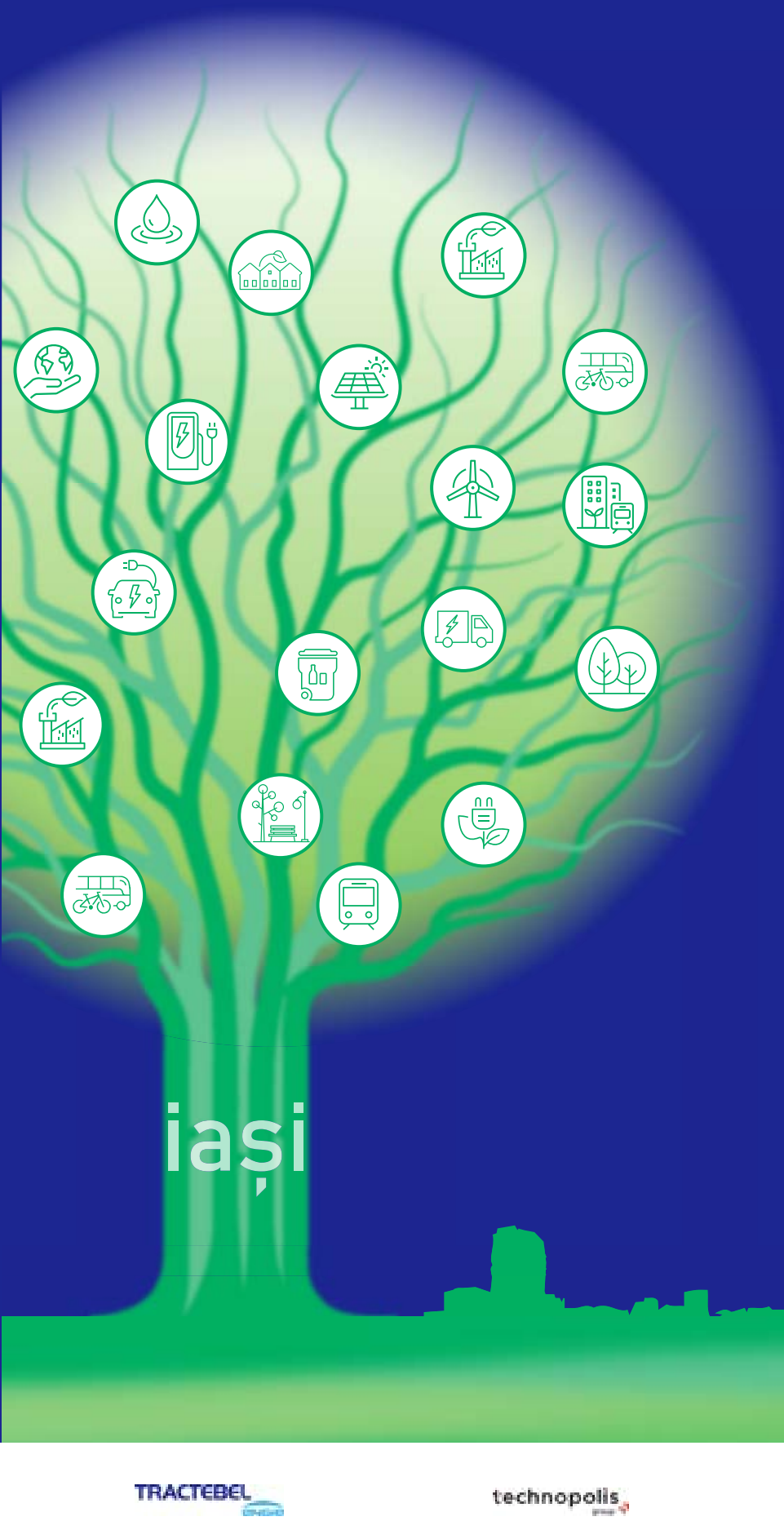
Green City Action Plan
City of Iași

October 2023



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European Bank
for Reconstruction and Development

Taiwan Business
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FOREWORD FROM THE MAYOR

We continue our mission to transform the City of Iași into a clean, efficient and environmentally friendly city!

After several field studies, analyses and discussions with interested parties (non-governmental organizations, public institutions, municipal companies, universities, the economic environment, etc.), the Green City Action Plan of the Municipality of Iași has been finalized. It is developed within the "Green Cities" Programme of the European Bank for Reconstruction and Development (EBRD), an initiative financed by Taiwan Business- EBRD Technical Cooperation Fund and to which our city joined in 2020.

The Green City Action Plan identifies and prioritizes the city's most important environmental challenges and recommends investment projects and administrative policy measures to address them.

The vision of the Green City of Iași is that of a city with clean air, open green spaces, which uses energy efficiently and is accessible to everyone . In terms of concrete measures, the analyses and consultations have identified and prioritized 44 actions in several urban infrastructure and service areas (transport, energy, green spaces, waste management, etc.), with measures to be implemented over the next five years.

Iași City Hall has already demonstrated its commitment to the "green" development of the city, both by preparing strategic documents and by implementing measures to reduce pollution and increase the quality of life, from increasing the efficiency of public services (heating, public lighting, sanitation) and the number and surfaces of green spaces to the energy efficiency of public buildings and the transformation of public transport into an intelligent, modern, ecological one.

We thank the EBRD partners for the entire collaboration, we thank Taiwan for their support, we thank the consultants for their dedicated work and, above all, we thank everyone who gets involved in making Iași a green, clean and healthy city!

Mihai Chirica
The mayor of Iași

PHOTO 1 IAȘI CITY MAYOR, MR MIHAI CHIRICA DURING STAKEHOLDER ENGAGEMENT EVENT, 23RD NOVEMBER 2022.
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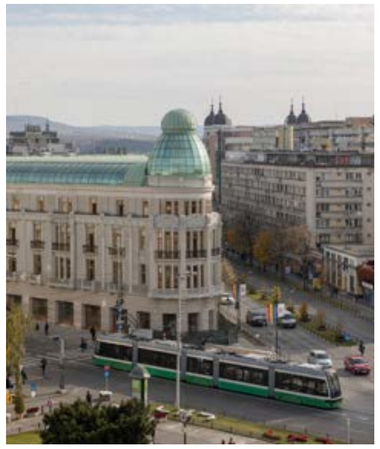

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ABBREVIATIONS

AFM	Administration of the Environment Fund
ATU	Urban Transition Association
BEMS	Building Energy Management Systems
CBRN	Chemical, Biological, Radiological and Nuclear
CET II	Holboca Power Plant
CHPP	Combined Heat and Power Plant
CO_2	Carbon Dioxide
CTP	Central Thermal Plant
DH	District Heating
DMA	District Metering Area
EBRD	European Bank for Reconstruction and Development
EPC	Energy Performance Certificate
ERDF	European Regional Development Fund
EU	European Union
EUR	Euro
FTE	Full Time Equivalent
GCAP	Green City Action Plan
GDP	Gross Domestic Product
GESI	Gender, Equality and Social Inclusion
GHG	Greenhouse Gas
HADGEM2-CC	Hadley Centre Global Environment Model version 2 for Climate Change
ICT	Information and Communication Technology
IT	Information Technology
LED	Light Emitting Diode
LGBTIQIA+	Lesbian, Gay, Bisexual, Transgender, Intersex, Queer (or Questioning), Asexual (or Allies), Plus
Mtoe	Million Tonnes of Oil Equivalent
MRF	Material Recovery Facility
NDC	Nationally Determined Contribution
NGO	Non-governmental Organisation
NMT	Non-motorized Transport
NOX	Nitrogen Oxide
NRRP	National Recovery and Resilience Plan
NRW	Non-revenue Water
nZEB	Nearly Zero-Emission Building
PM2.5	Particulate Matter < 2.5 microns
PM10	Particulate Matter < 10 microns
PMUD Iași	Sustainable Urban Mobility Plan for the Iași Growth Pole
POAV	Plan Actiune Oras Verde Iași ("Iași- Green City" Action Plan)
POIM	Large Infrastructure Operational Programme
POR	Regional Operational Program
RES	Renewable Energy Sources
RRM	Recovery and Resilience Mechanisms
SACET	Central Heating System
SECAP	Sustainable Energy and Climate Action Plan
SEP	Stakeholder Engagement Plan
SIDU	Urban Development Integrated Strategy
SO2	Sulphur Dioxide
STEM	Science, Technology, Engineering & Math
SUMP	Sustainable Urban Mobility Plan
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

The purpose of this Green City Action Plan (GCAP) for the City of Iași is to identify, prioritise and set out actions required to address the most pressing environmental challenges experienced by Iași's citizens. Through this process, the city will achieve its Green City Vision of a: **Clean air city with open, green spaces accessible to all and efficient use of energy**. Iași's GCAP was developed over 12 months with input from over 1,000 stakeholders coming from all walks of life in Iași – through both face-to-face and web-based engagements.

The Iași GCAP is underpinned by a foundation built on the four pillars of:

(i) an analysis of the policy, legislative, regulatory and institutional environment which guides environmental performance of the city;

(ii) a baseline assessment of the key performance indicators measuring the state of and pressure on, the environment of Iași and the completeness and effectiveness of accompanying response mechanisms;

(iii) the current vulnerability of the city and its inhabitants to natural and man-made hazards and risks and its resilience in the face of these hazards and risks; and

(iv) an assessment of both the maturity of the city in "SMART" applications and the inclusiveness of the city in promoting access for all to services, facilities and employment opportunities.

Based on the review of environmental indicators and a 360° analysis of the city's environmental performance, the **priority environmental challenges** identified for Iași are:

(i) poor air quality and associated greenhouse gas emissions – primarily derived from fossil-fuel based transport and energy supply;

(ii) limited availability of and poor access to, green and blue open spaces;

(iii) water quality issues and surface water pollution;

(iv) inadequate recycling of solid wate; and

(v) the cross-cutting issues of gender and social inclusion, including inequalities, vulnerabilities and disadvantages linked to gender, ethnicity, age, disability, sexual orientation or gender identity, religion, poverty and migrant/refugee status.

The Green City Vision of Iași sets out where the city would like to be in the medium-term (15 to 20 years) in terms of the key characteristics of the city and how it is experienced by residents and visitors. To achieve the Green City Vision while addressing the key environmental challenges requires the implementation of interventions (the Green City Actions) clustered around sector visions and strategic objectives designed to achieve the Green City Vision. These sector visions are:

Strategic objectives were developed to achieve these sector visions and a corresponding longlist of potential actions were identified which could contribute to realisation of the sector objectives. From among these, 44 actions were prioritised based on a set of evaluation criteria which included the level of government and local community support and ability to generate benefits over the next five years. These 44 priority integrated actions include 29 infrastructure and service improvement investments as well as 15 actions which support policy development, capacity building and advocacy, all of which are designed to help achieve the vision for a greener and more inclusive and resilient Iași. Each priority integrated action includes gender and economic inclusion components to empower women and marginalized groups, reduce disparities and ensure inequality is not perpetuated.

The total estimated cost for the GCAP priority actions is approximately EUR 580 million of which EUR 5 million supports policy actions and requiring significant financial support from both the city administration and sources of external financing. Potential sources of finance include grants from the EU and subsidies from the state budget including under the National Recovery and Resilience Plan. The GCAP Actions are developed for implementation over the next 5 years (Table ES1).

The current indebtedness level of Iași Municipality is 4.7%, significantly below the maximum ceiling of 30% set by legislation, indicating capacity to borrow up to a further EUR 300 million. However, based on the level of operating surplus recorded in 2021, Iași Municipality could only generate sufficient financial resources to allow loan repayment with a total value of EUR 75 million – approximately 15% of the total GCAP investment needs. It is proposed that the municipality use its debt contracting capacity to attract blended financing with a significant percentage of grants and subsidies, i.e. by applying for financing from: (i) EU funds under operational programmes covering the period 2021-2027; or (ii) the National Recovery and Resilience Plan (NRRP) for which the co-financing of the local authorities is 2%. The municipality has started to apply for such financing for different investment components.

Part of the proposed investments can be also financed by the local utility companies from their own revenues. For example, the water utility company (ApaVital Iași) has a very ambitious investment programme funded from its own-source revenues and debt financing over the next few years. Similarly, the district heating and local public transport companies could finance part of the investment in infrastructure either from attracted financing (grants, subsidies and loans) or from own sources.

The implementation of a multi-sectoral investment programme of approximately EUR 580 million in Iași will lead to an increase of direct **job creation** largely in the construction sector, but also in the management, operation and maintenance of the assets created. Several hundred jobs will be created throughout the five-year implementation period. The development of green infrastructure will make the economic and social environment more attractive for private investment which will lead to an increase in economic growth of the region with positive impact on indirect job creation and on the local budget financing (increase in own-source revenues from income tax, increase of direct local taxes and fees, etc.). The proposed GCAP actions have the potential to generate GHG emissions reductions estimated at about 347,000 tonnes of CO_2 equivalent per annum.

A summary of GCAP actions is presented below in Table ES1.

TABLE ES1: GCAP ACTIONS SUMMARY TABLE

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
TRANSPORT	TR1	Extension of the coverage for the public transport system and renewal of the fleet	Investment	16 trams with 22m length	36,000	5,896	32,830	NRRP	
				24 electric buses with 10m length, 24 slow charging stations and 7 fast charging stations	9,600	7,440	Included above	European funds	
				25 electric buses with 10m length, 8 slow charging stations and 25 fast charging stations	12,000	7,750	Included above	NRRP	
				Extension of Valea Lupului line	26,000	1,300		Unidentified source	
				Extension of Holboca line	37,000	1,850		Unidentified source	
				Capital repairs of the Socola overpass – including for non-motorised access	9,000	450		National budget	
				Extension and rehabilitation of the Cerna bridge – including for non-motor²ised lanes	6,000	300		National budget	
				E-ticketing system for public transport	3,000	50	15,400	City budget, EU funds	
				Sub-total	**138,600**	**25,036**	**48,230**		**200 - 300**
	TR2	Increase availability, safety and security of non-motorised trips	Investment	Shared vehicle space areas	15,000	N/A		City budget	
				BUS-BIKE intermodal transport system ND Velo City	2,500	N/A		City budget	
				Increase the use of cycling for trips towards and from the Metropolitan Area – bicycle lanes	10,000	N/A		NRRP	
				Modernisation of sidewalks and alleys in the Metropolitan Area	17,000	N/A		NRRP	
				Intelligent municipal system for monitoring the bike lane network	1,000	N/A		City budget	
				Pilot project – 15" Min City	2,000	N/A		City budget	
				Development of Car-Bike-Bus intermodal areas	200	N/A		City budget	
				Sub-total	**47,700**	**N/A**	**28,500**		**0**
	TR3	Extension and modernisation of public transport depots	Investment	The public transportation depots will undergo two significant interventions: expansion and modernisation of Iași's depots, including the Dacia depot, as well as the transfer of depots for trams, buses and trolleybuses from central locations to the site of the former Fortus industrial platforms	74,000	3,000	11,500	EBRD	50
	TR4	Implementation of restrictive parking regulations	Policy	The projects will include an extension of video-monitoring, sensors for parking, complex management of parking places and payments as well as corrections in case of misuse	1,000	N/A		City budget	10
				TOTAL FOR TRANSPORT AND MOBILITY	**261,300**	**28,036**	**88,230**		**260 - 360**

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Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
WATER AND WASTEWATER	WA1	Non-revenue water (NRW) reduction feasibility study / action plan	Policy	For hired services	600	N/A (only study)	N/A	IFI grant plus ApaVital contribution	0
				For equipment and works	600				
				Sub-total	1,200				
	WA2	Implement and improve pressure zoning and district metering areas (DMAs)	Investment	For hired services	250			IFI soft loan plus ApaVital contribution	0
				For equipment and works (result of feasibility study)	2,000				
				Sub-total	**2,250**	**600**	**2500**		
	WA3	Implement real loss reduction programme: for equipment & works	Investment	The project will implement the results of feasibility study	10,000	Incl in WA2	Incl in WA2	IFI soft loan plus ApaVital contribution	8
	WA4	Smart leak detection	Investment	Measure and predict water leaks by using artificial intelligence based on flow and pressure data and detect leaks based on satellite images	2,000	1,250	Incl in WA2	IFI grant and ApaVital budget	0
	WA5	Urban Drainage Master Plan	Policy	Drafting, tendering (parts of which shall be executed by third party), execution of an Urban Drainage Master Plan	1,500	N/A (only study)	700	IFI grant plus ApaVital contribution	1
	WA6	Feasibility Study for Re-use of treated effluent and sewage sludge from Dancu WWTP	Policy	Tendering, execution of a Feasibility Study that investigates the potential cost and benefits of re-use of treated effluent and sewage sludge from Dancu WWTP	300	N/A (only study)	100	IFI grant plus ApaVital contribution	0
	WA7	Extension of water supply system in Iași City Metropolitan Zone	Investment	IS-CL01 Zone North, Lot 1	8,700	N/A	N/A	Co-financed from the EU Cohesion Fund, state budget, local council budget and the Regional Operator Budget through the LIOP Sectoral Operational Program	20
				IS-CL01 Zone North, Lot 2	8,700	N/A	N/A		
				Sub-total	**17,400**				
	WA8	Extension of sewerage in Iași City Metropolitan Zone	Investment	IS-CL02 Zone South, Lot 1	15,900	N/A	N/A	Co-financed from the EU Cohesion Fund, state budget, local council budget and the Regional Operator Budget through the LIOP Sectoral Operational Programme (POIM)	10
				IS-CL02 Zone South, Lot 2	5,800	N/A	N/A		
				IS-CL02 Zone South, Lot 3	13,100	N/A	N/A		
				Sub-total	34,800				
				TOTAL FOR WATER AND WASTEWATER	**69,450**	**1,850**	**3,300**		**30 - 55**
SOLID WASTE	WS1	Capacity building and awareness raising on reuse and segregation of waste	Policy	The development of an effective education and information system based on EU experiences, framed to address citizens, businesses, companies, schools, social and youth organizations, etc	10	50	7,960	City budget, Salubris, recycling companies	10
	WS2	Green islands for segregated solid waste collection in the city (phase 1: 175 islands)	Investment	Provision of new public above-ground and underground digitized "green" islands for the selective collection of 5 fractions of solid waste throughout the city, financed through the National Resilience and Recovery Plan (PNRR/ 2022/C3/S/I.1.B)- Phase 1, 175 pieces	3,500	1,250	160	NRRP	10
	WS3	Additional civic amenity sites	Investment	Construction and equipment of three additional medium to small public waste collection sites (surface ca. 3,000 m^2), where citizens can drop their solid waste materials in appropriate containers on a voluntary basis	2,200	1,500	1,056	NRRP	10
	WS4	Waste management centre	Investment	Construction and equipment of a large public waste management centre (capacity 10,000 tonnes/year), including a material recovery facility (MRF) for source-separated dry recyclables and composting and construction/demolition waste processing facilities	4,800	4,000	11,730	NRRP	10
	WS5	Digitization of waste collection operators	Investment	Installation of systems for weighing the actual amount of waste collected per vehicle, provision of advanced computer programmes for planning and optimizing collection routes and fleet management	450	250	260	Salubris budget	10
	WS6	Waste-to-energy project at the landfill site	Investment	Capture and valorisation of landfill gasses for production of electricity (local consumption at landfill site)	800	1,000	19,000	European funds	10
				TOTAL FOR SOLID WASTE MANAGEMENT	**11,760**	**8,050**	**40,166**		**60**

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
ADAPTATION & RESILIENCE	AD1	Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures	Policy	At least one awareness campaign/year shall be organized by Iași City Hall	50	N/A	N/A	City budget	10 - 50
	AD2	Improve seismic resilience of buildings	Investment	First stage: assessing the status of buildings in Iași regarding the risk and resilience to earthquakes, as well as estimating the level of capital expenditures to improve the status	To be determined	4,500	N/A	To be determined	10
	AD3	Development of a Strategic Emergency Response Plan	Policy	An emergency response plan is a strategic document that lays out the series of steps the city should take during/ after a critical event, determined by nature or by man and minimise impact and damage	15	N/A	N/A	City budget, regional development fund, PPP or through an EU-funded project	1
				TOTAL FOR ADAPTATION AND RESILINCE	**65**	**4,500**	**N/A**		**21 - 61**
ENERGY	EN1	Fuel switch at Holboca Combined Heat and Power Plant (CHPP)	Investment	Planned coal-to-gas fuel switch at Holboca CHPP will bring a threefold decrease of CO_2 emissions	96,000	4,700	198,033	Modernisation fund	0
	EN2	Make decarbonization a key objective of the city's sustainable development/environmental strategy	Policy	Update the environmental policy of the City Hall with a distinct decarbonization objective for all activities performed by the city	20	N/A	N/A	city budget	0
	EN3	Increase awareness of population regarding energy efficiency	Policy	Promotion materials disseminated in local media and during public gatherings, like sport races/contests, quizzes, etc	250	N/A	N/A	city budget	0
	EN4	Refurbishment of the DH network	Investment	Continuation of DH network refurbishment	7,562	N/A	7,270	European Funds/ city budget	0
	EN5	Photovoltaic Park Tomesti – Iași ApaVital, 25 MW	Investment	Production of photovoltaic energy, with an installed capacity of 25 Mw, with an annual estimated production of energy of 30,000 Mwh	27,000	300	7,150	Own sources (partial)/ loan	5
				TOTAL FOR ENERGY	**130,832**	**5,000**	**212,453**		**5**
BUILDINGS	BU1	Improving the energy efficiency of private buildings	Investment	Energy audits and proposed specific actions shall be taken in order to have the best solutions for improving energy efficiency	5,200	N/A	235	NRRP	0
	BU2	Improving the energy efficiency of public buildings	Investment	Energy audits and proposed specific actions shall be taken in order to have the best solutions for improving energy efficiency. First targets include hospitals, schools, education centers	35,220	N/A	3,050	NRRP	0
	BU3	Programme for buildings energy profile, including smart meter installation	Investment	Improve/introduce monitoring the energy consumption of public buildings	80	N/A	N/A	city budget, private sources	10
	BU4	Building nZEB plus housing for young people at risk	Investment	Building nZEB plus housing for young people at risk	14,900	N/A	225	NRRP	0
	BU5	Annual competition for Energy efficient buildings	Investment	An annual competition to be organised to incentivise building owners to implement new and innovative measures for energy efficiency in their building(s)	50	N/A	N/A	city budget, private sources	1
	BU6	Users' education campaigns for optimizing and monitoring energy consumption in buildings	Investment	Develop campaigns to influence the behaviour of users which can reduce up to 30% the energy consumption in buildings	20	N/A	N/A	city budget, private sources	0
				TOTAL FOR BUILDINGS	**55,470**	**N/A**	**3,510**		**11**

