

ANNEX 4: SUMMARY OF CLIMATE CHANGE ADAPTATION MEASURES

No.	Measure	Term	Required budget	Possible source of financing	Responsible / support units
A.1. Legal-administrative and management framework for climate policy					
A.1.1	Undertaking initiatives for legislative and regulatory normative changes for integrated adaptation to the climate changes affecting the territory of Sofia Municipality	Short-term priority– 2023 Repeatedly	BGN 72 thousand	Budget of Sofia Municipality	Green System, Ecology and Land Use Division/ Architecture and Urban Planning Division and Legal and Administrative Control Division/ ME „Sofiaplan“
A.1.2	Creation of a municipal financial mechanism for climate change adaptation	Short-term priority– 2023 Repeatedly	BGN 315 thousand	<ul style="list-style-type: none"> Financial instruments (loans supported by the European Structural and Investment Funds) 	Green System, Ecology and Land Use Division/ Finance and Healthcare Division
A.1.3	Introduction and compliance with the spatial planning indicators for maximum percentage of ingestion and minimum percentage of permeability of the urban surfaces; complementation of the structural indicator for minimum obligatory landscaped yard area	Short and Long-term priority – 2023 and 2030 Once and repeatedly	BGN 425 thousand	<ul style="list-style-type: none"> Budget of Sofia Municipality Budget of ME „Sofiaplan“ Research Fund (Sofia Municipality as a partner of scientific organizations) 	Architecture and Urban Planning Division/ ME „Sofiaplan“
A.2 Upgrading of the institutional, expert and financial capacity and the planning basis for the measures implementation					
A.2.1	Establishment of an applied-research network for study, analysis and simulation of the microclimate-related characteristics of the urban environment and for preparation for extreme weather events	Medium and Long-term priority – 2025 and 2030	BGN 800 thousand	<p>In partnership with scientific organizations:</p> <ul style="list-style-type: none"> Environment Program – Priority 4 Innovation and Competitiveness Program – Priority 1 LIFE URBACT Horizon 2020 –GATE project – will provide appropriate equipment 	Architecture and Urban Planning Division/ ME „Sofiaplan“

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				and laboratory (Sofia Municipality is a partner of Sofia University);	
A.2.2	Strategic spatial planning of new and reconstruction of existing elements of the green and blue systems and infrastructure of Sofia Municipality and the city of Sofia	Short, Medium and Long-term priority – 2023 development, 2025 first concepts and implementation; up to 2030 – approved center for urban planning services for adaptation Once and many times, constantly	BGN 1.6 mil.	<ul style="list-style-type: none"> Budget of Sofia Municipality Budget of ME „Sofiaplan“ Environment Program – Priority 4 	Architecture and Urban Planning Division/ ME „Sofiaplan“
A.2.3	Development of a roadmap for the use of buildings roof areas for climate-related activities	2024	BGN 120 thousand	<ul style="list-style-type: none"> Budget of Sofia Municipality EUKI (partnerships with NGOs) 	Architecture and Urban Planning Division/ ME „Sofiaplan“
A.2.4	Action plan development and implementation for the population protection of Sofia Municipality in case of heat waves	2023 – plan development 2030 – plan implementation	BGN 1 mil.	<ul style="list-style-type: none"> LIFE Budget of Sofia Municipality WHO Office in Bulgaria 	Emergency Aid and Prevention Directorate / Finance and Healthcare Division
A.2.5	Development of general guidelines for the inclusion of climate change adaptation when assigning transport infrastructure projects	2022	BGN 20 thousand	Budget of Sofia Municipality	Public Construction Division / Climate, Energy and Air Directorate
A.3 Applied urban R&D activities					
A.3.1	Elaboration of a concept and municipal information system development for the processes related to the activities for adaptation to climate change management	2025 Constant	BGN 1 mil. for development and BGN 100 thousand /year for maintenance	<p>In partnership with scientific organizations:</p> <ul style="list-style-type: none"> Environment Program – Priority 4 and equity by Sofia Municipality LIFE ПИК – приоритет 1 	ME „Sofiaplan“ / Green System, Ecology and Land Use Division/ Digitalization, Innovation and Economic Development
A.3.2	Study of the city of Sofia microclimate and development of a meso-model and platform for micro simulations for	Short, Medium and Long-term priority – 2023 , 2027 and 2030	BGN 1,25 mil.	<p>In partnership with scientific organizations:</p> <ul style="list-style-type: none"> LIFE 	ME „Sofiaplan“

