernise its waste and wastewater systems to align with circular economy principles:

- Upgrade the Waste-to-Energy (WTE) facility to increase heat and electricity recovery from residual waste.
- Construct a new composting plant and biogas facility to treat biodegradable waste and generate renewable energy.
- Meet a target of 65% recycling and sorting, less than 5% landfilling, and treat remaining waste through energy recovery by 2035.
- Conduct feasibility studies on recovering residual heat from wastewater systems.

These investments will support both emissions reductions and energy security, while minimising reliance on landfilling.

3. Sustainable Transport: Expanding Clean and Active Mobility

To reduce emissions in the transport sector, the city will accelerate the shift toward clean and active mobility options envisioning to increase the modal share of sustainable transport (public transit, walking, cycling) to 70% by 2030. To do support this shift, we will:

- As a flagship initiative funded from the European Structural and Investment Funds, build or modernise 10 km of tram lines to strengthen the backbone of the public transport system.
- Transition 50% of the municipal fleet to zero-emission vehicles and deploy 400 new EV charging stations.
- Construct at least 42 km of new cycling infrastructure, including bike racks and shared mobility support.

This comprehensive approach will reduce car dependency and improve urban air quality and accessibility.

4. Private Buildings: Unlocking Emissions Reductions at Scale

Improving energy performance in residential and tertiary buildings is essential for Bratislava's climate targets, as the residential sector produces 31% of the city's Overall Emissions.

Key Residential Sector Goals are to:

- Reduce household energy consumption by 23%.
- Reach a renewable energy production target of 226,000 MWh in residential buildings.

City Support and Catalysing Actions include:

- Coordinate with distribution companies, permitting offices (including for heritage buildings), and technology providers to facilitate the installation of photovoltaics.
- Support residents through energy-saving awareness campaigns and advisory services

5. Tertiary Sector Goals

The tertiary sector (including services, retail, education, healthcare, and public administration) is responsible for 36% of the overall city emissions and needs to contribute by:

- Achieving a 38% reduction in energy use across
- Increasing renewable energy production in the tertiary sector to 380,000 MWh.

City Support and Catalysing Actions:

- Launch and **expand the Business Climate Challenge** to engage companies in energy efficiency improvements.
- **Introduce voluntary energy and emissions standards for developers**, targeting both operational and consumption-based emissions, with the vision of updating standard spatial planning tools to prioritise decarbonisation and adaptation
- Advance district heating decarbonisation by **engaging private heating providers through the local heating plan** and encouraging the transition away from natural gas.
- **Develop and implement a comprehensive communication strategy** to raise awareness and engage all stakeholders, including residents, businesses, and academia, with a special focus on children and young people, in Bratislava's climate and energy initiatives.

Together, these measures create a strategic framework that aligns direct action, regulation, and engagement to drive Bratislava's climate transformation. They will serve as the backbone of the next phase of the CCC, as Bratislava builds on early successes to accelerate implementation and partnership-building citywide.

4 Process and principles

To achieve our 2030 targets, Bratislava has adopted a comprehensive and integrated systemic work process Involving internal and external management and coordination structures.

Internal Management led by the Climate Office and the Vice Mayor for Climate and:

- **Climate Implementation Groups**: These teams, composed of key senior or professional staff from the municipality and municipal organisations, are being established around the strategic priorities outlined above. They will guide and implement actions in their respective areas, ensuring coordinated efforts across different sectors.

- **Climate Steering Committee:** A strategic team that includes relevant stakeholders has been formed to provide high-level oversight over the city's climate action.

External Coordination and Stakeholder Engagement: **Building a City-Wide Climate Coalition**

The first iteration of the Climate City Contract (CCC) positions city-owned companies as foundational partners in Bratislava's climate efforts. Their active involvement is crucial for demonstrating municipal leadership and showcasing what is possible within the city's operational remit.

However, achieving long-term climate neutrality requires action far beyond the city's direct control. The next phase of the CCC focuses on expanding this coalition by engaging a diverse array of stakeholders—from research institutions and government bodies to private sector actors and civil society. These partners will be invited to co-develop solutions, shape policy recommendations, and contribute to implementation as formal CCC signatories or members of advisory structures.

- **Research, Academia, and Expert Communities** play a key role in shaping evidence-based, locally relevant climate strategies. Bratislava collaborates with institutions such as the Slovak Academy of Sciences, the Slovak University of Technology, and the Faculty of Natural Sciences at Comenius University, as well as with NGOs and local experts through consultations, research partnerships, and thematic initiatives.