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Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
LAND USE, GREEN SPACES, BIODIVERSITY AND NATURE BASED SOLUTIONS	LA1	Create a green corridors network connecting Centre – River Bahlui – Galata forest (35-50ha)	Investment	Create green corridors network connecting the City Centre, bank of the River Bahlui and Galata Forest, totalling up to 5-6 km (or more) of ecologically designed streets, promenades and green spaces	18,000	600	100	EU funds	12 - 20
	LA2	Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots (40-60ha)	Investment	A set of programmes that will focus on revitalisation, greening and beautification of small abandoned or degraded public spaces in Iași, including around apartments blocks, areas around water bodies such as CUG II lake shore, as well as planting vegetation in the parking lots	25,000	300	80 - 120	EU funds	12 - 25
	LA3	Rehabilitation and modernization of the leisure area CA Rosetti (1.79ha)	Investment	Beautification of the CA Rosetti recreation area, including the reconversion and re-functionalisation of 17,912 square meters (1.79ha) of unused land. EUR 3 mln already invested, final cost is expected to be higher (EUR 3.5-4 mln)	4,000	600	4	EU funds	2 - 3
	LA4	Communal gardens at schools (2-7ha)	Investment	Facilitate the development of community gardens on school grounds	2,000	100	4 - 14	EU or municipal funds	0
	LA5	Assessment of the city needs in extension of vegetation and development of city greening plan	Policy	The objective of the action is to assess the needs for extension of vegetation across the city	150	N/A	N/A	City budget	0
	LA6	Green Ambassadors of neighbourhoods – Citizens Cooperation Platform	Policy	The action will focus on initiation of the Citizens Cooperation Platform where Green Ambassadors of neighbourhoods selected by the residents will represent their interests in the decision and planning related to land use and green space development	N/A	50	N/A	City budget	1
				TOTAL FOR LANDUSE, GREEN SPACES, BIODIVERSITY AND NATURE-BASED SOLUTIONS	**49,150**	**1,650**	**188 - 238**		**27 - 49**
GOVERNANCE AND CAPACITY BUILDING	GV1	Setting-up communication framework with stakeholders	Policy	Maintaining communication with stakeholder group for consultation purposes	375	N/A	N/A	City budget, non-refundable European funds	0
	GV2	Development of GESI (Gender Equality and Social Inclusion) Action Plan	Policy	Develop a GESI Action Plan for inclusion in the city's GCAP policy document to promote equality, equity and social and economic inclusion throughout development, implementation and monitoring and evaluation of all GCAP actions	100	N/A	N/A	City budget, IFIs, non-refundable European funds	0
	GV3	Continuous professional development, capacity building of City Hall staff and HR policy for EBRD financed projects	Policy	Training City Hall staff for identifying new financing opportunities, developing project concepts, on-the job training for experienced employees while collaborating with external consultants and on-the-job trainings for young employees	250	N/A	N/A	City budget, IFIs, non-refundable European funds	0
	GV4	Establishment of working group to support GCAP implementation	Policy	Ensuring equal access to information for all citizens and stakeholders in real time, enabling possibility to take part to the policy-making process and to facilitate implementation of measures adopted	375	60	N/A	City budget	1 - 2
				TOTAL FOR GOVERNANCE AND CAPACITY BUILDING	**1,100**	**60**	**N/A**		**1 - 2**
SMART	SM1	Web application for updating KPIs	Investment	Web application for updating KPIs	250	350	N/A	City budget, European funds	2- 3
	SM2	Real time information on air quality	Investment	The first step in creating an integrated SMART platform for Iași City	150	100	N/A	City budget, European funds	0
				TOTAL FOR SMART CITY DEVELOPMENT	**400**	**450**	**N/A**		**2 - 3**
				GRAND TOTAL FOR GCAP	**579,527**	**49,596**	**347,847 - 347,897**		**417 - 606**

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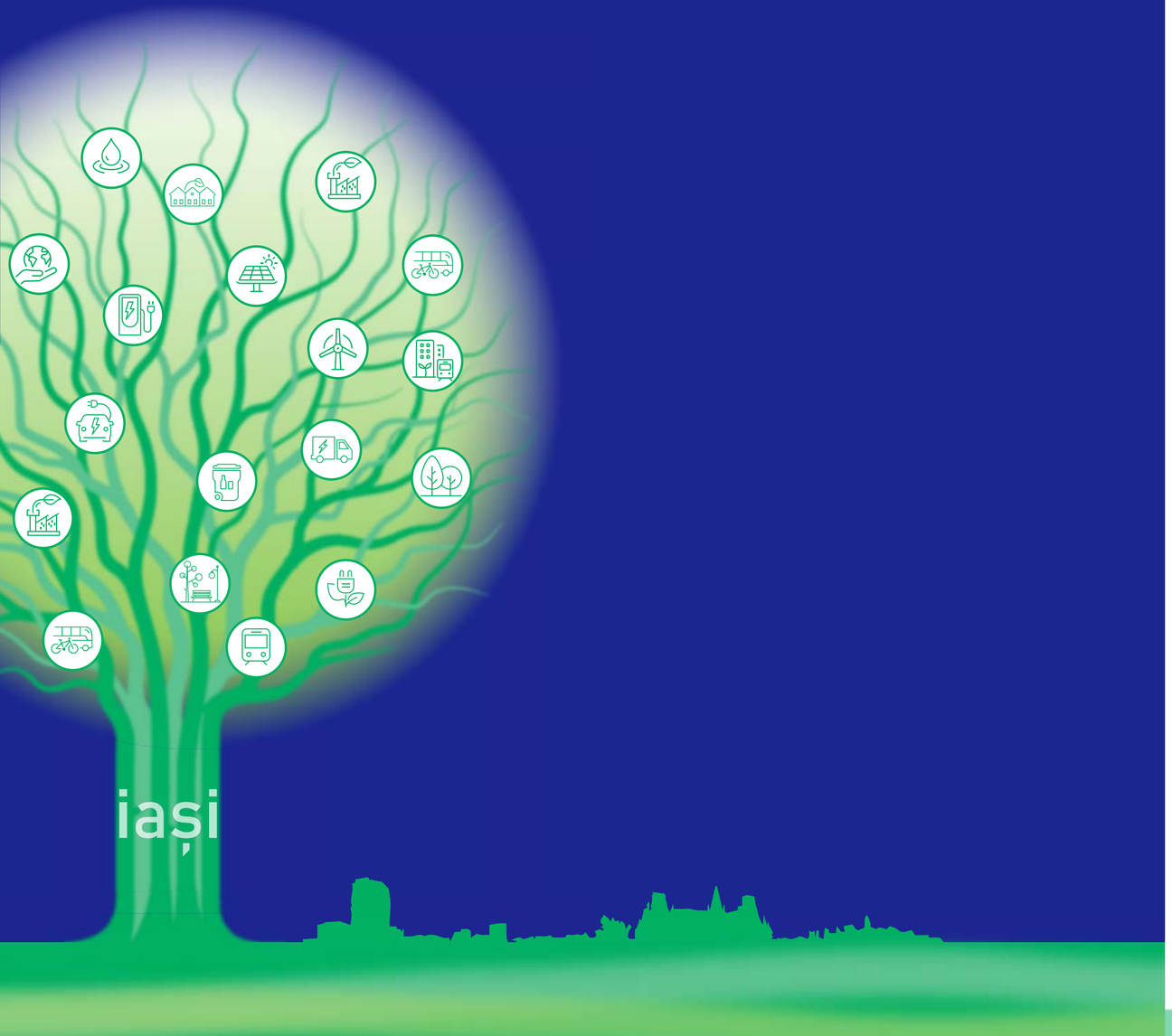
1. INTRODUCTION



1 INTRODUCTION

1.1. Ambition and purpose of Iași Green City Action Plan

1.1.1. Why a GCAP?

The City of Iași is committed to transitioning to a greener and more resilient, inclusive and more sustainable development path.

The aim of the Green City Action Plan (GCAP) for the City of Iași is to address the existing environmental and urban development challenges in a systematic way, while taking account of socio-economic concerns. This includes ensuring that issues of gender as well as social and economic inclusion are incorporated into the Plan.

The GCAP provides a roadmap to assist the city in transitioning onto a path of low-carbon, climate resilient development. The Plan sets out proposals and recommendations to help in optimising the city's future financial and personnel capacity. It also seeks to help address the key urban development challenges facing the city – not only delivering significant environmental benefits to enhance the resilience of the city and its people, but also delivering associated social and gender inclusion co-benefits.

1.1.2. GCAP process and methodology

Following agreement between the European Bank for Reconstruction and Development (EBRD) and Iași on a loan to finance the energy efficiency upgrading of 15 public buildings and the reconstruction of a bus and tram depot, the city requested EBRD support in the preparation of a Green City Action Plan under EBRD's Green Cities programme. Launched to facilitate a better and more sustainable future for cities and their residents, the programme recognises the need for participating cities to:

- Preserve the quality of their environmental assets and use natural resources sustainably
- Mitigate and adapt to the risks of climate change
- Ensure that environmental policies and developments contribute to the social and economic wellbeing of residents.[1]

Under the EBRD Green Cities programme and funded by the Taiwan Business EBRD Technical Cooperation Fund, Iași has received support for the preparation of its own GCAP. Support to the city in preparation of this Plan is being provided by a consortium led by Tractebel consultants of Belgium [2]. GCAPs are at the core of the EBRD Green Cities programme, helping cities to articulate their challenges for sustainable development and devise a politically and economically feasible plan of investments and policies to transition cities to greener development paradigms.

The preparation of the GCAP and associated approval process follows the GCAP methodology established by OECD and EBRD in 2016 and updated in 2020. The GCAP methodology sets out the process by which the city's environmental challenges are systematically assessed, prioritised and addressed through proposed policy reforms, capacity development and investments in sustainable infrastructure and services.

A suite of preparatory documentation was produced within the context of the development of a GCAP for Iași to identify and prioritize the challenges which must be addressed to ensure the transition of the city onto a greened development path. First, a Policy and Urban Framework Report for Iași was developed to provide a foundational baseline assessment of the policy, legislative and strategic framework which supports the development and implementation of a GCAP for Iași. Thereafter, the steps which followed under the GCAP preparation process included:

(i) assessment of the current state of resilience and vulnerability in Iași;

(ii) assessment of the maturity of Iași in terms of its transition to a "Smart" city;

(iii) preparation of a baseline assessment of the key performance indicators which measure the state of and pressure on, the environment of Iași and the maturity of accompanying response mechanisms; and

(iv) based on this analysis and stakeholder discussions, identification of baseline environmental conditions and the priority areas which the GCAP should seek to address.

These processes culminated in the establishment of a long-term environmental vision for Iași and associated strategic objectives which informed the GCAP development process and priority areas for future attention.

Iași's GCAP was developed over 12 months with input from over 1,000 stakeholders. It proposes 44 specific, integrated actions that include infrastructure investments, policy measures, capacity development and advocacy, all of which are designed to help achieve the vision for a greener and more inclusive and resilient Iași.

PHOTO 2 YOUNG RESIDENTS OF IAȘI CITY SOURCE: HTTPS://WWW.FACEBOOK.COM/PRIMARIAMUNICIPIULUIIASI/PHOTOS

PHOTO 3 ENVIRONMENTAL CHALLENGES IF IAȘI PRESENTED ON 360° CITY SCAN. SOURCE: CONSULTANT'S OWN COLLECTION

PHOTO 4 IAȘI CITY HALL SOURCE: HTTPS://WWW.FACEBOOK.COM/PRIMARIAMUNICIPIULUIIASI/PHOTOS

1 EBRD. 'EBRD Green Cities.' Available at: https://www.ebrdgreencities.com/about [Accessed 25 November 2022]

2 The consortium comprises: Tractebel consultants of Belgium and Romania, ICF, BDO, ICLEI and Technopolis

FIGURE 1 IAȘI'S GCAP PROCESS MAPPED AGAINST THE EBRD GREEN CITIES METHODOLOGY

1.1.3. GCAP ownership and stakeholder support

Full involvement of key city stakeholders throughout the process of GCAP preparation is critical in ensuring full ownership of the GCAP by the city and its citizens and consequently support in its implementation. This activity is essential for a project that addresses challenges at a city level and fulfils multiple roles by:

(i) consolidating GCAP ownership by the City Hall and wider stakeholder group;

(ii) successfully managing the GCAP's risks and impacts;

(iii) obtaining relevant input in development of the GCAP document;

(iv) continuously informing the progressive development of the GCAP and the actions it prioritises and supports.

Continued stakeholder engagement is vital in future stages of GCAP execution – review, approval and implementation.

The activity was carried out in accordance with the EBRD Stakeholder Engagement Guidance for GCAP projects. The stakeholder engagement process was conducted based on a Stakeholder Engagement Plan (SEP), a guideline document which outlines the engagement methodology, activities and communication protocols. The SEP also included the formation of a group of interested parties who were continuously informed and consulted throughout the development of the GCAP.

The list of stakeholders were mapped across eight categories of groups from the general public and from various sectors as follows: (i) non-government organisations (NGOs): (ii) academia; (iii) the business community; (iv) utility companies; (v) the banking sector; (vi) culture and mass media; (vii) public authorities; and (viii) the general public not covered by the above categories – specifically including the vulnerable and those poorly represented. A social inclusion approach was used in the mapping of the interested parties, by including representatives of women's associations, but also other vulnerable or difficult to reach groups such as ethnic minorities (Moldavian and Roma minorities), youth and elderly groups. The stakeholder list formed part of the SEP and was updated during the GCAP preparation as additional key stakeholders were revealed as part of the preparation process.

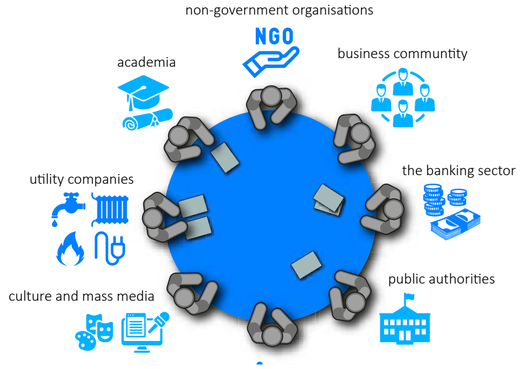


FIGURE 2 CATEGORIES OF STAKEHOLDERS ENGAGED IN IAȘI GCAP PROCESS

In addition to this list of stakeholders, both a Technical Working Group and a Steering Committee were established, these included representatives of the companies and city departments responsible for providing public utility services corresponding to the sectors of interest to the GCAP.

Information on GCAP development was provided constantly during all project phases, using channels and tools accessible to and preferred by all stakeholders. Project information materials were developed for dissemination and to facilitate the gathering of valuable input or feedback on GCAP development throughout the main phases of its development. The objectives of the communication tools adopted were to:

(i) ensure an inclusive engagement process was adopted, adapted as necessary to the City's needs and culture;

(ii) ensure a clear project purpose, format and timing of engagement activities was conveyed to stakeholders;

(iii) provide a regular flow of information;

(iv) ensure that the GCAP's approach, recommendations and outcomse were aligned to meet key stakeholder needs and expectations and to help gain their support for GCAP implementation.

The City Hall conducted the consultative process with stakeholders with the support of the Consultant in setting up the stakeholder engagement and implementation framework, developing communication tools and channels and facilitating consultative activities.

The City Hall is the owner of the GCAP and holder of stakeholder relationships throughout its development and implementation. Thus it appointed a Green CityOfficer as a focal point of communication between the Project Team and stakeholders. The Green City Officer is a representative of the City Hall, who is also in charge of environmental tasks. For facilitating communication and ensuring the ownership of the GCAP preparation process, a new email account dedicated to the project was created using the City Hall internet domain. The email account is gcap@primaria-lasi.ro and its availability is under discussion within the City Hall. The Project Officer was made responsible for the management and administration of the new GCAP-related email address.

1.2. Structure of the Green City Action Plan

The GCAP is set out below in two parts:

Part 1: Iași Today

Chapter 1: Introduction (this section) introduces the GCAP, describes the methodology, Iași's motivation for pursuing the GCAP and details of the stakeholder engagement involved in developing the GCAP.

Chapter 2: Baseline conditions in Iași, defines the baseline environmental, social and economic conditions based on analysis of consistent environmental indicators used across all cities that participate in the EBRD Green Cities programme.

PHOTO 5-8 STREETS OF IAȘI, JUNE 2022
SOURCE: CONSULTANT'S OWN COLLECTION

PHOTO 9 "GREENING" IAȘI,
SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=496470899174671&SET=PB.100064352962882.-2207520000.&TYPE=3

Part 2: Iași's Future

Chapter 3: The Vision and Strategic Objectives for a Green Iași.

Chapter 4: Actions for a Green Iași, details the GCAP actions that Iași will implement to address key sustainability challenges and realise green development opportunities.

Chapter 5: Implementing the GCAP and tracking our progress, describes protocols for implementation as well as the monitoring and evaluation programme.

FIGURE 3 IAȘI GREEN TRANSITION VISION

PHOTO 10-13 STAKEHOLDER ENGAGEMENT EVENT, 23RD NOVEMBER 2022. SOURCE: CONSULTANT'S OWN COLLECTION

1.3. GCAP stakeholder engagement overview

1.3.1. Stakeholders communication

Communication practices of Iași City Hall with stakeholders and citizens includes both digital and off-line channels. With regard to on-line communication, the City Hall uses its own website for information dissemination. In parallel, a significant engagement is developed through social media, mainly addressed to young citizens through the City Hall Facebook page which has over 65,000 followers. In addition, the City Hall publishes a weekly newspaper, the Curierul de Iași, 25,000 copies of which are distributed for free and mainly addresses the more elderly population.

For ensuring stakeholder engagement throughout GCAP development, the City Hall used different channels (printed and digital media) and instruments such as announcements and articles in the local publication, Curierul de Iași and through the City Hall Facebook page [3]. In addition, a private Facebook group was created [4]: Iași Green City, which has gathered over 1,000 members within 4 months of its creation and is still growing. The information disseminated within the Iași Green City Facebook group included:

(i) the Iași GCAP project presentations;

(ii) environmental challenges and priorities;

(iii) GCAP visions;

(iv) the GCAP workplan;

(v) summaries of the stakeholder engagement events;

(vi) the GCAP development progress;

(vii) advertisement of upcoming project-related events.

The GCAP donor for Iași – the Taiwan Business EBRD Technical Cooperation Fund – was visible and prominent on all materials disseminated for the events in print or digital format. Gender disaggregated data regarding participation in the stakeholders meeting were collected.

3 https://www.facebook.com/PrimariaMunicipiuluiIasi
4 https://www.facebook.com/groups/2046634515521578/?ref=share

1.3.2. Stakeholder events

Following the workplan, during the year of GCAP preparation, four stakeholder engagements were organized at Iași City Hall. The purpose and brief description of the events are presented below in Table 1.

The GCAP-specific Facebook page turned out to be the most active and effective digital channel for stakeholder engagement, both for information and survey dissemination and in obtaining stakeholder feedback.

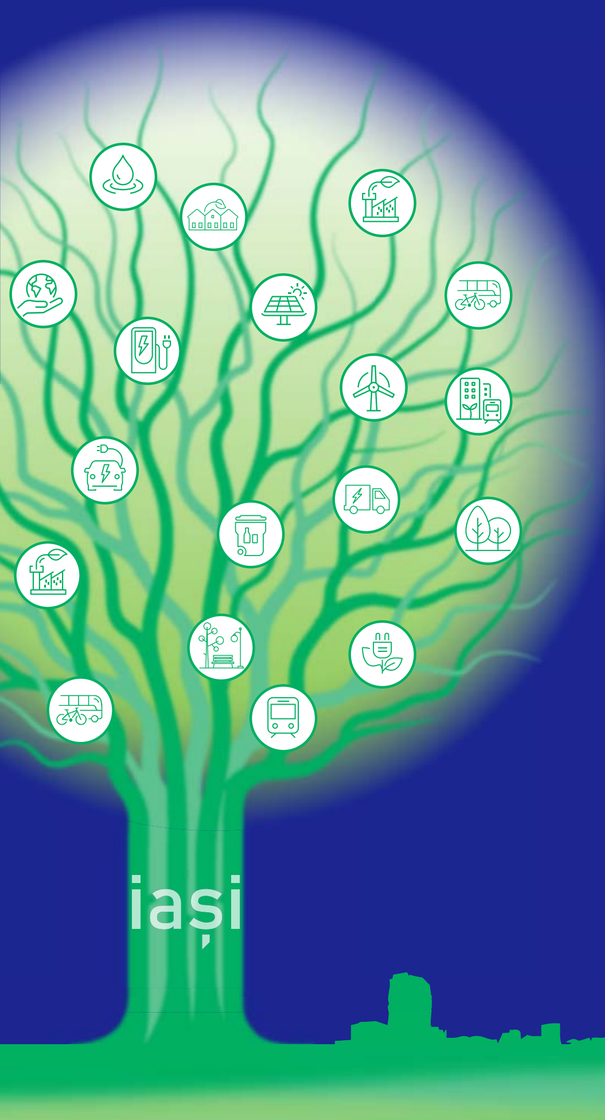
The in-person meetings held during the stakeholder engagement events and in particular the break-out sessions involving thematic group discussions, had the greatest dynamic and brought to light significant inputs from a wide range of stakeholders, informing the prioritization of GCAP actions.