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	management, planning and development purposes			<ul style="list-style-type: none"> Innovation and Competitiveness Program – Priority 1 Horizont 2020 – GATE project 	
A.3.3	Complex evaluation of Sofia Municipality climate in micro- and meso-climatic terms, as a factor for air pollution	2022	BGN 20 thousand	Budget of Sofia Municipality	Climate, Energy and Air Directorate
A.3.4	Development/upgrade of an early warning system for meteorological situations with dangerous impacts on the various economic areas and sectors of Sofia Municipality, incl. on air quality	2023 Annually	- BGN 80 thousand – for initial development of the system; - BGN 20 thousand - to maintain it in permanent operational status	<ul style="list-style-type: none"> Innovation and Competitiveness Program – Priority 1 Budget of Sofia Municipality 	Climate, Energy and Air Directorate / Digitalization, Innovation and Economic Development
A.3.5	Study of the eco-system services and pilot introduction of two-way bidirectional cost recovery schemes and benefits balancing	Short and Medium-term priority – 2023 and 2025	BGN 2 mil.	In partnership with scientific organizations: <ul style="list-style-type: none"> Horizon Europe 	Architecture and Urban Planning Division/ ME „Sofiaplan“
A.3.6	Food security study, creation of conditions and capacity development for urban and suburban agriculture, food reserve and crisis management of the agro-food chain	Short, Medium and Long-term priority – 2023, 2025 and 2030	BGN 1,125 mil.	<ul style="list-style-type: none"> Program for Foods – technical aid LIFE 	ME „Sofiaplan“ / Security Directorate / Green System Directorate / District administrations
A.3.7	Climate vulnerability study among the socio-demographic groups on the territory of Sofia Municipality and the city of Sofia and action plan development	Short, Medium and Long-term priority – 2023 , 2027 and 2030	BGN 625 thousand	<ul style="list-style-type: none"> LIFE (same argument as for A.3.7, but this time in terms of demand for ecosystem services) Program for Foods – technical aid (option – together with A.3.7 as one project) 	Climate, Energy and Air Directorate / Social Activities and Integration of People with Disabilities Division / ME „Sofiaplan“ / Finance and Healthcare Division
A.3.8	Study of the relationship between the heat waves and the cardiovascular diseases mortality in the city of Sofia	2023	External financing	n.a.	Climate, Energy and Air Directorate
A.3.9	Summary of the best practices, technologies and solutions for adaptation to climate change and	Short-term and Long-term priority – 2023 and 2030	BGN 625 thousand	<ul style="list-style-type: none"> EUKI Innovation and Competitiveness Program – Priority 1 Climate-KIC (partly) 	Sofia Development Association

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	development of a digital catalogue with guidelines for households and businesses			<ul style="list-style-type: none"> Support through partnerships and business model 	
A.3.10	Ongoing specialized training for experts and administrators	2022-2030	BGN 10 thousand/year. for participation in trainings	<ul style="list-style-type: none"> External financing under international programs Budget of Sofia Municipality 	Climate, Energy and Air Directorate
A.3.11	Creation of a plan supporting the long-term tree vegetation and other green areas watering in conditions of prolonged summer and autumn droughts	2022	BGN 20 thousand	<ul style="list-style-type: none"> Budget of Sofia Municipality; EUKI (in partnership with NGOs; could be implemented in one project with A3.16); 	Green System, Ecology and Land Use Division
A.3.12	Development of expert catalogues of trees and other plant species suitable for urban landscaping and agricultural crops and varieties suitable for use in agriculture given the expected future climatic conditions	2022	BGN 40 thousand	<ul style="list-style-type: none"> Budget of Sofia Municipality EUKI (in partnership with NGOs) 	Green System, Ecology and Land Use Division / ME „Parks and Urban Gardens“
A.3.13	Transport systems capacity assessment related to climate change	2022	BGN 50 thousand	Budget of Sofia Municipality	Transport and Urban Mobility Division / Climate, Energy and Air Directorate
A.3.14	Study on the activities for the transport infrastructure conditions improvement related to the specific climate risks	2022 Constant	BGN 30 thousand	Budget of Sofia Municipality	Public Construction Division / Climate, Energy and Air Directorate
A.3.15	Introduction of eco-label for the tourist companies in Sofia	2022	BGN 20 thousand	Budget of Sofia Municipality	ME „Tourism“
A.3.16	Study and assessment of the landslide processes current state	2025	BGN 100 thousand	Budget of Sofia Municipality	Department of Architecture and Urban Planning
A.4 Investments in technical and green infrastructure, buildings and public works					
A.4.1	Protection of the tall buildings facades from overheating	Medium-term priority– 2023-2027 Repeatedly	BGN 50 mil.	<ul style="list-style-type: none"> Regional Development Program – Priority 1 and 	Architecture and Urban Planning Division/