- **Government Institutions** are essential for enabling systemic change. While formal cooperation with national ministries has not yet been secured, Bratislava seeks to engage key institutions where common goals can support progress—such as analytical units at relevant ministries, the Slovak Innovation and Energy Agency, and the Slovak Hydrometeorological Institute. These bodies can provide data, technical guidance, and policy alignment at the national level.

- **The Business Sector** is a growing partner in climate action. Bratislava is onboarding private companies through the Bratislava Mayor's Climate Challenge, a voluntary initiative that encourages emissions reductions and energy efficiency. Developers are also involved through voluntary urban planning standards and pilot projects focused on creating low-carbon neighbourhoods.

- **The Energy Sector** is critical to decarbonisation, especially in electricity and heating. Bratislava is working with the main electricity provider, ZSE, to improve permitting processes for photovoltaics and grid integration. In parallel, the city is coordinating with district heating operators to revise the local heating plan and support the transition away from fossil fuels.

- **Civil Society and Communities** are central to Bratislava's climate transition. The city will build on established participatory practices to further engage citizens, especially children and youth, through co-creation workshops, community dialogues, and thematic events that integrate environmental, planning, and social perspectives, alongside innovative communication activities to raise awareness and foster active participation.

To formalise this engagement and strengthen governance, Bratislava has created two new stakeholder bodies:

- **The Climate Advisory Committee**, a small, expert-driven group providing technical guidance and strategic direction, with flexibility to involve additional stakeholders as needed.

- **The Climate Leaders Forum**, a broader participatory platform designed to gather diverse perspectives, foster collaboration, and ensure the inclusivity of climate implementation efforts.

Together, these mechanisms reflect Bratislava's commitment to an inclusive, structured, and expert-led climate governance model. By growing and sustaining this network of partners, Bratislava aims to build a whole-of-society coalition for climate neutrality—anchored in shared responsibility, trust, and long-term cooperation.

Monitoring and Updating the Climate City Contract

The Climate Office, established within the Urban Strategies and Analysis Unit in 2023, will be responsible for the strategic coordination and regular monitoring of the CCC. This includes:

- **Regular Reporting:** At least once every two years, a report will be submitted to the Bratislava City Council ensuring transparency and accountability in the political process.

- **Data Collection and Evaluation:** The Climate Office will focus on collecting detailed data on energy consumption and emissions to monitor the impact of implemented measures accurately. Quality data is essential for effective monitoring and to document successes and share best practices.

- **Learning:** Regular stock-taking and strategy adaptation based on new learnings and stakeholder/citizen feedback.

Guiding Principles

The implementation of the Climate City Contract will be guided by the following key principles:

- **Climate Justice:** Ensuring that climate actions do not deepen existing inequalities but rather create opportunities for comprehensive solutions to related social issues, focusing on data collection and monitoring.

- **Co-Creation, Learning and Flexibility:** Engaging citizens, businesses, and other stakeholders in the development and implementation of climate measures to ensure that the solutions are inclusive and widely supported. Ensuring that the process is iterative and flexibly reflects lessons learned and new developments.

- **Multi-Level Governance:** Striving to coordinate efforts across different levels of government and sectors to align policies and maximise the impact of climate actions.

- **Stakeholder and Citizen Engagement:** Continuously involving the community in the climate action process to effectively reflect their needs and priorities. This includes organising regular meetings, feedback sessions, and collaborative projects with various stakeholders.

By adhering to these principles and processes, Bratislava aims to mainstream climate action and climate targets into all aspects of city governance, communications, and participation processes.

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.

Name of the signatory (organisation)	Sector / Domain / Level of operation[2]	Legal form	Name of the responsible person	Position of the responsible person
City of Bratislava	Municipality	City	Matúš Vallo	Mayor
Odvoz a likvidácia odpadu	Municipal Waste Company	Akciová spoločnosť (joint-stock company)	Ivan Sokáč	CEO & Chairman of the Board
Bratislavská vodárenská spoločnosť	Municipal Water Company	Akciová spoločnosť (joint-stock company)	Ladislav Kizák	CEO & Chairman of the Board
Technické siete Bratislava	Municipal Public Lighting and Networks Company	Akciová spoločnosť (joint-stock company)	Juraj Nyulassy	CEO & Chairman of the 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.