PHOTO 14-15 STAKEHOLDER ENGAGEMENT EVENT, 23RD NOVEMBER 2022. SOURCE: CONSULTANT'S OWN COLLECTION

TABLE 1 STAKEHOLDER ENGAGEMENT EVENTS

Date	Brief	No of participants	% Gender split	
			Female	Male
15 December 2021	Launch event and First stakeholder meeting Introduction of project participants and GCAP approach.	59	59	41
23 June 2022	The 2nd and 3rd Stakeholder engagement event Combined sessions focused on presentation of Iași environmental challenges, followed by discussion on the green city vision and priorities.	50	56	44
	1st round of surveys, on 7-28 June 2022 Digital survey dedicated to recognition of environmental challenges	540	51.3	54.1
23 November 2022	The 4th stakeholder engagement event. Combined sessions focused on presentation of Iași Strategic Objectives and shortlist of actions, followed by discussion on the green city actions and priorities.	72	50	50
	2nd round of surveys, 8 November – 5 December 2022 Digital survey dedicated to prioritize the shortlist of actions.	152	42.9	57.1

2. BASELINE CONDITIONS IN IAȘI



2 BASELINE CONDITIONS IN IAȘI

A popular university city in Romania, Iași is seen as a vibrant and rapidly growing city. This brings significant opportunities for economic development and to boost the quality of life of citizens but is coupled with risks and challenges both for the wellbeing of residents and the region's natural environment. This section of the GCAP summarises the **physical, social and economic context for Iași**. It also explores the **key challenges facing environmental quality and natural resource availability**. It is based on available data, interviews and validation with stakeholders. This is a snapshot of more detailed analysis undertaken in the Policy and Urban Framework Report and Technical Assessment, which helped to inform the identification of the Green City objectives and actions described in Sections 3 and 4 below. The full suite of environmental indicator data is included in Annex 2.

Iași at a Glance

- **2nd most populous city in Romania: 2022 resident population est. 320,000 (Metropolitan area est. 500,000)**
- **Iași developed at the crossroads of trade routes that passed through Moldavia from Poland, the Habsburg Monarchy, Tsarist Russia and Constantinople; it is a focal point for development as it lies on the EU's Pan-European Corridor IX that connects Northern to Southern Europe**
- **Important centre for tertiary education: Seven universities accommodating over 50,000 students annually**
- **There are 574 heritage monuments in the city, of which 40 are churches and 10 are monasteries**

PHOTOS 16-22 CITY OF IAȘI, JUNE, NOVEMBER 2022
SOURCE: CONSULTANT'S OWN COLLECTION

2.1. City profile

2.1.1. Key characteristics of the city

Following the collapse of the socialist regime, the city shifted from a highly industrialized economy [5] to an academic and predominantly service-based economy . Since 2000, development of the service sector has accelerated, as the number of IT and construction companies has increased five-fold with several multinational companies from the ICT field opening branches in the city. Today, Iași has a diverse economy focused on education, health care, banking, research, culture and tourism.

The gross domestic product (GDP) of Iași County represents approximately 3% of the GDP at national level and 32% of that of the Northeast region. GDP per capita grew by 41% over the period 2017 to 2021 reaching EUR 9,762 per capita in Iași county (about EUR 14,100 per capita in the city) compared to the national average figure of EUR 11,904 per capita. The strength of the local economy is also reflected in the decreasing rates of unemployment: estimated at 2.8% for 2022, compared to 2.9% at the end of 2021 and 3.15% at the end of 2020 [6]. The international airport is under expansion through a EUR 80 million investment project using EU financing and increasing capacity to 3.5 million passengers/ year. Two major industrial parks are located within the Iași Municipality metropolitan area, with a further one planned. Together with the service sector, the enterprises in these industrial estates drive local economic growth.

Due to this rapid economic growth and diversification, Iași is faced with the specific effects common to many cities with economies based largely on tourism and service industries, namely the rapid growth in numbers of private cars and consequent increase in heavy traffic, fuel consumption and raising levels of greenhouse gas (GHG) emissions. During the last decade, higher temperature averages were recorded in Iași, especially during summer heat waves. An average increase of 3.1°C by 2050 (0.06°C/year) is forecasted based on the Hadley Centre Global Environment Model version 2 Climate Change (HADGEM2-CC) model.

Iași has specific geological and environmental features that make it susceptible to various hazards. The city is surrounded by seven hills and is dissected in half by the River Bahlui. The main railway line also roughly follows the length of the river, crossing it just west of the city centre and National Highways 26 and 28 both pass through the city. The airport is located at the Northeastern periphery and the city is surrounded by industrial and agricultural land-uses. In terms of exposure to climate-related hazards, Iași is exposed to moderate flood hazard (impacting <5% of population), a medium landslide risk (not impacting on the city), a medium-to-low-risk of forest fire and a moderate seismic risk. Water bodies are moderately polluted, with the sources of water pollution of an anthropic origin and not directly related to climate change.

2.1.2. City governance structure and characteristics and municipal finance

CITY AUTHORITY

The Iași City Government is an autonomous administrative and financial local authority. The city has rights to settle and manage public affairs according to the law on local public administration number 215/2001, on behalf of and in the interests of, the local communities it represents. As an administrative and territorial unit, Iași City is run by the Local Council (as deliberative authority) and the Mayor (executive authority), supported by two Vice-Mayors and a General Secretary, in turn supported by subordinated functional directorates.

The activity of the City Hall is managed through these subordinated directorates. The municipality manages a diverse range of infrastructure and environmental services through its specialized Departments (e.g. Technical and Development General Department, Architecture and Urbanism General Department, etc.) and coordinates the local work on environment, infrastructure, utilities and service provision. The most important local public utility services within the environment and infrastructure sectors are overseen and managed by various utility departments and enterprises (both public and private). To keep pace with economic growth, the local authorities are continuously working on the development and improvement of infrastructure and service provision to create the most suitable local context to support local economic development.

Iași has demonstrated a commitment to transparent, open and accountable government rooted in participation and community consultation. This is evident in initiatives such as the city's Local Action Plan under the Open Government Partnership (OGP), where it committed to develop a transparent and consultative city administration, as well as a mechanism for participatory solutions to public problems. However, distrust in government and barriers for participation have been identified as concerns facing the general population in Iași. Local data is unavailable on whether women, the poor, certain age groups, people with disabilities or specific minority groups are particularly impacted by these challenges. National data suggests that women, the LGBTQIA+ community and Roma are likely to be excluded from participation in local governance. Additionally, Iași does not appear to collect data on municipal employees disaggregated by sex.

Following Iași City's formal declaration of its commitment to develop a GCAP and become an EBRD Green City, the Iași City Mayor gave municipal staff the official go-ahead to develop the Plan. The Mayor also assigned the Green City Officer (GCO) to serve as the key focal point of contact for the GCAP within the city, reporting directly to the Mayor as the Political Champion for the GCAP.

MUNICIPAL FINANCE

The financial performance of Iași Municipality is summarized in the table below.

Table 2 FINANCIAL PERFORMANCE OF Iași MUNICIPALITY

Budgetary Execution Amounts in thousands RON	2018	2019	2020	2021
Recurring Revenues, out of which:	**441,170**	**541,914**	**639,317**	**817,482**
Own Recurring Revenues	342,542	453,416	536,135	615,199
Transfers from state or other central budgets	98,629	88,498	103,182	202,283
Operating Expenditures	**414,219**	**489,476**	**554,632**	**799,055**
Recurring Surplus (Deficit)	**26,951**	**52,438**	**84,685**	**18,427**
Other Operating Revenues	26,841	31,294	28,623	34,868
Operating Surplus (Deficit)	**53,792**	**83,732**	**113,308**	**53,294**
Current Revenues	2,184	2,337	2,441	51,216
Current Expenditures	39,375	42,052	35,838	33,963
Current Surplus (Deficit)	**16,601**	**44,017**	**79,912**	**70,548**
Other Sources for Financing Investments	53,731	69,018	188,621	189,643
Funds Available for Investments	**70,331**	**113,035**	**268,532**	**260,191**
Capital Expenditures	114,923	157,773	268,385	278,767
Other extraordinary revenues	18,486	17,838	17,419	17,513
Other extraordinary expenditures/ Settlements	(755)	(2,393)	(4,718)	(2,361)
Surplus (deficit)	**(25,350)**	**(24,506)**	**22,284**	**1,298**

The execution of Iași Municipality budget recorded overall surpluses in the last two years, these being accumulated as a revolving fund to finance deficits and capital expenditures of the succeeding years. As is normal for a public institution using a treasury accounting system, the expenditures follow closely the trend of the revenues. According to existing legislation the budget of a public institution should be balanced when designed. The preliminary figures for 2022 indicate a surplus.

The total city revenues are on an increasing trend following the end of the COVID19 situation from 2020 and as a result of the post-COVID economic recovery. The main own revenue category is represented by the city share from personal income tax which has seen an increasing evolution mainly as a result of the economic improvement and consequent upward adjustment of salaries. Iași Municipality also recorded an increase in the earmarked subsidies received via transfers from the state budget as a result of the transfer of additional activities to local authorities in Romania.

The own revenues of the municipality are expected to continue to increase in the next few years as a result of the continued economic growth and salary increases with a direct impact on share from personal income tax. The direct local taxes and fees (tax on land and tax on buildings) are also expected to increase significantly in the forthcoming years mainly because of applying the level of taxes to the market value of the properties and not to the historical value adjusted for inflation, as it has been in the past years. Both these elements should increase the capacity of the municipality to finance more investments from own source revenues and/or to contract additional debt financing for investments in infrastructure and services.

2.1.3. Institutional and policy framework

There are many policies and strategies at the city and county levels which are intended to guide and support the development of Iași (see Table 3 below). Many of these are aligned with the objectives of the GCAP; thus the extent to which these policies are currently guiding the transition towards green development varies. The main areas of improvement that are highlighted in local strategies and action plans are those that have the greatest impact on Iași's livability, including housing, ensuring employment for a major part of the population, creating a social care system which ensures that vulnerable social categories are protected, etc. These strategies and action plans have to some extent been supported by open and collaborative governance: communication and consultations with citizens, in a transparent manner, developed through virtual platforms and public debates.

TABLE 3 SELECT LIST OF POLICIES, STRATEGIES AND PLANS WHICH GUIDE THE DEVELOPMENT OF IAȘI

Strategy / Plan	Timeframe	Description	Related GCAP areas						
			Air quality	Green spaces	Water	Solid Waste	Buildings	Energy	Transport
Integrated Urban Development Strategy of Iași Municipality	2015-2030	Official master city document which sets out the strategic vision and objectives for urban development of the city			●		●		●
General Urbanistic Plan of Iași Municipality	2018	guiding spatial planning of the municipality to promote positive growth trends and possibilities and reduce development risks	●	●					●
Strategy for economic and social sustainable development of the Municipality of Iași – Horizon 2020	2020	Strategy to create a flagship image for the city: Iași- a city of inspiration	●						●
InnovaSUMP	2016-2030	Innovations in Sustainable Urban Mobility Plans for low-carbon urban transport	●					●	●
Sustainable Energy and Climate Action Plan	2030	How the City of Iași will meet its commitment to reduce CO_2 emissions by at least 40% by year 2030	●				●	●	●
Energy Efficiency Improvement Programme	2016	Proposed actions to increase energy efficiency	●				●	●	
Rehabilitation of the district heating system in Iași Municipality	2017-2037	Guiding thermal rehabilitation of buildings and energy use of waste	●			●	●	●	
Waste Masterplan	2008-2038	Long-term investment plan on Integrated Waste Management in Iași County	●			●			
Local Environment Action Plan	2019-2023	Action plan for Air quality, Water, Transport, Waste, Education, Soil / Subsoil, Biodiversity, Health, Urbanization and Natural / anthropogenic risks	●		●	●			●

Through the strategies and action plans that Iași has implemented and will further implement, the city will ensure compliance with both national and European goals for

5 Iași City Hall – official website: Primăria Municipiului Iași | Site-ul Primăriei Municipiului Iași (primaria-iasi.ro)
6 National Commission for Strategy and Forecasting: Monthly Data for Web - Date lunare ptr web (mmuncii.ro)

the reduction of GHG emissions and other pollution factors as well as improving energy efficiency, enhancing economic growth and ensuring equal rights for all social categories. For example, Romania is aligned with the EU's Nationally Determined Contribution (NDC) targets and, as a member of the Covenant of Mayors since 2011, Iași has through its 2020 Sustainable Energy and Climate Action Plan (SECAP) adopted a self-imposed target of at least 40% CO_2 reduction against a 2012 baseline. Iași has taken on the responsibility for complying with the European and national legal strategies on climate change, thus tackling problems related to environmental issues in the context of ensuring a greener and safer future for generations to come.

In assessing Iași's institutional and policy framework, some areas do require attention and support. For example, more investments are needed in certain domains related to smart city and digital initiatives where a high impact can be expected, e.g. energy savings in buildings (particularly private residences), the acceleration of smart meters and enhancing digital infrastructure to reduce non-revenue water. There is also a need for a gender and inclusion strategy and action plan at city level; more supportive programmes for poor and vulnerable populations and people with disabilities are needed to bring them into the development process and ensure anti-discrimination measures are embedded in local planning and development.

2.1.4. Socio-economic context

DEMOGRAPHICS

As of 2014, the municipality's population was generally equally distributed between men and women [7] and as of 2017, Iași County's population was 49.7% male and 50.3% female [8]. The largest age groups in Iași Municipality are the young mature population (25-39 years) and those nearing retirement age (55-64 years). This bubble near retirement is projected to result in a 3% future labour shortage due to the relative lack of a young population to refill the labour market. At the Iași Metropolitan Area level, this labour shortage is projected to be just under 50% by 2030. [9]

The ethnic makeup of Iași Metropolitan Area is 90% Romanian and 1% other groups. According to the 2011 Population and Housing Census, the remaining 9% declined to provide information on ethnicity. Among the 1% (4,378 people) who identified as of another group, the vast majority (79%) identified as Roma [10]. Based on data available, Romania's Roma population faces a severe lack of economic opportunities. Additionally, Romania's Roma population has a much larger presence in the informal labour market than in the formal labour market; much of this economic exclusion can be attributed to inadequate education. The educational and economic disparities between Roma and non-Roma populations extend down to the level of Iași Metropolitan Area. Within the four Iași urban areas identified as disadvantaged, Roma residents earn lower incomes, have lower employment rates, have more difficulty finding jobs and have lower levels of schooling than the non-Roma residents [11]. Iași Metropolitan Area's religious makeup is majority (86%) Orthodox Christian, while 9% declined to declare a religion. Of the remaining 5%, the largest proportion is Roman Catholic.

VULNERABLE GROUPS

Vulnerable groups can be categorised by age, poverty level, minority, disability, gender and refugee status. In Iași and Romania as a whole, Roma, women, people with disabilities and the LGBTQIA+ community face particular economic, social and political barriers. Based on national data, the Roma population faces a severe lack of economic opportunities including lack of education and formal employment as well as ethnic discrimination. Limited data are available on these factors at the local level. Women in Romania also face non-legal barriers to economic participation, such as time and mobility constraints due to family obligations, resulting in lower employment rates for Iași's women as compared to men. This especially impacts women who are members of other disadvantaged communities.

The situation for people with disabilities requires particular attention as this population can too easily be left behind in urbanizing contexts without sufficient consultation in areas like transport, employment support and disaster risk management. No disability disaggregated data for Iași municipality are available, statistics regarding social benefits paid to disabled groups. This provides the minimum number of people living with disabilities in Iași as it's likely that not all disabled groups are receiving benefits. To this end, Iași County paid a total of RON 99,644,000 in benefits for people with disabilities in 2017 [12].

Due to the cultural and religious context, members of the LGBTQIA+ community in Romania often choose not to disclose their sexual identity in their places of work and do not report harassment incidents when they occur. This makes it difficult to quantify the extent of discrimination and other barriers to economic activity faced by LGBTQIA+ people [13]. Data regarding LGBTQIA+ populations in Iași also do not appear to be collected, as is the case for other types of gender-disaggregated data on any of the sectors c-+overed by the Technical Assessment.

LOCAL ECONOMY

The companies recorded in Iași Municipality have an estimated annual turnover of EUR 4.2 billion representing approximately 66% of the annual turnover recorded at the level of Iași County. Around Iași Municipality, there are several industrial business parks already functional and under development leading the economic growth together with the growth in the services sector. An economic growth rate of above 5% is forecast for Iași County over the next three years which is above the national average and indicates accelerated economic development transforming Iași even further as an important economic region of Romania.

The local authorities are continuously working on the development and improvement of local economic and social infrastructure and services to create a most suitable local context for inward investment and economic development. However, to retain this accelerated economic growth in Iași, the Municipality and its metropolitan hinterland will require continued support to the development and expansion of sustainable municipal services and creation of an attractive and green economic business environment.

EMPLOYMENT AND POVERTY

The unemployment rate in Iași County was 3.4% in 2021 and remained lower than the national average for the entire 2017-2021 period. An unemployment rate below the national average has a positive impact on the average household income at county level, which will likely increase faster than the national average. This will also have a positive impact on the population's ability to pay for public services and generating higher income for the local authority from the local share of personal income tax.

The lack off disaggregated data on employment and poverty for Iași municipality makes it difficult to determine the specific employment and labour participation rate for women and marginalised and vulnerable groups (such as the LGTBQIA+ community). This is an important area to be considered in the context of risk and vulnerability baseline mapping and in ensuring that the actions included in the GCAP address issues of unequal access for marginalised and vulnerable communities to infrastructure, services and utilities. The first step is to ensure that disaggregated data for these communities are collected and used to inform decision-making.

Little data are available on employment of vulnerable groups in Iași's infrastructure and green city sectors. Where data are available, it is generally limited to the overall gender distribution in the sector, without disaggregation by type of position or seniority level. Employment data for these sectors disaggregated by other vulnerabilities are not available.

7 GEA Strategy & Consulting. Integrated Urban Development Strategy (SIDU), 2015-2030: Iași Metropolitan Area. (Iași: City of Iași, 2015).
8 Iași County Statistics Directorate. Statistical Directory of Iași County. (Iași: Romanian National Institute of Statistics, 2018).
9 GEA Strategy & Consulting. Integrated Urban Development Strategy (SIDU), 2015-2030: Iași Metropolitan Area. (Iași: City of Iași, 2015).
10 GEA Strategy & Consulting. Integrated Urban Development Strategy (SIDU), 2015-2030: Iași Metropolitan Area. (Iași: City of Iași, 2015).
11 GEA Strategy & Consulting. Integrated Urban Development Strategy, 2015-2030: Iași Metropolitan Area. (Iași: City of Iași, 2015).
12 Iași County Statistics Directorate. Statistical Directory of Iași County. (Iași: Romanian National Institute of Statistics, 2018).
13 COWI. The Social Situation Concerning Homophobia and Discrimination on Grounds of Sexual Orientation in Romania. (Danish Institute for Human Rights, 2009). https://fra.europa.eu/sites/default/files/fra_uploads/389-FRA-hdgso-part2-NR_RO.pdf.

2.1.5. City resilience: risks and vulnerabilities

At the root of vulnerability within Iași's physical infrastructure and systems are a number of factors including limitations in system or component design or location, variability in natural conditions (precipitation, temperature, etc.) as well as poor adaptive capacity. Threats that impact on several systems include:

- Limitations in the systems to handle increased demand for energy
- Location of systems in areas exposed to hazards (e.g. floods)
- System design and build-quality to withstand hazards
- Lack of control on pollutants originating outside the city boundary

Iași's physical vulnerabilities intersect with a number of social and economic factors that disproportionately impact certain groups above others. The city's older buildings for instance, are particularly vulnerable to seismic activity due to their poor structural quality and stability. These buildings are often inhabited by vulnerable groups as they are relatively affordable. These groups also have lowered adaptive capacities because of status and financial or mobility limitations. Elderly populations are also vulnerable to extreme weather because of these adaptive capacity limitations as well as social isolation and pre-existing health conditions. Other factors from which socio-economic vulnerabilities arise are:

- Location in marginalised neighbourhoods, hazard prone areas and poor-quality buildings;
- Overcrowding and lack of tenure;
- Behaviours shaped by financial or material constraints such as poor diet, low physical activity and poverty.

People living with disabilities and chronic illnesses are vulnerable during extreme weather events, earthquakes and flooding because of their limited mobility and reliance on carers or medical equipment. Infants and young children are similarly vulnerable during floods and heat waves due to susceptibility to water-borne illness, drowning, reduced ability to regulate body temperature and disrupted access to education. Expectations that women take on caregiving roles reduces their mobility during disaster events and their ability to take on paid labour. They are therefore more physically vulnerable during the events and less able to financially recover.

Iași's populations living in the northern Urban Transition Associations (ATUs) are largely employed by the agricultural sector, making them financially vulnerable to the impacts of drought on agricultural production. Similarly, the livelihoods of groups employed by the hospitality, manufacturing and service sectors are vulnerable to health emergencies (such as COVID19) which trigger lockdown measures.

Physical and socio-economic vulnerabilities within Iași and various types of hazards to which the city/ city region is exposed leads to a number of risks of loss and damage. The extent of hazard exposure, proportion of inhabitants that are potentially exposed and the likelihood or frequency of hazard occurrence play a role in determining which risks may be considered a priority. Amongst the highest risks are those that: (i) impact on multiple sectors and populations; (ii) lead to severe drawdown on natural resources; and (iii) can cascade into wider losses and consequent damage to the economy and society. These include:

- Extreme temperatures;
- Seismic risk;
- Extremes of water (floods or droughts); and
- Air and land pollution.

Figure 2 below summarises hazards that are relevant to the City of Iași.

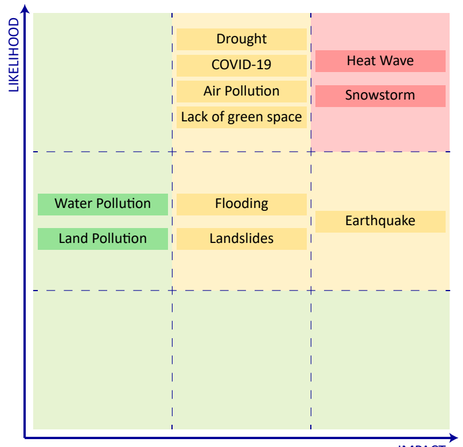


FIGURE 4 OVERVIEW OF HAZARDS RELEVANT TO IAȘI CITY

PHOTOS 23-24 SNOWFALL IN THE CITY OF IAȘI, JANUARY 2023
SOURCE:
HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=561019772719783&SET=PB.100064352962882.-2207520000.&TYPE=3
HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=561019936053100&SET=PB.100064352962882.-2207520000.&TYPE=3

IMPACT OF THE WAR ON UKRAINE

Romania has opened its borders to Ukrainian refugees, including those who travel through the Republic of Moldova [14]. As can be expected from its proximity to Romania's border with Moldova, a large influx of refugees and asylum seekers have entered Iași. Nearly all refugees leaving Ukraine are women and children [15], which will place strain on the education systems in host communities [16]. According to a needs assessment conducted by the Ukraine Crisis Response MEAL team (to better understand the immediate needs of displaced persons from Ukraine in Iași) [17], 59% of the respondents only plan to stay in Romania for a few days (less than 1 week) and 43% are planning to stay with family or friends in other countries. On 5 March 2022, Iași City Hall was operating 21 locations capable of accommodating a total of 2,710 people [18]. Locations such as these can put strain on healthcare systems as diseases spread rapidly [19]. Currently (March 2023), the demand for organised refugees' accommodation is reduced. Environmental impacts, such as solid waste build-up, are also common [20]. Despite these risks, the Romanian public's response to the influx of Ukrainians entering their country has thus far been one of overwhelming support [21] [22]. / The city will need to help meet the priority needs of refugees and asylum seekers including [23]:

- finding affordable shelter, transportation, information about available services and mobile phone credit/data in the short-term;
- finding work, affordable shelter, access to education and medical care in the long-term.