No.	Measure	Term	Required budget	Possible source of financing	Responsible / support units
				equity by Sofia Municipality. <ul style="list-style-type: none"> • National Decarbonization Fund (when renovating residential buildings, if permissible) • Financial instruments (loans supported by the European Structural and Investment Funds) 	Green System, Ecology and Land Use Division/ Transport and Urban Mobility Division /
A.4.2	Transport hubs protection from overheating	Short and Medium-term priority – 2022-2023 and 2027 Repeatedly	BGN 5 mil.	Regional Development Program – Priority 1 and equity by Sofia Municipality	Architecture and Urban Planning Division/ Transport and Urban Mobility Division / Public Construction Division / Green System, Ecology and Land Use Division
A.4.3	Creation of "blue-green" arches for coolness in urban environment and blue and green acupuncture	Short and Long-term priority – 2022-2023 and 2027 Repeatedly	BGN 5 mil.	<ul style="list-style-type: none"> • Environment Program – Priority 4 and equity by Sofia Municipality • Recovery and Resilience Plan, project "Integration of the ecosystem approach and implementation of nature-based protection solutions for protected areas of the Natura 2000 network" - for places with ecological connectivity to Vitosha and other areas of the ecological network Natura 2000 in Sofia Municipality • Financial instruments (loans supported by the European Structural and Investment Funds) 	Transport and Urban Mobility Division / Public Construction Division / Green System, Ecology and Land Use Division

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A.4.4	Landscape measures to accelerate trees growth	Medium and Long-term priority – 2023 - 2030 Repeatedly	BGN 11 mil.	<ul style="list-style-type: none"> Budget of Sofia Municipality – operational activity; Environment Program – Priority 3 	Green System, Ecology and Land Use Division/ Architecture and Urban Planning Division
A.4.5	Improvement of the technical equipment needed for rapid response in case of fires in forest, agricultural and urban areas	2023	BGN 1,5 mil.	<ul style="list-style-type: none"> Budget of Sofia Municipality; Environment Program – Priority 4 	Emergency Aid and Prevention Directorate
A.4.6	Socio-demographic groups adaptive capacity increase by improving the public transport system accessibility and provision of air conditioning in the vehicles	2021 – 2030	No additional funds are required beyond those provided for in the SUMP for the public fleet renewal and for the reconstruction of pedestrian and public spaces, street network and creating an accessible environment	<ul style="list-style-type: none"> Regional Development Program – Priority 1 and equity by Sofia Municipality 	Transport and Urban Mobility Division
A.4.7	Increase of the intensity of public places maintenance	2021 – 2030	BGN 4,5 mil.	<ul style="list-style-type: none"> Budget of Sofia Municipality – operational activity; Environment Program – Priority 4 and equity by Sofia Municipality 	Waste Management Directorate
A.5 Development of a system for wide public involvement in the measures implementation					
A.5.1	Communication activities implementation to raise public awareness, knowledge and attitudes regarding climate change mitigation	2021 – 2030	BGN 100 thousand/year	<ul style="list-style-type: none"> Budget of Sofia Municipality LIFE – a separate communication project or part of an integrated project, if proposed by Sofia Municipality DEAR 	Climate, Energy and Air Directorate
A.5.2	Develop a concept and initiate actions for introduction of the climate change topic as part of the civil, health, environmental and intercultural	2022 – concept; 2024 – topic introduction	BGN 60 thousand	<ul style="list-style-type: none"> Budget of Sofia Municipality EUKI (in partnership with NGOs, may be a 	Culture, Education, Sports and Youth Activities Division / Climate, Energy and Air Directorate

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	education, as well as of the STEM training			<ul style="list-style-type: none"> project of a previous one led by NTEF) LIFE – a separate communication project or part of an integrated project, if proposed by Sofia Municipality 	
A.5.3	Development of a sectoral program for short-term training on climate change and adaptation measures in the field of tourism	2022	BGN 15 thousand	<ul style="list-style-type: none"> Budget of OP Tourism - communication programs LIFE – as part of an integrated communication project INTERREG/ Transnational cooperation programs 	ME „Tourism“
A.5.4	Initiation, development and introduction of modules dedicated to climate change for the existing curricula and disciplines of the universities	2023	N.a.	<ul style="list-style-type: none"> EUKI LIFE – as part of an integrated project Towards the implementation of similar measures in the National Plan for Adaptation to Climate Change 	Culture, Education, Sports and Youth Activities Division / Climate, Energy and Air Directorate
A.5.5	Emphasis on the tourist sector climate change adaptation in the work of the Tourism Advisory Board	2022-2030	The activity is organizational, no additional budget is needed	n.a.	ME „Tourism“
Total budget:			BGN 90,262 mil. for the period till 2030		

** All envisaged financial sources in the for Sustainable Energy and Climate Action Plan of Sofia Municipality 2021-2030 can be updated and changed after the approval of the programs financed by the European funds, the Recovery and Resilience Plan of the Republic of Bulgaria and other financial mechanisms.*