PHOTO 25 – UKRAINIAN REFUGEES
SOURCE: HTTPS://WWW.GOOGLE.COM/URL?SA=I&URL=HTTPS%3A%2F%2FTHECONVERSATION.COM%2FTHINKING-OF-WELCOMING-A-UKRAINIAN-REFUGEE-INTO-YOUR-HOME-OUR-RESEARCH-CAN-HELP-YOU-BE-A-GOOD-HOST-179212&PSIG=AOVVAW1L--KFODFHLCG-JB-DM7BY&-UST=1676672526593000&SOURCE=IMAGES&CD=VFE&VED=0CBAQJRXQGAOTCPDI_ISKM_0CFQAAAADAAAAABDDAQ

14 Marica, Irina. "Romania Welcomes Ukrainian Refugees: Short Guide to Entry Rules, Asylum Regulations & What to Expect at the Border." Romania Insider. (28 Feb 2022). https://www.romania-insider.com/ukrainians-romania-entry-rules-2022

15 Frydenlund, Erika and Padiolla, Jose J. "The Ukrainian Refugee Crisis Could Last Years – but Host Communities Might Not Be Prepared." The Conversation. (9 March 2022). https://theconversation.com/the-ukrainian-refugee-crisis-could-last-years-but-host-communities-might-not-be-prepared-178482.

16 Schneiderheinze, Claas and Lücke, Matthias. "Socio-Economic Impacts of Refugees on Host Communities in Developing Countries." PEGNet Policy Studies, number 03/2020 (2020). https://www.econstor.eu/bitstream/10419/222421/1/PEGNet-Policy-Studies-03-2020.pdf.

17 https://reliefweb.int/report/romania/rapid-needs-assessment-Iași-romania-march-21-28-2022

18 Primăria Municipiului Iași. Facebook, 05 March, 2022. https://www.facebook.com/PrimariaMunicipiuluiIași/posts/329326479222448.

19 Schneiderheinze, Claas and Lücke, Matthias. "Socio-Economic Impacts of Refugees on Host Communities in Developing Countries." PEGNet Policy Studies, number 03/2020 (2020). https://www.econstor.eu/bitstream/10419/222421/1/PEGNet-Policy-Studies-03-2020.pdf.

20 Frydenlund, Erika and Padiolla, Jose J. "The Ukrainian Refugee Crisis Could Last Years – but Host Communities Might Not Be Prepared." The Conversation. (9 March 2022). https://theconversation.com/the-ukrainian-refugee-crisis-could-last-years-but-host-communities-might-not-be-prepared-178482.

21 Anghel, Remus Gabriel and Trandafoiu, Ruxandra, "A Glimpse of Humanity: How Romanians Have Mobilised to Help Ukrainian Refugees," EUROPP. London School of Economics and Political Science, 08 March, 2022, https://blogs.lse.ac.uk/europpblog/2022/03/08/a-glimpse-of-humanity-how-romanians-have-mobilised-to-help-ukrainian-refugees/.

22 Campbell, Charlie. "Despite Decades of Tension, Romanians Are Embracing Ukrainian Refugees." Time. (28 Feb 2022). https://time.com/6152201/romania-ukraine-refugees-solidarity/.

23 https://reliefweb.int/report/romania/rapid-needs-assessment-Iași-romania-march-21-28-2022

2.1.6. Smart Maturity

Smart maturity of Iași is quite disparate across the different city sectors.

All Iași city departments and concerned authorities have a good understanding of the importance of data in their domain or field of activity, as a foundation for their digital strategy in order to achieve smart benefits. Most of them started capturing and storing data. The city does not disaggregate data by gender. In certain cases, there is a discrepancy between the information provided by the authority and other information sources. Some data and information are publicly available via websites or public portals, but no data are available in real-time.

There is a disparity of maturity with respect to interpreting data. Some departments or authorities are very advanced in the interpretation of data (such as Transport, water supply / waste water) and have different applications running. Other are lacking maturity (such as soil, buildings).

Iași city has adopted a digital transformation strategy and committed to significant funding for smart/innovative programmes, e.g. wastewater, water supply. A smart City Officer has been deployed to develop smart applications in coordination with utility companies.

There are different Proofs of Concept and pilot projects ongoing in most of the domains. Cooperation between the implementing authorities needs improvement in order to share ideas, data or information or enhance the different smart city initiatives over the boundaries of the concerned domains.

Contribution of citizens in the smart development is relatively low, however there is an artificial intelligence community in Iași (https://Iași.ai) active in organising meet-ups, conferences, hackathons, etc by and for the academic world, local authorities and private companies and individuals.

The city has a good high-speed broadband and mobile data coverage.

2.2. City environmental baseline

According to the GCAP methodology, the Green City Baseline evaluates the city's current environmental conditions based on data collected for various environmental indicators. The collection of indicators facilitated the identification of the main challenge areas, following the traffic light benchmarking process of State-Pressure-Response indicators. The challenges were categorised based on the traffic light screening (red, amber and green to denote severe, moderate or minor impacts respectively).

The preliminary results of the indicators database were supplemented and enhanced through expert knowledge, a 360° City Scan (see section 2.2.4 for more information) and engagement from stakeholders, to arrive at an evaluated benchmark which was deemed more accurate and reflective of the true environmental challenges in Iași.

2.2.1. Environmental indicators baseline values summary

AIR QUALITY AND MITIGATION OF GHG EMISSIONS

Air pollution is a major challenge in Iași. Suspended particles (PM10 and PM2.5) are the most critical pollutants affecting human health and wellbeing. The main indicators which trigger red flags for poor air quality are PM2.5 and NOx while PM10 concentrations trigger an amber flag. Air pollution comes from numerous sectors including transport, energy, industry and buildings within the boundary of the city. Targeted measures in recent policy frameworks shows Iași's commitment to address this challenge, thus it is assessed as a high priority challenge (see table 4).

TABLE 4 KEY AREAS OF ENVIRONMENTAL IMPACT – AIR QUALITY AND GHG EMISSIONS

Key areas of environmental impact	Relevant GCAP sector(s)						
	Green spaces	Water	Solid waste	Buildings	Energy	Air quality	Transport
Transport: According to the city's 2018-2019 GHG inventory, on-road transport emissions amounted to 179,001 metric tonnes CO_2e. Challenges are related to the rise in the number of private motorised vehicles, an ageing vehicle fleet, sub-optimal traffic management as well as limited use of public transport and non-motorised means of transport	●				●		●
Buildings: The city's 2018-2019 GHG inventory identifies residential buildings as the primary source of emissions in the stationary energy category (353,219 $MTCO_2e$), with Institutional buildings and facilities emitting 31,817 $MTCO_2e$ and commercial buildings and facilities emitting 4,040 $MTCO_2e$. Challenges are rooted in the poor energy efficiency of municipal buildings and of other large public or private buildings (hospitals, cultural buildings, shopping centres and office buildings) as well as a fragmented local building renovation market	●			●	●		
Industry: particulate pollution due to dust contributes to air pollution; about 4-12% in PM10 are the mineral industry and poorly controlled land disturbance and construction sites as well as road asphalting activities (up to 30% in PM10)			●		●	●	
Energy: Emissions from energy generation that excludes generation of grid-supplied energy is substantial, with 2018-2019 inventory figures standing at 672,516 $MTCO_2e$. For the same reporting period, emissions from thermal heat generation were estimated to be 97,520 $MTCO_2e$.[24] Challenges include increased use of natural gas and biomass in individual domestic heating, decrease in heat distributed through the old and inefficient centralized system and large amounts of emissions from Iași 1 and Holboca Combined Heat and Power Plants				●	●	●	●
Insufficient detailed monitoring of air pollution is a persistent problem in the city (causes being lack of up-to-date infrastructure and insufficient funding for monitoring devices' maintenance and operating costs)	Cross cutting						

24 Source CDP, inventory 2012.

WATER QUALITY AND RESOURCES

The city baseline shows moderate to high pollutant concentration in Bahlui river negatively affecting the quality of water bodies. The major pollutants which trigger red flags are related to organic pollution measured primarily through the biochemical oxygen demand of receiving waters. Furthermore, moderate to high levels of ammonia (NH4) have been found in Bahlui river.

While water resources available to Iași are not in a critical state (i.e. the water sector is confident of the availability of surface water and groundwater for the requirements in the city), there are very high levels of non-revenue water and there is no reuse of treated wastewater or grey water. Water supply tariffs are set very low, providing limited incentives for water conservation and reuse (see Table 5).

TABLE 5 KEY AREAS OF ENVIRONMENTAL IMPACT – WATER

Key areas of environmental impact	Relevant GCAP sector(s)	
	Water	Transport
Water and wastewater: Combined sewerage system results in frequent overflows of mixed wastewater to receiving streams; absence of drainage masterplan for Iași; high levels of non-revenue water (NRW)	●	
Transport: During rain or snowfall, pollutants resulting from road traffic which are deposited on the road end up in the city sewage system or in drains, with a final unloading into a natural outfall or onto the land		●

PHOTO 26 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=514372167384544&SET=PB.100064352962882.-2207520000.&TYPE=3

PHOTO 27 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=495969369224824&SET=PB.100064352962882.-2207520000.&TYPE=3

GREEN SPACE, BIODIVERSITY AND ECOSYSTEMS

In the case of green space, the city has moderate areas of parks and gardens. Green and blue spaces are available in the wider region but could be enhanced in the vicinity of key areas of urban land-use. According to decisions taken by the local council in 2018, a minimum value of 30% green areas is imposed for the lands located in the built-up area of Iași municipality. Nevertheless, it fails to achieve national and European standards in two respects: (i) the area of green space available per capita within the urban area; and (ii) the proportion of population who live within 300m of an area of green space of at least 0.5 Ha in area.

Green spaces have a cooling effect – trees, vegetation and water bodies cool the air by providing shade, transpiring water from plant leaves and evaporating surface water, thereby mitigating effects exacerbated by climate variability. Green spaces can play a significant role in reducing felt temperatures in the city, in addition to playing their part in absorbing carbon. Furthermore, some public spaces are found to be inaccessible or hostile to vulnerable groups, such as children and the elderly. As such, the overall access to green and blue areas for inhabitants can be enhanced (see Table 6).

TABLE 6 KEY AREAS OF ENVIRONMENTAL IMPACT – GREEN SPACE, BIODIVERSITY AND ECOSYSTEMS

Key areas of environmental impact	Relevant GCAP sector(s)		
	Green spaces	Buildings	Transport
Unequal access to green and blue open spaces in built-up areas	●	●	●
Transport: High levels of pollutants impact vegetation; road expansion and high demand of parking spaces very often results in dismantling the green spaces; some of the road infrastructure rehabilitation outside the city's boundaries could interfere with the Natura 2000 protected areas	●		●
Biodiversity: Absence of information on biodiversity trends	Cross cutting		

PHOTO 28 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=4960816758802 60&SET=PB.100064352962882.-2207520000.&TYPE=3

SOILS

No major issues have been identified with the soil quality of the city. Nevertheless, soil characteristics are sensitive to climate variability in water and temperatures, so the quality of soil can determine productivity in an agriculturally rich region such as Iași, having a direct impact on the economy (see Table 7).

Table 7 KEY AREAS OF ENVIRONMENTAL IMPACT – SOIL

Key areas of environmental impact	Relevant GCAP sector(s)	
	Solid waste	Transport
Support continued soil remediation of contaminated industrial sites under control of the Environmental Agency	●	●
Improved monitoring of air pollutants emitted by Iași 1 and Holboca Combined Heat and Power Plants		●

ADAPTATION AND RESILIENCE

Air quality, health, access to green spaces and better mobility are all aspects that are high on the agenda of the citizens of Iași. The city's systems and services will need preparation for coping with heat waves, intense and shorter periods of rain as well as other shocks (see Table 8). The generic limitations on adaptive capacity emerge from:

- Heavy sensitivity of the water and energy system to climate variability
- Systems operating close to capacity
- Location condition or age of the system or infrastructure
- Barriers to developing additional capacity within systems such as finance or alternative locations

TABLE 8 KEY AREAS OF ENVIRONMENTAL IMPACT – ADAPTATION AND RESILIENCE

Key areas of environmental impact	Relevant GCAP sector(s)		
	Green spaces	Buildings	
Inadequate estimation of vulnerability of building stock and its inhabitants	●	●	
Critical systems inadequately prepared for resilience in the face of climate variability and extremes (e.g. public health, water, energy, emergency response)	Cross cutting		
Poor public awareness of risks associated with floods, landslides, forest fires and earthquakes	Cross cutting		
Development plans fail to identify areas of high risk from flood, landslides and other risk which should preclude certain types of development	Cross cutting		

2.2.2. Baseline sectoral performance

LAND USE

The City of Iași has typical land use pressures, with very busy and densely developed central areas and a lot of pressure exerted on expanding the city boundaries to allow urban growth. This comes with a number of challenges, such as less efficient and sustainable transport networks as well as social problems due to lack of equitable access to the city's different locations and increased distances to basic services.

New developments in Iași are often low-density urban expansion zones dominated by single family dwellings under-served by public transport infrastructure, services and retail – a land-use pattern linked to higher emissions from increased travel needs. Furthermore, pressure created by 'investor-oriented' construction of residential or commercial development projects has fragmented green space.

What's already being done?

The General Urbanistic Plan of Iași points out the need to achieve a balance among the environmental objectives and those of the productive sectors (economic, transport, etc.). It includes targets for land-use planning and the natural habitat.

The strategy of economic and social sustainable development of the Municipality of Iași – Horizon 2020 includes provisions regarding organizing open space for improved air quality.

The Integrated Urban Development Strategy of Iași Municipality 2015–2030 includes initiatives for improvement of green spaces and parks within neighbourhoods.

WATER AND WASTEWATER

Iași City is supplied with potable and industrial water through seven major raw water sources in the Siret and Prut river basins, three of which are surface water intakes (on the Moldova and Prut rivers and Chirița lake) and four are ground water abstractions (at Timisesti, Verseni, Zvoronești and Miroslovești). Currently, the quality of both surface and raw water used to produce drinking water is in general good. Furthermore, there is currently no excessive water withdrawal from the existing sources (i.e. the annual withdrawal is lower than the annual natural generation rate); thus, any negative impact on the natural environment could be rated as "low".

Wastewater is being collected from all developed areas of Iași city by a combined sewer network, i.e. storm water and wastewater is collected and drained through the same network. All residential developments and industries are connected to the sewerage network with exception of the company "Antibiotice" (pharmaceutical industry), which treats its wastewater in a full biological wastewater treatment plant (WWTP). Treated effluent is being discharged into Bahlui river. There are some areas in Iași city where the capacity of the combined sewerage is limited, resulting in flooding from faecal-contaminated stormwater in the case of heavy rainfall. With increasing rain intensity expected in future due to climate change effects, this situation may worsen.

What's already being done?

There is a Flood Protection Plan at municipal level. ApaVital's actions are coordinated according to this plan. If warnings are being received from the National Meteorology Agency, ApaVital requests for the opening of the sluice gates installed at the 18 storm water overflows in the sewer network to discharge the mixed rainwater and wastewater directly into Bahlui river according to the Water Management Permit in force and after having received consent of the watercourse administrator.

The collected wastewater from iași city is fully treated at Dancu WWTP. This WWTP employs a full activated sludge process with nutrient removal (nitrogen and phosphorous) and all wastewater is being treated to the national effluent standard (NTPA 001/2005).

SOLID WASTE

The management of the sanitation service of the Municipality of Iași has been delegated directly to Salubris SA – a company owned 100% by the Municipality. Salubris SA collects, treats and landfills household, commercial and other non-hazardous wastes. The share of the non-residential waste is around 25%. Services include the weekly collection from all households and enterprises (including the collection of separated recyclable materials) and the collection of waste from construction and demolition activities. The total municipal waste generation is around 240 kg/year/cap, which comprises 30% of recyclables, 50% of organic/green waste and 20% of non-recyclables waste.

While the overall collection rate is high,and the landfill site with a relatively long remaining lifetime is generally well-managed, issues persist in the delivery of an efficient solid waste management service, including:

- Household-level segregation of waste is significantly below targets despite the efforts of Salubris to improve performance through information dissemination and education of customers
- Uncontrolled deposits of solid waste in public open spaces, especially in the metropolitan area
- Lack of public understanding of the need to not include inert material in the organic waste stream for production of high-quality compost
- Absence of waste-to-energy (W2E) provision from biogas emissions from the landfill site

What's already being done?

Currently, the organic waste is landfilled; however, projects for a material recovery facility (MRF) and a composting unit are in a study phase.

Recently, a new landfill cell has been made operational. Extending the lifetime of the facility until 2033. A project is in preparation for the capture and valorisation of landfill gas at the sanitary landfill.

The major local policy instrument guiding future development in the sector is the: Waste Masterplan – Long-term investment plan for the period 2008-2038 on Integrated Waste Management in Iași County. The provisions of this plan include:

(i) biogas management and increase of waste collection coverage;

ii) diversion of organic waste to compost stations;

(iii) to provide and impose targets for recycling and recovery rates for packaging waste; and

(iv) the closure of non-conforming landfills in the urban and rural areas. Iași County has the obligation to frequently review its waste management plan.

The City of Iași is already accustomed to waste reduction initiatives: in 2017 a letter was signed committing the city to implement a zero-waste strategy and to become the first municipality in Romania with a population of over 350,000 inhabitants to join the international network "Zero Waste Cities".

BUILDINGS

Residential buildings represent the largest part of the building stock in Iași and are responsible for the largest share of energy consumed (52.96% in 2012 according to SECAP). Natural gas is the main energy source in residential buildings (57.23% of residential buildings in Iași municipality), whilst wood is the least common (4.59%). The other energy sources used in the residential sector are: thermal energy provided by the central heating system (23.08%) and electric energy (15.10%). About 87% of homes were built before 1989 and 13% after 1990. Whilst buildings built between 1950 and 1980 addressed urgent housing needs at the time, these buildings are characterized by a low degree of thermal insulation (prior to the energy crisis of 1973 there were no regulations on thermal insulation of buildings).

From an energy consumption point of view, the existing building stock still has significant potential to be brought up to high standards in terms of energy performance, highlighting the importance of developing an ambitious renovation strategy for residential buildings in Iași.

The city shows a strong commitment to improving energy efficiency in public buildings, which should be extended to support improved thermal efficiency of private dwellings and increased affordability of heating.

What's already being done?

National data suggest that the energy performance of newly constructed residential buildings has been improving markedly since the 1980s, with buildings constructed in the 1990s consuming approx. 150-350 kWh/m2 per year and ones built after 2000 consuming 120-230 kWh/m2 per year.

Since 2010, energy efficiency requirements for the construction of buildings have undergone significant changes and an Energy Performance Certificate (EPC) became compulsory in 2013 for buildings that are built, sold, rented or are undergoing major renovations including buildings owned and/or administered by public authorities or institutions providing public services. [25]

Under the energy efficiency project for public buildings, the city has obtained financing of up to EUR 20.5 million from EBRD to help upgrade 15 buildings and the bus and tram depot. The Project is expected to result in energy savings of around 34%.

In 2022, the City Hall applied to the EU financial instrument Recovery and Resilience Mechanism (RRM) Component 5 – Renovation Wave of the National Recovery and Resilience Programme for the thermal rehabilitation of four blocks of social flats, totalling about 300 homes. This project will be further evaluated and hopefully financed.

25 The EPC was introduced by Law 159/2013, for the amendment and completion of Law 372/2005 on energy efficiency of buildings and entered into force on July 19th, 2013.

ENERGY AND LIGHTING

The City of Iași has a diverse range of energy supply designed to support the high standards of quality of life that the municipality wants to provide to citizens. The main elements of the energy supply system are: (i) electricity power supply system; (ii) natural gas distribution system; (iii) central heating system (SACET) for district heating and hot water consumption; and (iv) public lighting.

Iași enjoys a relatively stable supply of energy and high levels of reliability in general. Further improvement can be achieved in the district heating transport and distribution systems, already subject to three rehabilitation programmes during the 2008-2022 period. Furthermore, the heating plants rely on burning hydrocarbons and in the case of CETII (Holboca CHPP) coal is used during the winter season. In this regard, there is a strong will to switch from coal to gas at this plant after 2025, with an expected threefold decrease of CO_2 emissions. This action is conditional upon the planned enlargement and approved connection of the natural gas supply pipeline.

The continuing commitment of the city to generate and support energy savings is reflected in the downward trend in GHG emissions – both on a per capita and per unit of GDP basis. This trend is likely to continue, although further measures can be supported to accelerate this trend, triggered by the decarbonization driver of harmonizing all activities developed in the city with the EU taxonomy. In this regard, the city will update the environmental and sustainable development strategies and elaborate the carbon balance of its activities.

What's already being done?

Under the Local Agenda 21, the municipality of Iași spent more than EUR 9 million to improve the quality of public lighting, replacing nearly 8,000 lights with LED bulbs (~40%) and expanding the network to additional streets. The city is currently implementing a public lighting dimming programme based on the season and the level of ambient brightness.

Currently, the city is running the third refurbishment programme of the district heating (DH) network (~8 km of transport and distribution piping). The investment is supported by Large Infrastructure Operational Programme (POIM) and is amounting to EUR 7.6 million. In addition to "Green House" and ELECTRIC UP! Programmes that are funding green electricity and energy efficiency at national level, there is also one local incentive at local level: partial integral exemption from paying local tax for building owners with solar panels.

PHOTO 30 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=512022304286197&SET=PB.100064352962882.-2207520000.&TYPE=3

INDUSTRY

The industrial sector is complex, comprising large energy-consuming industries with high energy intensity (metallurgical industry, building materials, chemicals) and small energy consuming industries, but some with high energy intensities (such as the food industry, wood processing industry, papermaking and wood products, etc.).

The data available for Iași Municipality regarding the industrial sector are limited, since the local government has limited control over the sector. However, local government (the city environmental office) enforces the compliance of local industries with national regulations and has responsibility for monitoring emissions and discharges. The performance of the industrial sector in Iași in terms of wastewater discharges, the treatment and disposal of toxic wastes, emissions and discharges appears to be satisfactory, although continual monitoring is necessary and there is limited or no reuse of wastewater.

What's already being done?

In Romania, industrial consumers have the obligation to: (i) perform energy audits on their energy consumption; and (ii) carry out annual programmes to improve energy efficiency and to complete annual statements and questionnaires on the evolution of energy use. Following these requirements, the whole industrial sector in Romania is obliged to achieve an annual rate of savings of approx. 0.6 Mtoe in the period 2021-2030.

PHOTO 29 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=495969372558157&SET=PB.100064352962882.-2207520000.&TYPE=3

PHOTO 31 SOURCE: HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=517089240446170&SET=PB.100064352962882.-2207520000.&TYPE=3

TRANSPORT

Mirroring the strong increase in population and economic growth, the Metropolitan Area of Iași city has exhibited a high level of mobility over recent years.

Iași continues to be a heavily polluted city even though public transportation and NMT account for 78% of all trips (walking covers almost 33%, public transport covers around 45%, while cars cover almost 22%; cycling is almost non-existent). Significant traffic congestion, a surge in the number of private motorised vehicles use (15.35% in 2014 to 21.9% in 2021) and ageing vehicles are the primary causes of air pollution in Iași. By encouraging commuters to walk or cycle where adequate and distances allow for it or carpool, improving the quality and dependability of public transportation and encouraging the purchase of environmentally friendly automobiles (EV vehicles), the goal is to lower pollution levels.

Additionally, there are no regulations (local, regional or national) that prevent the recertification and approval of vehicles older than a specific age for usage on public roads (e.g. average age of the public transport fleet is 20 years). Consequently, vehicle traffic is a significant source of various pollutants, including SO_2, NO_x, non-methane volatile organic compounds, lead pollution, PM10 and PM2.5.

The City of Iași decided to update the SUMP in 2021; the procedure is nearly complete and the document is waiting for City Council approval. A new transport modal split has been defined as part of this process. In order to reflect the mobility of residents on working days, the house surveys were carried out in June and July 2021 on a sample that represented 1% of the entire population.

The motorisation rate, which denotes people's access to cars, is an essential element in transportation planning. According to the Sustainable Urban Mobility Plan (SUMP), an increase of the motorisation rate has been observed from 268 cars/1,000 inhabitants in 2013 to 318 cars/1,000 inhabitants in 2021. This increases the demand for residential parking lots and leads to overload of the street network.

Introduction and summary of SUMP 2022 – Update the Sustainable Urban Mobility Plan for the Iași Growth Pole for the post-2020 period

The Sustainable Urban Mobility Plan for the Iași Growth Pole (PMUD Iași) produced in 2016 served as the foundation for the creation of the strategy document. The updating of the PMUD during this stage is important to update the vision, objectives, projects and investments, in order to connect the strategic document with the current European and national strategic framework, as well as to provide the grounds for an efficient and effective use of European and national funds in accordance with the "Romanian Catching-Up Regions – Sustainable Urban Development 2021-2027" document. This will enable a seamless transition from the financial programming period 2014-2020 to the future programming period 2021-2027. The chosen coverage area will allow for the integration of sustainable transportation-related projects and initiatives with other initiatives included in the Municipality of Iași and the Metropolitan Area's sustainable development strategy, producing the best results possible in terms of social, environmental and economic goals as well as goals pertaining to integration and safety and improving the quality of life for residents.

The sustainable Urban Mobility Plan at the level of the Iași Growth Pole primarily aims to propose actions that improve the municipality's accessibility and relations with other localities, to diversify and use means of transportation in a sustainable manner from a social and economic perspective and environment, as well as to a good integration of various modes of mobility and transport.

The Iași Growth Pole Sustainable Urban Mobility Plan seeks to develop a transportation system that achieves the following primary goals:

- Accessibility: providing all residents with transportation alternatives so they can reach essential destinations and services
- Safety and security: enhancing safety and security for all transport system users as well as the wider community
- Healthy environment: lowering energy use, greenhouse gas emissions and air and noise pollution
- Economic efficiency: improving the transport of people and products' economic indicators
- Quality of the urban environment: enhancing the attractiveness and quality of the urban environment and urban landscape will benefit residents, the economy and society at large

What's already being done?

The Public Transport Company of Iași was the only transport provider in operation in Iași as of 2016. It was established by the Local Council (SCTP Iași). The public transport company operates buses, trams and microbuses on 21 bus lines, 8 tram routes and 3 minibus routes totalling 520 kilometres (163.5 kilometers/100,000 population) of network. Trams make up a third of the network, buses make up 40% and minibuses make up approximately a quarter. The 126 trams in the CTP fleet range in age from the newest to the oldest by up to 50 years; the majority of this fleet (58%) was produced between 1990 and 1999. There are 140 buses altogether, of which 100 are brand-new (Euro 6 standard) with purchases made between 2016 and 2018 and 10 minibuses bought in 2003. Thirty-eight trolleybuses were previously available in the city; however, the local administration chose to abolish trolley lines in 2006.

Tickets and passes for one or two routes served as the primary form of payment for the public transportation system for a very long period.

In Iași, a new ticketing system was introduced in July 2018 in an effort to promote the use of public transit. The ability to organise multi-destination excursions with the same ticket is the biggest benefit for travellers. The notion of an integrated monthly pass (usable on all routes, including buses, trams and minibuses) and tickets with time validity (120 minutes) has been introduced by the new ticketing system. An alternative online payment was launched in August 2018: the 24pay smartphone app is a straightforward e-wallet that enables users to make cashless transactions by scanning a mobile QR code or utilising mobile near-field communication (NFC) technology. A new ticket payment system with point of sale (POS) devices installed in all modes of transportation was set to be implemented in January 2019. The POS device prints a receipt that includes the date, time and ticket validity (120 minutes).

Travelers may access real-time information on the arrival timings of the public transportation vehicles at the station with the Tranzy mobile application.

Many of the streets are of fairly low in quality. More than 20% of the 505 km of urban streets need to be renovated. This indicates that there are no facilities for walking or bicycling. Frequently, sidewalks are too narrow or obstructed by different forms of urban furniture (illegally parked vehicles, bollards, light poles). This makes it hard for vulnerable users to freely utilise the sidewalks. Within recent years, the City of Iași has initiated a series of projects aimed at increasing the attractiveness of the cultural, historical and touristic areas of the city and encouraging behavioural change towards the use of non-motorised modes of transport (cycling, but especially walking).

For monitoring air quality, in addition to national monitoring, air pollution indicators are monitored monthly and annually by the Environmental Protection Agency of Iași. Three city stations provide hourly measurements.

2.2.3. Prioritisation of environmental challenges

An analysis of the baseline, including of the key causal relationships between indicators, which involved technical and stakeholder-based prioritisation, resulted in the identification of a long-list and then a short-list of priority environmental challenges. This analysis also aims to maximise the economic and social co-benefits of interventions to address the key environmental challenges considering Iași's specific context (population size, socio-economic structure and geographical and climatic characteristics). This prioritisation exercise has identified the major urban sub-sectors which exhibit environmental red flags.

The three GCAP Priority levels are:

- **High** (urgent efforts needed, which can immediately and comprehensively address the priority environmental challenge)
- **Medium** (efforts needed to address challenges in mid-term, or supporting urgent efforts)
- **Low** (no immediate issue, but actions will lead to benefits and can be supported by longer-term efforts).

TABLE 9 SUMMARY OF PRIORITISATION OF GREEN CITY CHALLENGES

Green City Challenge		Prioritisation for action	
Air quality and GHG emissions	**High**	Air pollution is the highest priority challenge in Iași. The main source of air pollution in the city is **transport**, specifically the rise in the numbers of private motorised vehicles, compounded by sub-optimal traffic management, an aged vehicle fleet and the limited use of non-motorised and public transport. Other factors which affect air quality include increased use of coal for district heating, use of biomass and natural gas for domestic heating, poor **energy** efficiency in municipal buildings and private homes, as well as emissions and particulate pollution from power plants, construction sites and **industry**.	
Green and blue open space	**High**	While the city has moderate areas of parks and gardens, it fails to achieve national and European standards. Specifically, the issues identified include: few free areas under municipality administration are used as an extension of the current green zones; unclear **building** permits and lack of **land-use** planning and care in the development of the outskirts; unequal distribution of available green spaces; and new neighbourhoods built with limited attention to provision of basic recreational facilities such as green areas and playgrounds.	
Solid waste	**High**	The city's proportion of **waste** generated which is diverted from landfill through separation, treatment and recycling or recovery is very low. There is inadequate separation at source resulting in the majority of waste going to landfill. While the landfill operates in a sanitary manner, landfill gas is not valorised and there is potential risk to groundwater resources from the escape of leachate.	
Water quality and surface water pollution	**High**	Major pollutants in the water system have triggered red flags and this is mainly due to: (i) the combined **sewerage** system serving the city resulting in frequent overflows of mixed stormwater and wastewater to receiving streams; (ii) the absence of a city **drainage** masterplan to better manage stormwater; and (iii) an increase in fish-farming in lakes contributing to high organic loads and eutrophication.	
Water resources	**Medium**	Whilst the water sector is confident of the availability of surface **water** and groundwater for the requirements in the city, various issues exist, including high levels of non-revenue water (which add to unnecessarily high energy consumption) and the fact that there is no reuse of treated wastewater or grey water.	
Adaptation and resilience	**Medium**	Findings show that critical systems (public health, water, energy, emergency response, etc.) are inadequately prepared for resilience in the face of climate variability and extremes. Air quality, health, access to green spaces and better mobility are all aspects that are high on the agenda of the citizens of Iași. Preparation of the city's systems and services to better cope with heat waves as well as more intense and shorter periods of rain is required, along with increased adoption on nature-based solutions.	**All**
Soil quality	**Low**	While soil quality is not a major issue currently, various activities will continue to affect this: limited heavy metals from **industrial activity**, leaching from solid waste as well as particulate accumulation from transport and energy use.	
Biodiversity	**Low**	Available data shows there is an abundance of bird and other species. Nevertheless, attention must be paid to the **land-use planning**, in particular any future expansion of road networks especially in the Metropolitan area outside the city centre, as this could cause fragmentation of animal habitats. In addition, low water quality and waste management put pressure on local aquatic life.	

2.2.4. 360° City scan

To complement the Technical Assessment, the city applied the "Iași 360° City Scan" to position the environmental challenges identified within the city baseline against the city maturity radar. This tool is used to map the performance of a city (infrastructure readiness and services efficiency), thus potential growth areas, from six different perspectives: circularity, inclusiveness, attractiveness, productivity, resilience and connectivity. The perspectives respond to the current global challenges where cities must deal with: (i) climate change; (ii) resource scarcity; (iii) technologization; (iv) demographic changes; (v) social transformation; and (vi) globalization. This tool supported the identification and short-listing of the long-list of Green City Actions.

The perspectives work together as a whole towards a balanced city. The inner two circles in the radar represent the status of the physical system of the theme, the outer two circles represent the 'efficiency' or 'quality'. The more coloured cells in the radar, the higher level of maturity. Cells without colour indicate deficiency in the infrastructure availability or in its performance.

The radar below presents the maturity assessment of Iași. It is based on the GCAP team of experts' assessments, technical group discussions, stakeholder engagement through events as well as surveys and site observations performed between December 2021 and August 2022.

Iași's strengths lie in education, healthcare and the local economy. There is also a strong feeling of safety and security. The deficiencies concentrate on issues related to a healthy environment, especially air quality. Land management and circularity are also seen as issues, especially in relation to waste segregation and non-revenue water.

The priority environmental challenges which Iași wishes to address in formulating the Green City Action Plan are as follows:

- **Poor air quality** primary caused by: (i) traffic and transport: mainly from the increasing number of private (diesel or petrol-driven) vehicles and the aged vehicle fleet; and (ii) the use of fossil fuels in energy and heating
- **Public access to open green space**
- **Poor solid waste management system** caused by: (i) inadequate levels of waste separation at source; and (ii) low levels of diversion of recyclable materials from the waste stream going to the landfill
- **Surface water quality and related soil contamination**
- **Water resources** (high level of non-revenue water and lack of wastewater recycling)

These challenges are in line with the Technical Assessment and were verified and prioritised through the stakeholder engagement process (surveys, events, individual interviews) and confirmed by the Iași City Mayor.

Activity in the k**ey urban infrastructure and service sectors** create pressure on the urban environment, thus creating the environmental challenges. Key urban sectors to be addressed in formulating the GCAP are those with multiple impacts on the urban environment, meaning with higher potential to improve the situation. The transport, energy, buildings, water and waste sectors are identified as the key urban sectors with high potential to address the most critical environmental challenges identified in the Iași GCAP.

TABLE 10 PRIORITY ENVIRONMENTAL CHALLENGES

Urban sector impacting the environment	Priority Environmental Challenges				Other Environmental Challenges					Gender Equality Challenge
	Poor Air Quality	Access to Green Space	Solid Waste Management	Protection of Water Quality & Resources	Improving Soil Quality	Enhancing Biodiversity	GHG Mitigation	Adaptation & Resilience	Liquid Waste Management	
Transport	●	●		●		●	●	●		●
Buildings	●	●					●	●		
Industries	●				●					●
Energy	●				●		●			
Water				●					●	
Waste			●							
Land Use	●	●								

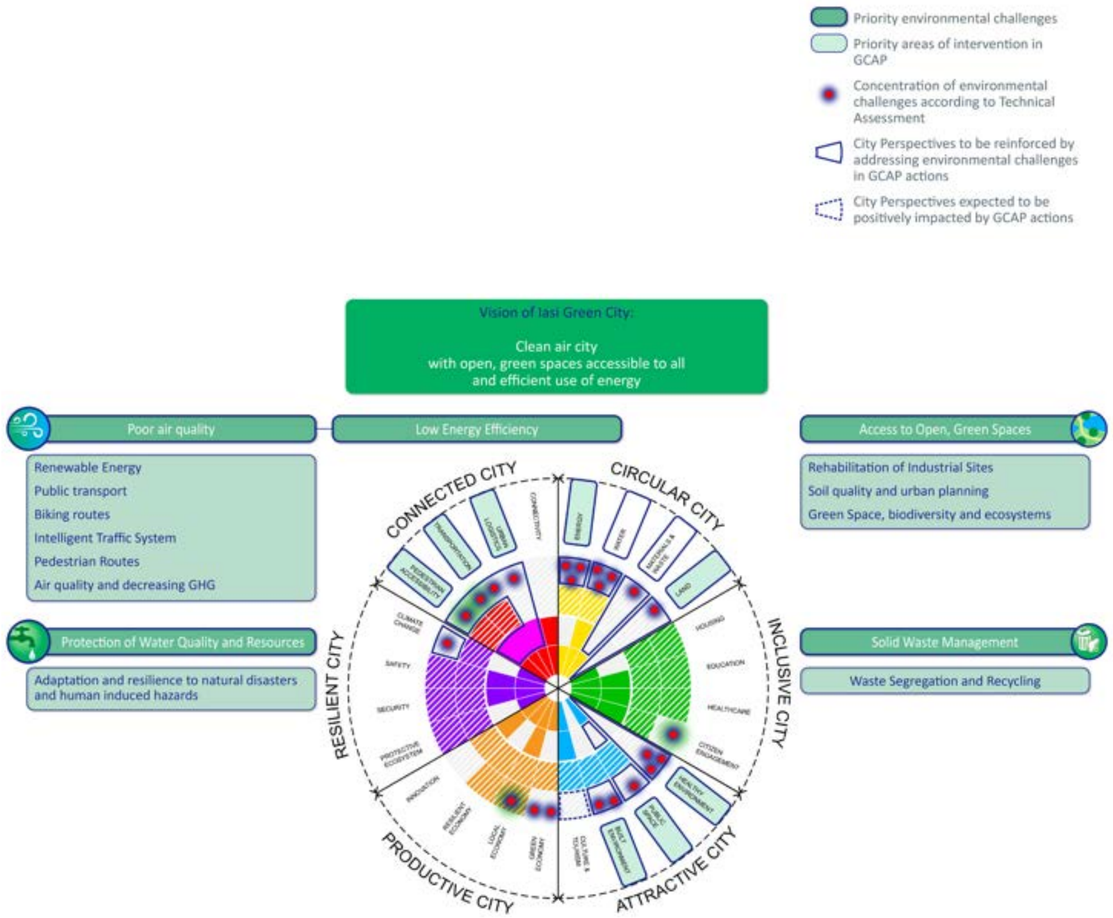
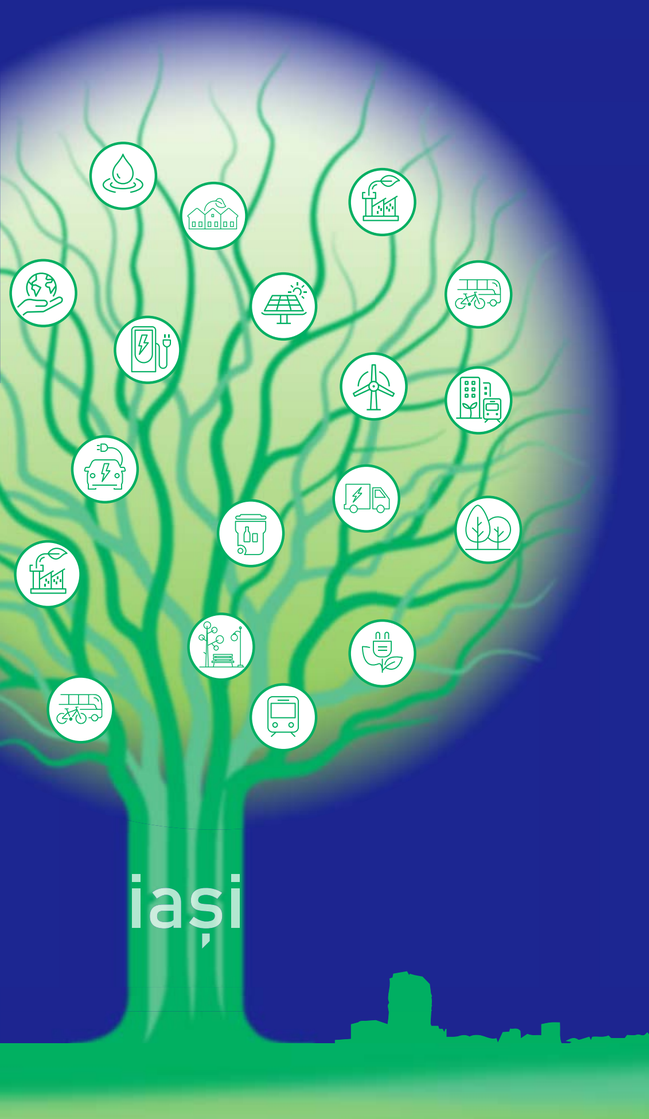


FIGURE 5 GREEN CITY ENVIRONMENTAL CHALLENGES PRESENTED ON THE 360° CITY SCAN RADAR

3. GREEN CITY VISION OF IAȘI AND STRATEGIC OBJECTIVES



3 GREEN CITY VISION OF IAȘI AND STRATEGIC OBJECTIVES

The Green City Vision of Iași sets out where the city would like to be in the medium-term (15 to 20 years) in terms of the key characteristics of the city and how it is experienced by residents and visitors. As a result of stakeholder consultations as well as inputs from the Iași GCAP Steering Committee, a green city vision was defined.

Iași Green City Vision:

Clean air city with open, green spaces accessible to all and efficient use of energy

The defined Green City Vision is the basis for identification and further development of the strategic objectives by sector which together contribute to achievement of the Green City Vision. These in turn have led to the identification of the specific interventions which together can deliver against these objectives.

FIGURE 6 IDEOGRAM OF DEFINING GCAP ACTIONS ALIGNED WITH THE GREEN CITY VISION

The strategic objectives and associated interventions set out the pathway to achieve this adopted Green City Vision.

1. The Strategic Objectives set out the overall sector-specific goals which need to be achieved in the medium- to long-term in order to reach the Green City Vision.
2. The definition of the sectoral visions narrows down the path to be followed in each sector to realise the Iași Green City Vision through addressing the priority environmental challenges.

The strategic objectives are proposed to guide achievement of the sectoral visions and the accompanying long list of actions are proposed to achieve these sector objectives. This list is developed with a number of considerations in place to ensure that the actions selected are robust, realistic and achievable. Where possible, the actions highlight the extent to which strategic objectives are well-aligned across different sectors to address environmental challenges and achieve further gains through synergies. In other words, investments and actions made to drive the achievement of one strategic objective may be mutually beneficial for others (see Figure 66 and Table 11 below).

The development of the strategic objectives and accompanying actions were also informed by feedback from stakeholders, gained through public consultation, workshops and bilateral meetings.

PHOTOS 32-36

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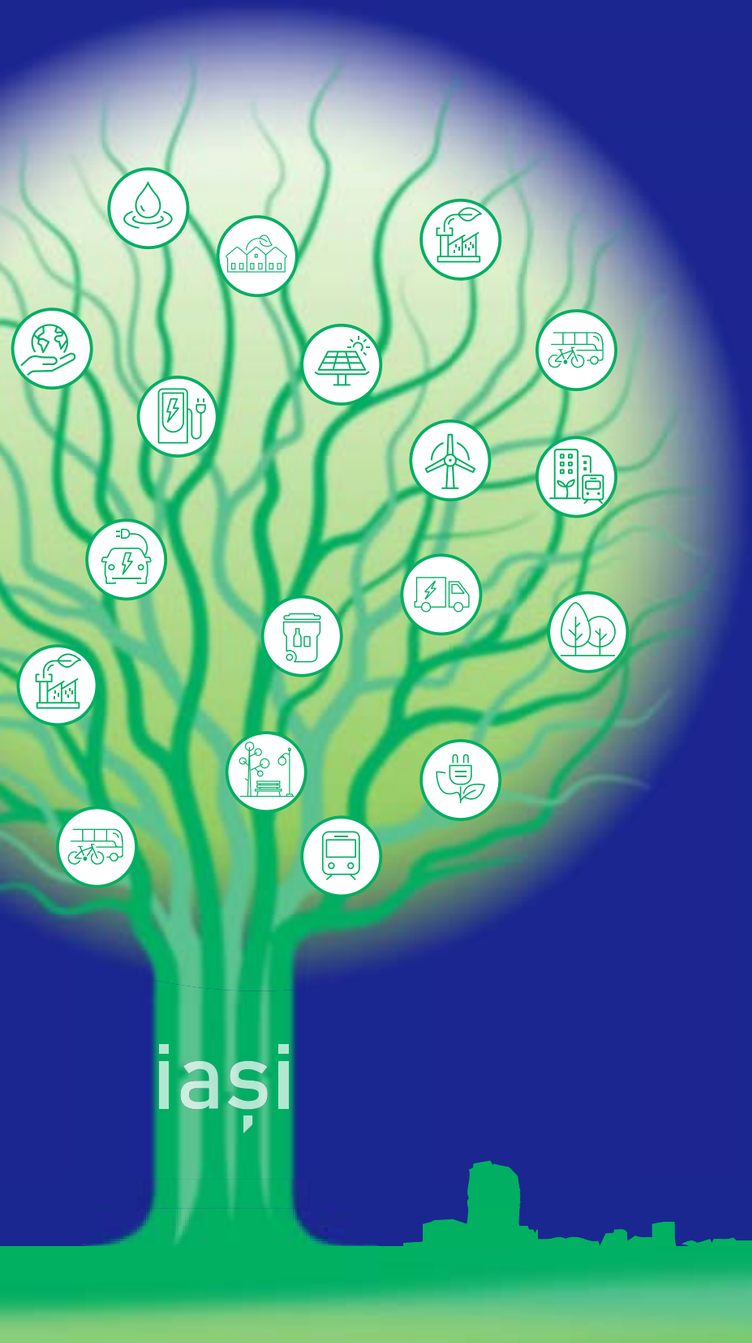
TABLE 11 SECTORAL VISIONS AND STRATEGIC OBJECTIVES

Sector / Issue Area	Sectorial Vision & Strategic Objective(s)
TRANSPORT & MOBILITY	Vision: **Reduction of emission related to urban mobility through the increase in usage of sustainable transport and non-polluting fuels**
	Strategic objectives: TRA-SO1 Improve accessibility, safety and security of transport (supply-side measures to provide alternatives to private cars) TRA-SO2 Promote mobility behaviour change (demand-side measures to influence travel behaviour)
ENERGY	Vision: **Improve energy efficiency and increase renewable energy sources in the energy consumption mix**
	Strategic objectives: ENE-SO1 Improved energy efficiency and intensity ENE-SO2 Transition to an energy efficient “green city” by increasing RES in energy mix and ensuring energy security ENE-SO3 Achieve carbon footprint reduction at city level ENE-SO4 Refurbishment of the DH network
BUILDINGS	Vision: **Energy efficient and well insulated public and private buildings**
	Strategic objectives: BUI-SO1 Energy efficient city buildings (public and private) BUI-SO2 The public is better informed about the value of increasing energy efficiency in buildings
INDUSTRY	Vision: **Increase energy efficiency. use of clean energy. improve reuse of grey water and secure gender equality in labour**
	Strategic objectives: IND-SO1 Increase energy efficiency and use of clean energy IND-SO2 Improve reuse of grey water IND-SO3 Improve gender equality
WATER AND WASTEWATER	Vision: **Water supply and wastewater disposal are resilient to climate change with minimal environmental impact. Apa Vital becomes a first-class water and wastewater service provider**
	Strategic objectives: WAT-SO1 Improve urban climate change resilience: long term security of water supply WAT-SO2 Improve urban climate change resilience: reduce number and extent of flash floods WAT-SO3 Reduce pollution of Bahlui river and tributaries WAT-SO4 Improve energy efficiency of water and wastewater systems WAT-SO5 Improve long term planning and budgeting
SOLID WASTE	Vision: **Reducing Environmental Pollution by Waste Minimization and Using Waste as a Secondary Resource of Materials and Energy**
	Strategic objectives: WAS-SO1 Avoidance of waste and improving waste segregation at source WAS-SO2 Greening of waste collection and transport WAS-SO3 Implementation of waste-to-energy solutions
LAND USE AND GREEN SPACES	Vision: **Increase quality green space in urban fabric. create and protect green space system**
	LAN-SO1 Create a local register of green spaces in Iași Municipality LAN-SO2 Revitalisation of abandoned, degraded and small public spaces LAN-SO3 Identifying deficient areas and carrying out work for extension of vegetation-covered areas
BIODIVERSITY AND NATURE-BASED SOLUTIONS	Vision: **Improved Urban Liveability by Encouraging Biodiversity and adopting Nature-Based Solutions**
	Strategic objectives: BIO-SO1 Addressing environmental challenges through boosting nature-based solutions
SMART CITY	Vision: **Smart solutions enhancing city liveability, efficiency and social inclusion**
	Strategic objectives: SMA-SO1 Enhance smart city governance SMA-SO2 Integrated data management and smart city platform SMA-SO3 Energy – smart solutions for improved energy efficiency SMA-SO4 Water – smart solutions to reduce NRW SMA-SO5 Public buildings showcasing smart energy efficiency applications SMA-SO6 Transport, smart applications enhancing use of public transport and reducing negative impact on air quality SMA-SO7 Solid Waste – smart solutions for improved efficiency in waste collection
ADAPTATION AND CLIMATE RESILIENCE	Vision: **Enhance resilience of Iași against multiple risks (heat-waves; air pollution) achievable through adaptation and Nature Based Solutions**
	Strategic objectives: ADA-SO1 Increase awareness of Iași inhabitants on climate change impacts, decarbonisation and adaptation ADA-SO2 Integrate resilience into sectoral investments addressing environmental challenges
ENVIRONMENTAL GOVERNANCE AND CAPACITY BUILDING	Vision: **The involvement of citizens in the decision-making process of the green city**
	Strategic objectives: GOV-SO1 Enhance stakeholder consultation GOV-SO2 Improve social inclusion and reducing vulnerabilities GOV-SO3 Capacity building for managing and implementing loan-financed projects GOV-SO4 Strengthen local governance to support the green city transition



4. ACTIONS FOR IAȘI GREEN CITY

4 ACTIONS FOR IAȘI GREEN CITY

4.1. Selection criteria

An initial long list of 112 actions proposed by experts and stakeholders has been analysed and narrowed down to 44 priority GCAP Actions.

A selection matrix was used to prioritise actions and covered:

(1) Implementation time < 5years

(2) Preference and readiness:

- supported by authorities, utility and service providers
- prioritised by city stakeholders
- readiness

(3) Addressing Key Environmental challenges

(4) Urban sector co-benefits generated

(5) Cross-cutting sectoral benefits:

- smart component and smart city development
- climate resilience
- improved environmental governance
- inclusion (gender, social, economic)

FIGURE 7 IDEOGRAM OF ACTION SHORTLISTING

Analysis of stakeholder preferences was supported by surveys launched from 9 November until 15 December 2022.

The surveys revealed high interest in:

- improvement of transport and mobility
- improved access to green and open public space
- enhanced energy efficiency in buildings
- improved solid waste management and resource recovery

Actions were further discussed and refined during workshops held during the 4th stakeholder engagement event on 23 November 2022.

Similar actions targeting different sectoral objectives were identified, merged and presented as integrated GCAP actions, directed to achieving similar outcomes and strategic objectives.

The preselected priority actions have been validated by the Iași City Mayor.

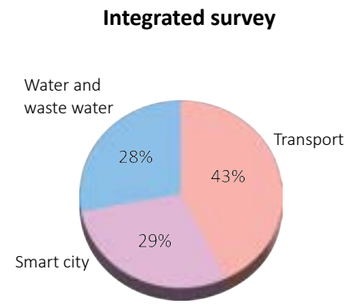


FIGURE 8 SURVEY RESULTS – STAKEHOLDERS PREFERRED SECTORS OF INTERVENTION FOR THE GREEN CITY TRANSITION

4.2. GCAP actions summary

In the total of the selected 44 GCAP actions, 29 are investment-related and 15 are policy-related.

TABLE 12 GCAP ACTIONS OVERVIEW

Sector	Investment Actions	Policy & Other Actions	Total Actions	New Jobs
TRANSPORT	3	1	4	260- 360
ENERGY	3	2	5	5
BUILDINGS	6	0	6	11
INDUSTRY	0	0	0	0
WATER & WASTEWATER	5	3	8	30- 55
SOLID WASTE	5	1	6	60
ADAPTATION & RESILIENCE	1	2	3	21- 61
LAND USE, GREEN SPACE. BIODIVERSITY & NATURE BASED SOLUTIONS	4	2	6	27- 49
SMART CITY SOLUTIONS	2	0	2	2- 3
ENVIRONMENTAL GOVERNANCE & CAPACITY BUILDING	0	4	4	1- 2
TOTAL	**29**	**15**	**44**	**417 - 606**
	64%	**36%**	**100%**	

4.3. Actions Overview, Cross-Cutting Themes/Co-Benefits

The Green City Action Plan comprises **44 actions** which include investments in both: (i) infrastructure and service improvements; and (ii) policy development, capacity building and advocacy. The actions cover the sectors of: (i) transport and mobility (four actions); (ii) energy (five actions); (iii) buildings (six actions); water supply and wastewater management (eight actions); solid waste management (six actions); land use and green spaces (incorporating bio-diversity and nature-based solutions – six actions); smart city development (two actions); adaptation and climate resilience (three actions); and environmental governance and capacity building (four actions).

All actions are designed to be implemented over the next **five years** and help achieve the vision for a greener and more inclusive and climate resilient Iași. The GCAP is integrated in that many of the actions are linked and also support cross cutting themes and in particular: (i) gender and socio-economic inclusion and (ii) elements which seek to deepen smart maturity in the relevant sub-sector. Each priority integrated action includes gender and economic inclusion components to empower women and marginalized groups, reduce disparities and ensure inequality is not perpetuated. In addition to the two actions which specifically target the development of smart maturity in the city, almost all actions include a smart element which seeks to exploit opportunities for the enhanced use of information technology to drive innovation and efficiency.

The total estimated cost for the GCAP priority actions is approximately **EUR 580 million** of which EUR 575 million supports infrastructure investment and service extension and improvement and EUR 5 million supports policy, capacity development and advocacy actions. Funding for the GCAP will require significant financial support from both the city administration and sources of external financing. Potential sources of finance include: (i) grants from the EU; (ii) grants and loans from the EBRD and other multi-lateral financing institutions; (iii) subsidies from the state budget including under the National Recovery and Resilience Plan; (iv) financing by the local utility companies from their own revenues; and (iv) investment from the private sector under public-private partnership (PPP) arrangements. The current indebtedness level of Iași Municipality is 4.7%, significantly below the maximum ceiling of 30% set by legislation, indicating capacity to borrow up to a further EUR 300 million. However, based on the level of operating surplus recorded in 2021, Iași Municipality could only generate sufficient financial resources to allow loan repayment with a total value of EUR 75 million – approximately 15% of the total GCAP investment needs. It is proposed that the municipality use its debt contracting capacity to attract blended financing with a significant percentage of grants and subsidies, i.e. by applying for financing from: (i) EU funds under operational programmes covering the period 2021-2027; and/or (ii) the National Recovery and Resilience Plan (NRRP) for which the co-financing of the local authorities is 2%. The municipality has started to apply for such financing for different investment components, some of which are include under the GCAP.

Implementation of the GCAP in Iași will lead to an increase of direct job creation largely in the construction sector, but also in the management, operation and maintenance of the assets created. In addition to the creation of several hundred jobs throughout the five-year implementation period, it is estimated that once operational, the assets created will generate between **417 and 606 additional full-time jobs**. Furthermore, the development of green infrastructure will make the economic and social environment more attractive for private investment which will lead to an increase in economic growth of the region with positive impact on indirect job creation and on the local budget financing (increase in own-source revenues from income tax, increase of direct local taxes and fees, etc.).

In addition, the combined impact of the GCAP will be to make a significant contribution to reducing greenhouse gas production by the city. The proposed GCAP actions have the potential to generate GHG emissions reductions estimated at about **347,000 tonnes of CO_2** equivalent per annum.

TABLE 13 GCAP ACTIONS - IMPLICATIONS OVERVIEW

Summaries for all GCAP actions	
Estimates of Investment Needs and Finance Sources	EUR 580 million
Estimates of Emission Reductions	347,000 tonnes of CO_2 equivalent per annum
Estimates of Job Creation	417- 606 FTE
Gender and social inclusiveness	44 (all) Actions include the Gender and Social Inclusiveness (GSI) component
Smart maturity	4 Actions Entirely Smart 22 Actions with Smart Component

TABLE 14 GCAP ACTIONS - OVERVIEW ON SMART AND GENDER & SOCIAL INCLUSIVENESS

Sector	Action Name	Smart component	GSI component
TRANSPORT	TR1: Extension of the coverage for the public transport system and renewal of the fleet	Smart Component	Yes
	TR2: Increase availability, safety and security of non-motorised trips	Smart Component	Yes
	TR3: Extension and modernisation of PT depots	Smart Component	Yes
	TR4: Implementation of restrictive parking regulations	Smart Component	Yes
WATER AND WASTEWATER	WA1: NRW reduction feasibility study / action plan	N/A	Yes
	WA2: Implement / improve pressure zoning and DMAs	Smart Component	Yes
	WA3: Implement real loss reduction programme	N/A	Yes
	WA4: Smart leak detection	**Entirely smart**	Yes
	WA5: Urban Drainage Master Plan	N/A	Yes
	WA6: Feasibility Study for Re-Use of Treated Effluent and Sewage Sludge from Dancu WWTP	N/A	Yes
	WA7: Extension of water supply system in Iași City Metropolitan Zone	N/A	Yes
	WA8: Extension of sewerage in Iași City Metropolitan Zone	N/A	Yes
SOLID WASTE	WS1: Capacity building and awareness raising on reuse and segregation of waste	Smart Component	Yes
	WS2: Green islands for segregated solid waste collection in the city (phase 1: 175 islands)	Smart Component	Yes
	WS3: Additional civic amenity sites	Smart Component	Yes
	WS4: Waste management centre	Smart Component	Yes
	WS5: Digitisation of waste collection operators	**Entirely smart**	Yes
	WS6: Landfill gas utilisation at landfill Waste-to-energy project at the landfill site	N/A	Yes
ADAPTATION & RESILIENCE	AD1 Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures	Smart Component	Yes
	AD2 Improve seismic resilience of buildings	N/A	Yes
	AD3 Development of a Strategic Emergency Response Plan	Smart Component	Yes
ENERGY	EN1: Fuel switch at Holboca Combined Heat and Power Plant (CHPP)	Smart Component	Yes
	EN2: Make decarboniszation a key objective of the city's sustainable development/environmental strategy	Smart Component	Yes
	EN3: Increase awareness of population regarding energy efficiency	Smart Component	Yes
	EN4: Refurbishment of the DH network	Smart Component	Yes
	EN5: 5 Photovoltaic Park Tomesti – Iași ApaVital, 25MW	Smart Component	Yes

Sector	Action Name	Smart component	GSI component
BUILDINGS	BU1: Improving the energy efficiency of private buildings	Smart Component	Yes
	BU2: Improving the energy efficiency of public buildings	Smart Component	Yes
	BU3: Buildings energy profile	Smart Component	Yes
	BU4: Building nZEB plus housing for young people at risk	Smart Component	Yes
	BU5: Annual competition for Energy efficient buildings	N/A	Yes
	BU6 Users education campaigns for optimising and monitoring energy consumption in buildings	Smart Component	Yes
LAND USE. GREEN SPACES. BIODIVERSITY AND NATURE BASED SOLUTIONS	LA-1: Create a green corridors network connecting Centre – River Bahlui – Galata forest (35-50ha)	N/A	Yes
	LA-2: Green oasis-– Reducing heat island effect by creating green oasis in residential neighbourhoods. Parks around water bodies and small public spaces. And greening parking lots (40-60ha)	N/A	Yes
	LA-3: Rehabilitation and moderniszation of the leisure area CA Rosetti (1.79ha)	N/A	Yes
	LA-4: Communal gardens at schools (2-7ha)	N/A	Yes
	LA-5: Assessment of the city needs in extension of vegetation and development of city greening plan	N/A	Yes
	LA-6: Green Ambassadors of neighbourhoods – Citizens Cooperation Platform	N/A	Yes
GOVERNANCE AND CAPACITY BUILDING	GV1: Setting-up communication framework with stakeholders	Smart Component	Yes
	GV2: Development of GESI (Gender Equality and Social Inclusion) Action Plan	N/A	Yes
	GV3: Continuous professional development. Capacity building of City Hall staff and HR policy for EBRD financed projects	Smart Component	Yes
	GV4: Establishment of working group to support GCAP implementation	Smart Component	Yes
SMART	SM1: Web application for updating KPIs	**Entirely smart**	Yes
	SM2: Real time information on air quality-– the first step in creating an integrated smart platform for Iași City	**Entirely smart**	Yes

4.4. GCAP Actions finance

The total estimated value of the investment actions amounts to EUR **579,527,276.**

Details of the financial split per sector are provided in the table below.

TABLE 15 GCAP ACTIONS – SPLIT OF COSTS AND PROPOSED SOURCES OF FINANCING

INDICATIVE FINANCING SOURCE (EUR)	TRANSPORT	LAND USE. GREEN SPACES. BIODIVERSITY AND NBS	WATER AND WASTEWATER	SOLID WASTE	ADAPTATION & RESILIENCE	ENERGY	BUILDINGS	GOVERNANCE AND CAPACITY BUILDING	SMART	TOTAL	
Total value, of which:	261,300,000	49,150,000	69,450,000	11,760,000	65,000	130,832,276	55,470,000	1,100,000	400,000	579,527,276	% 100
City budget	24,700,000	150,000	-	860,000	50,000	270,000	150,000	1,100,000	400,000	27,680,000	4.7%
National budget	15,000,000	-	-	-	-	-	-	-	-	15,000,000	2.6%
National Plan for Resilience and Recovery	75,000,000	-	-	9,400,000	-	-	55,320,000	-	-	139,720,000	24.1%
EU funds	9,600,000	49,000,000	52,200,000	1,000,000	-	7,562,276	-	-	-	119,362,276	20.6%
EBRD/ IFI loan	74,000,000	-	17,250,000	-	-	27,000,000	-	-	-	118,250,000	20.4%
Modernisation fund	-	-	-	-	-	96,000,000	-	-	-	96,000,000	16.6%
Salubris budget	-	-	-	500,000	-	-	-	-	-	500,000	0.1%
Other source	63,000,000	-	-	-	15,000	-	-	-	-	63,015,000	10.9%

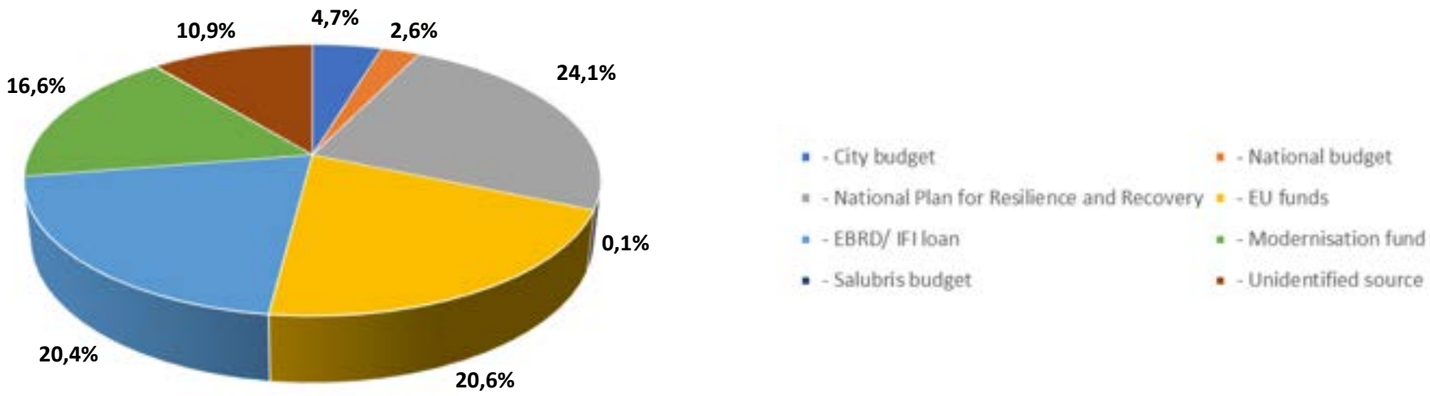


FIGURE 9 DISTRIBUTION OF FINANCIAL SOURCES

TABLE 16: GCAP ACTIONS SUMMARY TABLE

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
TRANSPORT	TR1	Extension of the coverage for the public transport system and renewal of the fleet	Investment	16 trams with 22m length	36,000	5,896	32,830	NRRP	
				24 electric buses with 10m length, 24 slow charging stations and 7 fast charging stations	9,600	7,440	Included above	European funds	
				25 electric buses with 10m length, 8 slow charging stations and 25 fast charging stations	12,000	7,750	Included above	NRRP	
				Extension of Valea Lupului line	26,000	1,300		Unidentified source	
				Extension of Holboca line	37,000	1,850		Unidentified source	
				Capital repairs of the Socola overpass – including for non-motorised access	9,000	450		National budget	
				Extension and rehabilitation of the Cerna bridge – including for non-motor²ised lanes	6,000	300		National budget	
				E-ticketing system for public transport	3,000	50	15,400	City budget, EU funds	
				Sub-total	**138,600**	**25,036**	**48,230**		**200 - 300**
	TR2	Increase availability, safety and security of non-motorised trips	Investment	Shared vehicle space areas	15,000	N/A		City budget	
				BUS-BIKE intermodal transport system ND Velo City	2,500	N/A		City budget	
				Increase the use of cycling for trips towards and from the Metropolitan Area – bicycle lanes	10,000	N/A		NRRP	
				Modernisation of sidewalks and alleys in the Metropolitan Area	17,000	N/A		NRRP	
				Intelligent municipal system for monitoring the bike lane network	1,000	N/A		City budget	
				Pilot project – 15" Min City	2,000	N/A		City budget	
				Development of Car-Bike-Bus intermodal areas	200	N/A		City budget	
				Sub-total	**47,700**	**N/A**	**28,500**		**0**
	TR3	Extension and modernisation of public transport depots	Investment	The public transportation depots will undergo two significant interventions: expansion and modernisation of Iași's depots, including the Dacia depot, as well as the transfer of depots for trams, buses and trolleybuses from central locations to the site of the former Fortus industrial platforms.	74,000	3,000	11,500	EBRD	50
	TR4	Implementation of restrictive parking regulations	Policy	The projects will include an extension of video-monitoring, sensors for parking, complex management of parking places and payments as well as corrections in case of misuse.	1,000	N/A		City budget	10
				TOTAL FOR TRANSPORT AND MOBILITY	**261,300**	**28,036**	**88,230**		**260 - 360**

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
WATER AND WASTEWATER	WA1	NRW reduction feasibility study / action plan	Policy	For hired services	600	N/A (only study)	N/A	IFI grant plus ApaVital contribution	0
				For equipment and works	600				
				Sub-total	1,200				
	WA2	Implement and improve pressure zoning and district metering areas (DMAs)	Investment	For hired services	250			IFI soft loan plus ApaVital contribution	0
				For equipment and works: (result of feasibility study)	2,000				
				Sub-total	**2,250**	**600**	**2500**		
	WA3	Implement real loss reduction program: for equipment & works	Investment	The project will implement the results of feasibility study	10,000	Incl in WA2	Incl in WA2	IFI soft loan plus ApaVital contribution	8
	WA4	Smart leak detection	Investment	Measure and predict water leaks by using artificial intelligence based on flow and pressure data and detect leaks based on satellite images.	2,000	1,250	Incl in WA2	IFI grant and ApaVital budget	0
	WA5	Urban Drainage Master Plan	Policy	Drafting, tendering (of parts which shall be executed by third party), execution of an Urban Drainage Master Plan	1,500	N/A (only study)	700	IFI grant plus ApaVital contribution	1
	WA6	Feasibility Study for Re-use of treated effluent and sewage sludge from Dancu WWTP	Policy	Tendering, execution of a Feasibility Study that investigates the potential cost and benefits of re-use of treated effluent and sewage sludge from Dancu WWTP	300	N/A (only study)	100	IFI grant plus ApaVital contribution	0
	WA7	Extension of water supply system in Iași City Metropolitan Zone	Investment	IS-CL01 Zone North, Lot 1	8,700	N/A	N/A	Co-financed from the EU Cohesion Fund, state budget, local council budget and the Regional Operator Budget through the LIOP Sectoral Operational Program	20
				IS-CL01 Zone North, Lot 2	8,700	N/A	N/A		
				Sub-total	**17,400**				
	WA8	Extension of sewerage in Iași City Metropolitan Zone	Investment	IS-CL02 Zone South, Lot 1	15,900	N/A	N/A	Co-financed from the EU Cohesion Fund, state budget, local council budget and the Regional Operator Budget through the LIOP Sectoral Operational Program	10
				IS-CL02 Zone South, Lot 2	5,800	N/A	N/A		
				IS-CL02 Zone South, Lot 3	13,100	N/A	N/A		
				Sub-total	34,800				
				TOTAL FOR WATER AND WASTEWATER	**69,450**	**1,850**	**3,300**		**30 - 55**

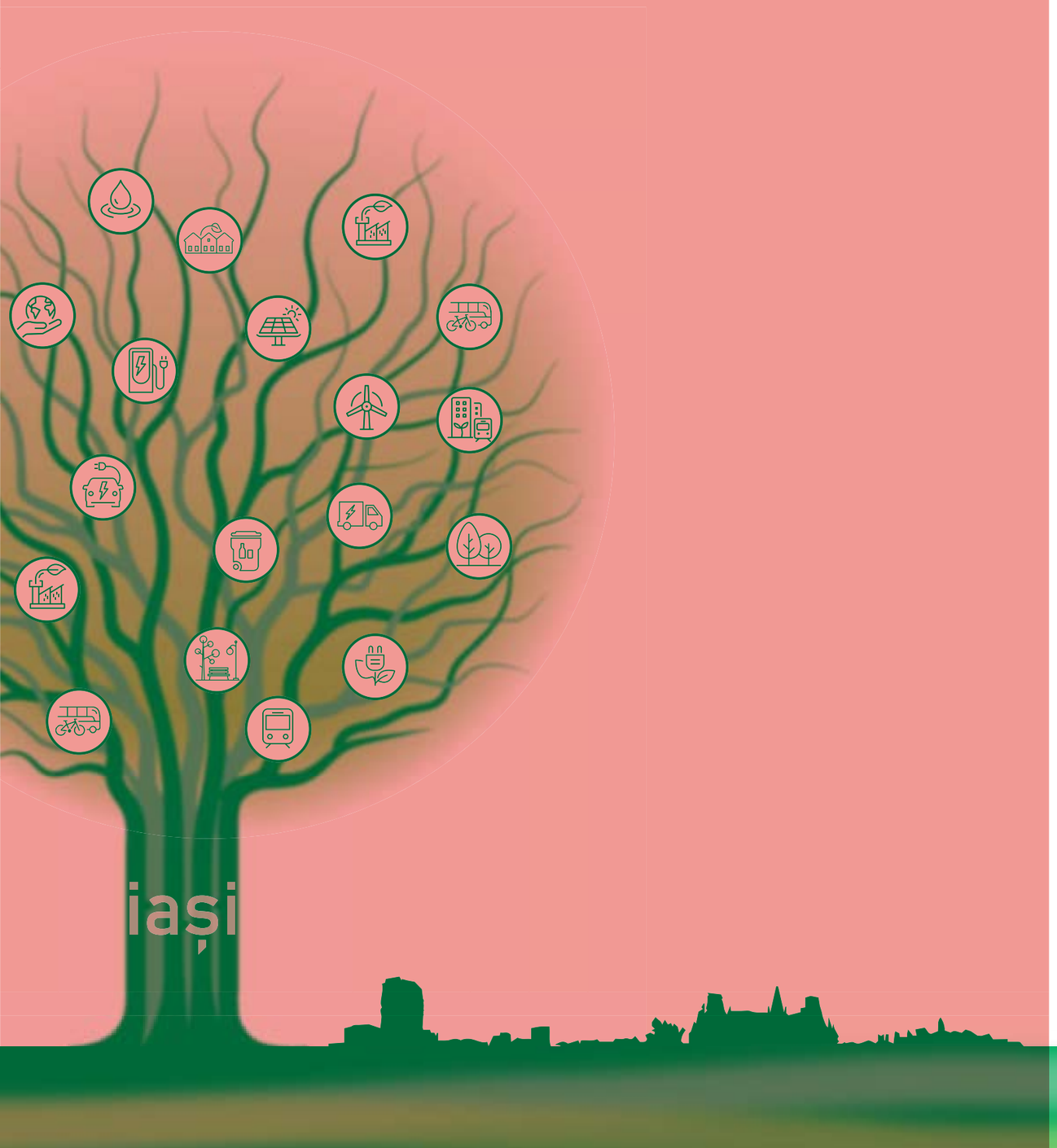
Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
SOLID WASTE	WS1	Capacity building and awareness raising on reuse and segregation of waste	Policy	The development of an effective education and information system based on EU experiences, framed to address citizens, businesses, companies, schools, social and youth organizations, etc	10	50	7,960	City budget, Salubris, recycling companies	10
	WS2	Green islands for segregated solid waste collection in the City (phase 1: 175 islands)	Investment	Provision of new public above-ground and underground digitized "green" islands for the selective collection of 5 fractions of solid waste throughout the city, financed through the National Resilience and Recovery Plan (PNRR/ 2022/C3/S/I.1.B)- Phase 1, 175 pieces.	3,500	1,250	160	NRRP	10
	WS3	Additional civic amenity sites	Investment	Construction and equipment of three additional medium to small public waste collection sites (surface ca. 3,000 m²), where citizens can drop their solid waste materials in appropriate containers on a voluntary basis.	2,200	1,500	1,056	NRRP	10
	WS4	Waste management centre	Investment	Construction and equipment of a large public waste management centre (capacity 10,000 tonne/year), including a material recovery facility (MRF) for source-separated dry recyclables and composting and construction/demolition waste processing facilities.	4,800	4,000	11,730	NRRP	10
	WS5	Digitization of waste collection operators	Investment	Installation of systems for weighing the actual amount of waste collected per vehicle, provision of advanced computer programmes for planning and optimizing collection routes and fleet management.	450	250	260	Salubris Budget	10
	WS6	Waste-to-energy project at the landfill site	Investment	Capture and valorisation of landfill gasses for production of electricity (local consumption at landfill site).	800	1,000	19,000	European funds	10
				TOTAL FOR SOLID WASTE MANAGEMENT	**11,760**	**8,050**	**40,166**		**60**
ADAPTATION & RESILIENCE	AD1	Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures	Policy	At least one awareness campaign/year shall be organized by Iași City Hall	50	N/A	N/A	City budget	10- 50
	AD2	Improve seismic resilience of buildings	Investment	First stage: assessing the status of buildings in Iași regarding the risk and resilience to earthquakes, as well as estimating the level of capital expenditures to improve the status	To be determined	4,500	N/A	To be determined	10
	AD3	Development of a Strategic Emergency Response Plan	Policy	An emergency response plan is a strategic document that lays out the series of steps the city should take during/ after a critical event, determined by nature or by man	15	N/A	N/A	City budget, regional development fund, PPP or through an EU-funded project	1
				TOTAL FOR ADAPTATION AND RESILINCE	**65**	**4,500**	**N/A**		**21 - 61**

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
ENERGY	EN1	Fuel switch at Holboca Combined Heat and Power Plant (CHPP)	Investment	Planned coal-to-gas fuel switch at Holboca CHPP will bring a threefold decrease of CO_2 emissions	96,000	4,700	198,033	Modernisation fund	0
	EN2	Make decarbonization a key objective of the city's sustainable development/environmental strategy	Policy	Update the environmental policy of the City Hall with a distinct decarbonization objective for all activities performed by the City	20	N/A	N/A	City budget	0
	EN3	Increase awareness of population regarding energy efficiency	Policy	Promotion materials disseminated in local media and during public gatherings, like sport races/contests, quizzes, etc	250	N/A	N/A	City budget	0
	EN4	Refurbishment of the DH network	Investment	Continuation of DH network refurbishment	7,562	N/A	7,270	PIOM	0
	EN5	Photovoltaic Park Tomesti – Iași ApaVital, 25 MW	Investment	Production of photovoltaic energy, with an installed capacity of 25 Mw, with an annual estimated production of energy of 30,000 Mwh	27,000	300	7,150	Own sources (partial)/ loan	5
				TOTAL FOR ENERGY	**130,832**	**5,000**	**212,453**		**5**
BUILDINGS	BU1	Improving the energy efficiency of private buildings	Investment	Energy audits and proposed specific actions shall be taken in order to have the best solutions for improving energy efficiency	5,200	N/A	235	NRRP	0
	BU2	Improving the energy efficiency of public buildings	Investment	Energy audits and proposed specific actions shall be taken in order to have the best solutions for improving energy efficiency. First targets include hospitals, schools, education centers	35,220	N/A	3,050	NRRP	0
	BU3	Programme for buildings energy profile, including smart meter installation	Investment	Improve / introduce monitoring the energy consumption of public buildings.	80	N/A	N/A	City budget, private sources	10
	BU4	Building nZEB plus housing for young people at risk	Investment	Building nZEB plus housing for young people at risk	14,900	N/A	225	NRRP	0
	BU5	Annual competition for Energy efficient buildings	Investment	An annual competition to be organised to incentivise building owners to implement new and innovative measures for energy efficiency in their building(s)	50	N/A	N/A	City budget, private sources	1
	BU6	Users education campaigns for optimising and monitoring energy consumption in buildings	Investment	Develop campaigns to influence the behaviour of users which can reduce up to 30% the energy consumption in buildings.	20	N/A	N/A	City budget, private sources	0
				TOTAL FOR BUILDINGS	**55,470**	**N/A**	**3,510**		**11**

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
LAND USE, GREEN SPACES, BIODIVERSITY AND NATURE BASED SOLUTIONS	LA1	Create a green corridors network connecting Centre – River Bahlui – Galata forest (35-50ha)	Investment	Create green corridors network connecting the City Centre, bank of the River Bahlui and Galata Forest, totalling up to 5-6 km (or more) of ecologically designed streets, promenades and green spaces	18,000	600	100	EU funds	12 - 20
	LA2	Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots (40-60ha)	Investment	A set a programmes that will focus on revitalisation, greening and beautification of small abandoned or degraded public spaces in Iași, including ones around apartments blocks, areas around water bodies such as CUG II lake shore, as well as planting vegetation in the parking lots.	25,000	300	80 - 120	EU funds	12 - 25
	LA3	Rehabilitation and modernisation of the leisure area CA Rosetti (1.79ha)	Investment	Beautification of the CA Rosetti recreation area, including the reconversion and re-functionalisation of 17,912 square meters (1.79ha) of unused land. 3 Mln. Already invested, final cost is expected to be higher (3.5-4 Mln)	4,000	600	4	EU funds	2 - 3
	LA4	Communal gardens at schools (2-7ha)	Investment	Facilitate the development of community gardens on school grounds.	2,000	100	4 - 14	EU or municipal funds	0
	LA5	Assessment of the city needs in extension of vegetation and development of city greening plan	Policy	The objective of the action is to assess the needs for extension of vegetation across the city	150	N/A	N/A	City budget	0
	LA6	Green Ambassadors of neighbourhoods – Citizens Cooperation Platform	Policy	The action will focus on initiation of the Citizens Cooperation Platform where Green Ambassadors of neighbourhoods selected by the residents will represent their interests in the decision and planning related to land use and green space development.	N/A	50	N/A	City budget	1
				TOTAL FOR LANDUSE, GREEN SPACES, BIODIVERSITY AND NATURE-BASED SOLUTIONS	**49,150**	**1,650**	**188 - 238**		**27 - 49**

Sector	Code	Action name	Action Type	Action Description	CAPEX (000's EUR) 5 years	OPEX (000's EUR) 5 years	CO_2 reduction tCO_2eq / year	Potential Source of Finance	New Jobs FTE
GOVERNANCE AND CAPACITY BUILDING	GV1	Setting-up communication framework with stakeholders	Policy	Maintaining communication with stakeholder group for consultation purposes.	375	N/A	N/A	City budget, non-refundable European funds	0
	GV2	Development of GESI (Gender Equality and Social Inclusion) Action Plan	Policy	Develop a GESI Action Plan for inclusion in the GCAP policy document to promote equality, equity and social and economic inclusion through all GCAP actions.	100	N/A	N/A	City budget, IFIs, non-refundable European funds	0
	GV3	Continuous professional development, capacity building of City Hall staff and HR policy for EBRD financed projects	Policy	Training City Hall staff for identifying new financing opportunities, developing project concepts, on-the job training for experienced employees while collaborating with external consultants and on-the-job trainings for young employees.	250	N/A	N/A	City budget, IFIs, non-refundable European funds	0
	GV4	Establishment of working group to support GCAP implementation	Policy	Ensuring equal access to information for all citizens and stakeholders in real time, enabling possibility to take part to the policy-making process and to facilitate implementation of measures adopted.	375	60	N/A	City budget	1 - 2
				TOTAL FOR GOVERNANCE AND CAPACITY BUILDING	**1,100**	**60**	**N/A**		**1 - 2**
SMART	SM1	Web application for updating KPIs	Investment	SMA 2.2: Web application for updating KPIs	250	350	N/A	City budget, European funds	2 - 3
	SM2	Real time information on air quality	Investment	The first step in creating an integrated SMART platform for Iași City	150	100	N/A	City budget, European funds	0
				TOTAL FOR SMART CITY DEVELOPMENT	**400**	**450**	**N/A**		**2 - 3**
				GRAND TOTAL FOR GCAP	**579,527**	**49,596**	**347,847 - 347,897**		**417 - 606**

Overview on GCAP Actions, financing sources and CO_2 emissions reduction, is provided in Executive Summary.



4.5. Transport and mobility actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
TR1: Extension of the coverage for the public transport system and renewal of the fleet	✓				
TR2: Increase availability. safety and security of non-motorised trips	✓				
TR3: Extension and modernisation of PT depots	✓				
TR4: Implementation of restrictive parking regulations	✓	✓			

PHOTO 37 PUBLIC TRANSPORT IN THE CITY OF IAȘI
SOURCE: CONSULTANT'S OWN COLLECTION

PHOTO 38-42

SOURCE:
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TR1 Extension of the coverage for the public transport system and renewal of the fleet

	Sector: Transport	**Supporting Strategic Objective(s) of:** TRA-SO1 Improve accessibility, safety and security of transport (supply-side measures to provide alternative to private cars)
Action Type: Investment	**Linked GCAP Actions:** EN2 Make decarbonisation a key objective of the city's sustainable development/environmental strategy, including incentivisation of the electrification of public transport and other public vehicles	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives** – all these initiatives / measures are included in the draft SUMP (soon to be approved by the City Council): - Procurement of 32 trams with 30m length (2023) - Procurement of 16 trams with 22m length (2021-2027) - Procurement of 20 electric buses with 12m length (scheduled to arrive by the end of 2022) - Procurement of 24 electric buses with 10m length (2023) - Extension of tramway infrastructure towards the western area of the city in order to improve accessibility to the western and commercial area – 3km / 12 tram stations - Extension of the tramway infrastructure in the Metropolitan Area towards Holboca – 8.5km	
Priority Environmental Challenges addressed: High levels of air pollution caused by motorised personal transport	**Supporting City (and or national) Policies and Plans:** Sustainable Urban Mobility Plan / Public Transport Development Plan for the City of Iași / Integrated Urban Development Strategy of Iași Municipality / Local Environment Action Plan (2019-2023) – county Iași / The National Strategy regarding Adaptation to Climate Change 2022 – 2030 / Improving Energy Efficiency in Iași by the World Bank / National Recovery and Resilience Plan / General Transport Master Plan of Romania / Fit for 55 Package / Sustainable and Smart Mobility Strategy	

Rationale and Justification for Action:
The proposed action reduces transport-related emissions by increasing the use of public transport and non-polluting fuel as well as contributing to the implementation of an efficient, sustainable, integrated and safe public transport system to support clean air and social inclusion – facilitated through: urban regeneration, intelligent transport systems and smart cities solutions including smart mobility.

Description of Action:
Continuous modernisation and greening of the public transport fleet through procurement of trams and electric buses. Development of intelligent transport hubs with real-time information for public transport users. Extension of the public transport system coverage across the city and the metropolitan area through the extension of tram lines and bus routes. Securing availability of public transport within walking distance from major residential, business and leisure areas.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Improved air quality and reduction in greenhouse gas emissions Improved accessibility of public transport to the whole population particularly benefitting those without access to personal transport, e.g. the poor and vulnerable	200-300 FTE drivers and in-system management	Infrastructure modernisation with an inclusive lens to ensure accessibility and safety for all Affordability and coverage with low-income/ marginalised groups considered Disaggregated mobility pattern data collection to guide future improvements in inclusivity Policies to promote an inclusive and supportive work environment	Smart ticketing systems, smart PT hubs, intelligent PT management systems Tranzy / 24 Pay mobile application for public transport (real-time updated information about lines, location of nearby stations, arrival time and optimal routes) Security and safety systems – video monitoring in PT stations and vehicles Intersections with adaptive traffic lights Passenger number counting technology Public transport traffic lights prioritisation system ITS to reduce traffic congestion at peak hours and minimise time spent in traffic

Implementation timeline: 2023-2027	**Action Owner and Implementing Agency:** Iași Public Transport Company / Iași City Hall (public passenger transport system department)
Indicative Project Costs: 16 trams with 22m length – approx. EUR 36 million 24 electric buses – approx. EUR 9.6 million 25 buses, including charging stations – approx. EUR 12 million Extension of Valea Lupului line – approx. EUR 26 million Extension of Holboca line-– approx. EUR 37 million Capital repairs Socola Overpass: EUR 9 million Extension Cerna bridge – EUR 6 million E ticketing system for public transport – EUR 3 million OPEX over 5 years: approx. EUR 25.036 million	**Other stakeholders and role:** Iași City Hall – Procurement Department for vehicle acquisition and for contracting tramway extension works

Financing mechanisms and sources:
Regional Operational Plan 2021-2027, National Recovery and Resilience Plan, city budget, other European funds, national funding, budget in partnership with County Council

Key Direct Benefits:
The public transportation system is not entirely accessible to all types of users. Infrastructure modernisation, with an inclusive lens, can ensure it is accessible to and safe for all genders, mobility levels, age groups, income levels, ethnicities, religions and sexual orientations. Low-income groups which don't have access to cars would have better access to public transport and be able to afford the tickets. The ticketing system has been recently upgraded and integrated and it provides a good level of coverage and affordability for the public transport system. Data collected on the mobility patterns of various groups (especially marginalised groups) will help to facilitate making the system more responsive to varying needs. Adoption of policies can foster an inclusive and a supportive work environment at Iași city level as well as enforcement of similar standards among municipal contractors

Key Indirect Benefits/Co-benefits:
Increased number of smart ticketing systems, smart PT hubs, intelligent PT management systems. For example, Tranzy is a mobile application for public transport providing real-time updated information about lines, location of nearby stations, arrival time, means of transport at the station, optimal routes depending on the chosen point of departure, distance to destination, vehicles and traffic alerts. It will also lead to information panels in the stations to display the arrival time of all public transport, information screens in the busses about stations location and next station as well as security and safety systems by video cameras installation in public transport / stations to prevent acts of violence, theft or destruction

Key Indicators & Metrics of success:
Improve the level of accessibility of central area / other residential areas by Public Transport by 15%

Measure Impact through (improving) **State and Pressure indicators:**

11. Transport modal share in commuting cars, motorcycles, taxi, bus, metro, tram, bicycle, pedestrian
11.4 Kilometres of road dedicated exclusively to public transit per 100,000 population
11.6 Share of population having access to public transport within 15min by foot
12.1 Travel speed of bus service on major thoroughfares daily average
13 Interruption of public transport systems in case of disaster
13.1 Efficiency of transport emergency systems in case of disaster

Estimated measurements of **GHG reductions:**
Increase of public transport coverage & public transport frequencies. 32830tCO_2 eq/year

Interoperable ticketing, payment systems & public transport pricing – 15400tCO_2 eq/year

Benefits in terms of climate change **adaptation & resilience:**
Cleaner air / energy and costs savings / Financial benefits through reduced operating costs that can support wider social and economic benefits

Quantitative benefits:
Energy or maintenance saving, efficiency gains, employment created

Qualitative benefits:
Cleaner air, quality of life benefits

TR2 Increase availability, safety and security of non-motorised trips

	Sector: Transport	**Supporting Strategic Objective(s) of:** TRA-SO1 Improve accessibility, safety and security of transport (supply-side measures to provide alternative to private cars)
Action Type: Investment	**Linked GCAP Actions:** TR4 Implementation of restrictive parking regulations EN2: Make decarbonisation a key objective of the city's sustainable development/environmental strategy	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives** - BUS-BIKE intermodal transport system and the expansion of the Velo City bike sharing system (2023) - Development of Car-Bike-Bus intermodal areas at Rond Canta/Rond Dacia, Virgil Sahleanu square, Rond Dancu / Calea Dacilor and Copu Roundabout - Pilot project – Pedestrianised Iași (Iași pietonal) – with development of "shared space" areas with regulations for prioritising alternative mobility - Intelligent municipal system for monitoring the bike lane network (bike counting, preferred routes, bike parking, traffic conflict areas, etc.) - Pilot project – 15" Min City – with mobility area with accessibility to all points of interest in less than 15 minutes - Modernisation of sidewalks and alleys in the Metropolitan Area communes - Increase the use of cycling for trips towards and from the Metropolitan Area - Development of shared spaces allowing road users to jointly decide how to utilise the space	
Priority Environmental Challenges addressed: Cleaner air Reduce GHG emissions	**Supporting City (and or national) Policies and Plans:** Sustainable Urban Mobility Plan / Public Transport Development Plan for the City of Iași / Integrated Urban Development Strategy of Iași Municipality / Local Environment Action Plan (2019-2023) – county Iași/ National Strategy regarding Adaptation to Climate Change 2022 – 2030 / Improving Energy Efficiency in Iași by the World Bank / National Recovery and Resilience Plan / General Transport Master Plan of Romania / Fit for 55 Package / Sustainable and Smart Mobility Strategy	
Rationale and Justification for Action: This action will lead to a reduction of transport-related emissions by increasing the use of non-motorised transport and will lead to various accompanying health benefits.		
Description of Action: The projects included in this action are foreseen to increase the use of safe and secure non-motorised transport modes through different types of intervention. An extension of specific infrastructure dedicated to bicycle and pedestrian trips will lead to increased accessibility and attractiveness of these modes of travel as well as an increase in safety and security through the implementation of intelligent transport systems. Solar PV for EV charging shall be included where relevant. Increasing charge points availability may be integrated with streetlighting retrofits. Streets and squares may be planned as shared spaces under certain conditions, allowing road users to jointly decide how to utilise the space. For it to be a safe and secure location, there has to be a balance between the number of bikes, pedestrians and cars.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Air quality improvement Improved public safety and public health benefits	100-200 FTEs mainly during construction phase No major employment to manage the enhanced non-motorised system	Safety rehabilitation efforts will take into account the varying needs of vulnerable groups and specifically address known limitations on mobility. Some (or most) of the crossroads or pedestrian areas are also not accessible to vulnerable users. Only a small number of streets are designed to be accessible to all users. Safety rehabilitation from an inclusive lens will ensure safety for all genders, abilities, age groups, income levels, ethnicities, religions and sexual orientations.	Intelligent pedestrian crossing

Implementation timeline: 2023-2027	**Action Owner and Implementing Agency:** Iași City Hall (public passenger transport system department)
Indicative Project Costs: - "Shared space" areas – EUR 15 million - BUS-BIKE intermodal transport system and Velo City – EUR 2.5 million - Increased use of cycling for trips to and from the Metropolitan Area and bicycle lanes – EUR 10 million - Modernisation of sidewalks and alleys in Metropolitan Area – EUR 17 million - Intelligent municipal system for monitoring the bike lane network – EUR 1 million - Pilot project – 15" Min City – EUR 2 million - Development of Car-Bike-Bus intermodal areas – EUR 200,000 each	**Other stakeholders and role:** Bicycle user groups and various associations; local community / resident groups.
Financing mechanisms and sources: Regional Operational Plan 2021-2027, National Recovery and Resilience Plan, city budget, other European funds, national funding., budget in partnership with County Council.	

Key Direct Benefits:

Increased cycling modal shares increase social opportunities and decrease noise and air pollution, providing the potential to create a cycling culture.

Increased walking and cycling journeys result in less driving, which lowers CO_2 emissions (and, by extension, climate-change impacts) and reduces other types of air pollution and noise pollution.

The affordable kind of mobility offered by NMT may be advantageous to some groups of persons with lower living means.

Key Indirect Benefits/Co-benefits:

In order to enhance quality of life, reduce the negative effects of motorised traffic and promote economic, social and cultural activities, the city's public streets and spaces must be improved. Reducing the number of cars on the road and reallocating road space to non-motorized travel would help to improve street efficiency and open more options to build additional and significantly greater facilities for people who utilise public transportation, bicycles and pedestrian walkways.

Comparing walking and bike riding versus driving a car, there are several advantages for communities, including health benefits and more opportunity for social engagement.

Increased use of local shops and services could result from increased walking and cycling, which would benefit the neighbourhood local economy.

Key Indicators & Metrics of success:

Increase the travel options by improving quality and connectivity to reliable public transport and active travel networks

Increase the levels of sustainable travel to all key destinations in the city, measured by an increase in the modal share of active transport modes by 5% by 2030

Measure Impact through (improving) **State and Pressure indicators:** 11 Transport modal share in commuting cars motorcycles taxi bus metro tram bicycle pedestrian 11.5 Kilometres of dedicated bicycle path per 100,000 population 12 Average travel speed on primary thoroughfares at peak hour 33.1 Average commuting distance 33.2 Average commuting time 1 Average annual concentration of PM2,5 1.1 Average annual concentration of PM10 6 Open green space area per capita	Estimated measurements of **GHG reductions:** Well-designed and operated non-motorised trip investments can yield significant CO_2 reductions. A 5% increase in walking share results in approximately 7% reduction in tCO_2. A 5% increase in cycling share results in approximately 4% reduction in tCO_2. Dedicated walking and cycling infrastructure & bike sharing schemes – 28,500tCO_2 eq/year.	Benefits in terms of climate change **adaptation & resilience**: Cleaner air / energy and costs savings / financial benefits through reduced operating costs that can support wider social and economic benefits

Quantitative benefits:	**Qualitative benefits:**
Energy or maintenance saving, fuel saving, efficiency gains, health spending reductions, employment created, reduced CO_2 emissions.	Access to open spaces, cleaner air, quality of life benefits

TR3 Extension and modernisation of Public Transport depots

	Sector: Transport	**Supporting Strategic Objective(s) of:** TRA-SO1 Improve accessibility, safety and security of transport (supply-side measures to provide alternative to private cars)
Action Type: Investment	**Linked GCAP Actions:** TR1 Extension of the coverage for the public transport system and renewal of the fleet EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy including incentivisation of the electrification of public transport and other public vehicles	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives** All these initiatives / measures are included in the draft SUMP (soon to be approved by the City Council): The City of Iași has acquired 48 new trams, 24 electric buses and they intend to revive the trolleybus lines; therefore, the depot's modernisation and expansion represent a logical outcome. The public transportation depots will undergo two significant interventions, according to the City of Iași SUMP: (i) expansion and modernisation of Iași's depots, including the Dacia depot and (ii) the transfer of depots for trams, buses and trolleybuses from central locations to the site of the former Fortus industrial platforms. The Dacia Depot will be modernised and automated to accommodate electric buses, trolleybuses and trams. The bridge over the Rediu stream, Strămoșilor street and the Dacia roundabout in the depot access area will also be renovated. The street pattern at the depot's entrance roundabout will also be modernised.	
Priority Environmental Challenges addressed: High levels of pollution that lead to the absolute need to increase the number of PT trips	**Supporting City (and or national) Policies and Plans:** Sustainable Urban Mobility Plan / Public Transport Development Plan for the City of Iași / Integrated Urban Development Strategy of Iași Municipality / Local Environment Action Plan (2019-2023)- county Iași / National Strategy regarding Adaptation to Climate Change 2022- 2030 / Improving Energy Efficiency in Iași by the World Bank / National Recovery and Resilience Plan / General Transport Master Plan of Romania / Fit for 55 Package / Sustainable and Smart Mobility Strategy	
Rationale and Justification for Action: Reduce transport related emissions by increasing the use of public transport and non-polluting fuel and Implementation of an efficient, sustainable, integrated and safe transport system to support clean air and social inclusion – facilitated through 4 concepts: urban regeneration, intelligent transport systems, smart cities solutions including smart mobility.		
Description of Action: It is necessary to gradually implement a package of measures that aim to: offer an alternative to car-use (this was part of previous PT investments and can help to reduce of traffic congestion and improve road infrastructure) and impose restrictions to cars (speed limits and the implementation of a parking management policy). The existing public transportation depots will undergo expansion and modernisation. The Dacia depot will undergo expansion and modernisation and the improvements will also involve the transfer of depots for trams, buses and trolleybuses from central locations to the site of the former Fortus industrial platforms. The Dacia Depot will be modernised and automated to accommodate electric buses, trolleybuses and trams. The bridge over the Rediu stream, Strămoșilor street and the Dacia roundabout at the depot access area will also be renovated. The street pattern at the depot's entrance roundabout will also be modernised.		

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Energy and efficiency savings Reduced CO_2 emissions	Up to 500 FTEs during construction phase and up to 50 FTEs in operation of expanded and improved depots and vehicle fleet.	Collection of gender-disaggregated employment data and adoption of policies can foster an inclusive and a supportive work environment at Iași City level as well as enforcement of similar standards among municipal contractors.	Installing charging stations for electric buses

Implementation timeline: 2023-2027	**Action Owner and Implementing Agency:** IașiPublic Transport Company/ Iași City Hall

Indicative Project Costs: EUR 74 million OPEX: EUR 3 million	**Other stakeholders and role:** The Ministry for Development, Public Works and Administration – operator of Regional Operational Plan Designers / planners and executors of the work
Financing mechanisms and sources: EBRD, Regional Operational Plan 2021-2027, other sources	
Key Direct Benefits: The project improves the effectiveness of the public transportation system, which has a favourable effect on indices for sustainable urban mobility	
Key Indirect Benefits/Co-benefits: The obvious direct benefits are on supporting better public transport fleet maintenance. However, there are some immediate advantages to the facility's development and better performance, such as the potential installation of PV panels, increases in building efficiency and overall advancements in the site's environmental and OHS management. Additionally, the site should operate more efficiently and cost-effectively.	
Key Indicators & Metrics of success: Improve the level of accessibility of central area / other residential areas by public transport by 15%	
Measure Impact through (improving) **State and Pressure indicators:** 11. Transport modal share in commuting cars, motorcycles, taxi, bus, metro, tram, bicycle, pedestrian 11.4 Kilometres of road dedicated exclusively to public transit per 100,000 population 11.6 Share of population having access to public transport within 15min by foot 12.1 Travel speed of bus service on major thoroughfares daily average 13 Interruption of public transport systems in case of disaster 13.1 Efficiency of transport emergency systems in case of disaster	Estimated measurements of **GHG reductions:** By building a new depot the emissions instigated from the total heating demand can be reduced by 50% and the total emissions can be reduced by 25%. Changing the construction materials – the windows, doors, the insulation – will affect the energy performance of the building and the environmental impact. Estimated CO_2 reduction: 11,500 tCO_2eq/year
Quantitative benefits: Energy or maintenance saving, efficiency gains, health spending reductions, employment created	**Qualitative benefits:** Access to open spaces, cleaner air, quality of life benefits

Benefits in terms of climate change **adaptation & resilience:**
Cleaner air / energy and costs savings / financial benefits through reduced operating costs that can support wider social and economic benefits

TR 4 Implementation of restrictive parking regulations

	Sector: Transport	**Supporting Strategic Objective(s) of:** TRA-SO2 Promote mobility behaviour change (demand-side measures to influence travel behaviour)
Action Type: Policy Action	**Linked GCAP Actions**: EN2 – Make decarbonization a key objective of the city's sustainable development/ environmental strategy with contributing tasks of road-user charging and regulation of freight access	
Policy/Investment Action Classification: Policy Action	**Existing Linked Activities/Initiatives:** - Intelligent system for traffic calming and increase of safety (2021-2027) - Integrated municipal management system of public and residence parking lots (2021-2027) - Reorganisation of collective parking lots in the central area (2021-2027) - The development of green underground parking lots and eco-parking with zero carbon emissions (2021-2027) - Setting up Park & Ride systems to promote intermodal transport solutions (2021-2027) - E-Move- Slow/fast charging stations for electric vehicles	
Priority Environmental Challenges addressed: Open space and biodiversity losses caused by the construction of parking lots GHG emissions and air pollutants occurring while cars are cruising for parking	**Supporting City (and or national) Policies and Plans**: Sustainable Urban Mobility Plan / Integrated Urban Development Strategy of Iași Municipality / Local Environment Action Plan (2019-2023) – county Iași / National Strategy regarding Adaptation to Climate Change 2022 – 2030 / Improving Energy Efficiency in Iași by the World Bank / National Recovery and Resilience Plan / General Transport Master Plan o f Romania / Fit for 55 Package / Sustainable and Smart Mobility Strategy	

Rationale and Justification for Action:
Reduce transport-related emissions by increasing the use of public transport and non-polluting fuel as well as by implementing an efficient, sustainable, integrated and safe transport system to support clean air and social inclusion – facilitated through: urban regeneration, intelligent transport systems, smart cities solutions including smart mobility.

Description of Action:
Implementation of an efficient and integrated parking policy and projects focusing on interventions for: (i) the implementation of measures to regulate travel by personal vehicle, including to discourage its use and facilitating the shift in travel behaviour towards alternative travel modes (public and non-motorised transport – e.g Park & Ride equipment) and (ii) the development of parking infrastructure and the implementation of parking management, to increase the efficiency of use and to ensure compliance with the municipal parking regulations.; The projects will include an extension of video-monitoring, implementation of a smart parking system, complex management of parking places and payments as well as corrections in case of misuse. The Master Plan is finalised and discussions are organised for starting implementation.

The Action also involves implementation support to the current legislation, which states that residential and non-residential buildings with more than 10 parking spaces and that are new / will undergo major renovation works will have to have infrastructure for the installation of electric vehicle charging stations

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Energy and efficiency savings Reduced CO_2 emissions Public health benefits Enhanced municipal revenues	80-100 FTEs- mainly during construction and installation phases Limited employment opportunities once system is installed.	Inclusive parking areas with consideration for safety and accessibility Collection of gender- and disability-disaggregated data and integration of inclusive planning processes to address the parking needs of vulnerable groups Collection of gender-disaggregated employment data and adoption of policies can foster an inclusive and a supportive work environment at Iași City level as well as enforcement of similar standards among municipal contractors.	Application for finding the closest free parking space to a specific location Application that notifies users when their parking space payments are about to expire and shows how much time is left Parking metres that accept credit cards payment (contactless) Implementation of SMS or other specialised apps for payments Application that restricts access to particular car types based on intelligent pollution level recognition
Implementation timeline: 2023-2027	**Action Owner and Implementing Agency**: Iași City Hall (parking management department)		

Indicative Project Costs:
Approx. EUR 1 million

OPEX: N/A

Other stakeholders and role:
Private parking operators

Financing mechanisms and sources:
City budget

Key Direct Benefits:
Inclusive parking areas, with more parking spots for persons with disabilities and better signage and enforcement against illegal parking. Gender- and disability-sensitive planning processes incorporated in the City of Iași's approach and increased collection of gender- and disability-disaggregated data will help address the parking needs of vulnerable groups. The collection of gender-disaggregated employment data on those employed by the parking enforcement body (gender disaggregation of workforce, pay distribution, percentage of women in leadership roles, etc.) is also important for this. Adoption of policies can promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.

Key Indirect Benefits/Co-benefits:
Smart parking systems
On-street and underground smart enforcement systems

Key Indicators & Metrics of success:
Number of charged off/on-street parking spaces
Estimation of the reclaimed space from parking and motorised traffic (5%)
Percentage of smart parking spaces (75%)

Measure Impact through (improving) **State and Pressure indicators:**

11. Transport modal share in commuting cars, motorcycles, taxi, bus, metro, tram, bicycle, pedestrian

11.2 Motorisation rate

11.3 Average number of vehicles cars and motorbikes per household

1 Average annual concentration of PM2.5

1.1 Average annual concentration of PM10

Estimated measurements of **GHG reductions**:
Parking management – 28,000tCO_2eq/year

Benefits in terms of climate change **adaptation & resilience**:
The main benefit of this action consists of the demotivation to use private cars. This represents a lead factor that facilitates an increased modal shift towards alternative modes of transport with benefits in terms of air quality, GHG emissions and economic growth.

Quantitative benefits:
Energy or maintenance saving, efficiency gains, health spending reductions, employment created

Qualitative benefits:
Access to open spaces, cleaner air, quality of life benefits, improved livability

4.6. Land use, green spaces, biodiversity and nature-based solutions actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
LA1: Create a green corridors network connecting Centre – River Bahlui – Galata Forest (35-50ha)	✓	✓		✓	
LA2: Green oasis – Reducing heat island effect by creating green oasis in residential neighborhoods. Parks around water bodies and small public spaces. And greening parking lots (40-60ha)	✓	✓		✓	✓
LA3: Rehabilitation and modernisation of the leisure area CA Rosetti (1.79ha)	✓	✓		✓	
LA4: Communal gardens at schools (2-7ha)		✓		✓	
LA5: Assessment of the city needs in extension of vegetation and development of city greening plan	✓	✓		✓	
LA6: Green Ambassadors of neighbourhoods – Citizens Cooperation Platform	✓	✓		✓	

PHOTO 43-44

LA1 Create a green corridors network connecting Centre – River Bahlui – Galata forest

	Sectors: Land Use and Green Spaces Biodiversity and Nature-Based Solutions Adaptation and Resilience	**Supporting Strategic Objective(s) of:** LAN-SO3 Identifying deficient areas and carrying out work for extension of vegetation-covered areas BIO-SO1 Supporting biodiversity in the city ADA-SO2 Integrate resilience into sectorial investments addressing environmental challenges
Action Type: Investment	**Linked GCAP Actions:** LA2 Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots (40-60ha) LA5 Assessment of the city needs in extension of vegetation and development of city greening plan LA6: Green Ambassadors of neighbourhoods – Citizens Cooperation Platform	
Policy/Investment Action Classification: Policy action (strategy/plan) and investment	**Existing Linked Activities/Initiatives**: Plan Actiune Oras Verde Iași ("Iași- Green City" Action Plan) (PAOV) has a programme for the development of small green spaces (squares/gardens) in the central area	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution Heat island effect Flood control Biodiversity loss	**Supporting City (and or national) Policies and Plans:** The Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU)	
Rationale and Justification for Action: Increase quality green space in urban fabric, create and protect green space system to support clean air and social inclusion – facilitated through: urban regeneration, better livability and increasing biodiversity by adopting nature-based solutions		
Description of Action: Iași registers a high degree of green space fragmentation in the former workers' neighbourhoods and partially in the central areas. The maintenance of green spaces varies considerably across the city. In addition, Iași appears to have many "hard surfaces" (paved spaces) causing heat island effect that is expected to intensify over the coming years. In addition, excess surface water runoff from sealed surface areas overloads the combined sewer and wastewater treatment system, leading to foul water overflows and increased costs for its maintenance. All these can be addressed by the creation of a network of green corridors. Green corridors represent linear natural infrastructure, such as trees and plants, that link up other green and open spaces to form a green urban network. Namely, this would be a green corridors network connecting the **City Centre, bank of the River Bahlui and Galata Forest, totalling up to 5-6km (or more) of ecologically designed streets, promenades and green spaces**. Furthermore, the green corridor can also incorporate nature-based solutions for the decentralised ecological rainwater drain system known as DrainGarden® which also retains water in soil thus reduces the need for irrigation during hot and dry periods.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Non-motorised urban mobility Reduction in greenhouse gas emissions Reduced run-off reducing incidence of drain and sewer overflows	12-20 FTE jobs (long-term) can be created at the municipal park management services to maintain additionalgreen spaces in the city[26]	Online and in-person consultations with local communities, which are accessible to vulnerable groups, to ensure all groups' needs are addressed in green spaces design Inclusive green street design, including accessibility for persons with limited mobility, mothers/ parents with kids, safety and lighting features and consideration of all age groups Partnership with community (women, youth, persons with disabilities-led) organisations to employ vulnerable groups in maintenance	No SMART/digital aspects are envisaged in this action. However, all additional green spaces will need to be monitored for urban statistics. The collected data can be used in digital tools supporting management of green spaces of the city. See example of the EU project digital product "GreenSpaces" (www.r3gis.com) that can be deployed to monitor, engage and manage green urban spaces.

26 Based on the data from the report "The economic impact of local parks" of the National Recreation and Park Association, www.nrpa.org

Implementation timeline: 36 months; 2023-2026	**Action Owner and Implementing Agency:** Iași City Hall, water authorities. administration of forest authorities, monasteries.
Indicative Project Costs: CAPEX: ca EUR 15-18 million. Note: Depending on the dimension and the accessibility of the site, the absolute investment costs for implementing the eco-street / DrainGarden® concept can vary from case to case. The cost of the substrate for one cubic metre is about EUR 100. Depending on the choice of plants, the cultivation cost ranges from EUR 2/m for seeding to several thousand EUR/m for planting large woody perennial plants. OPEX: ca. EUR 80-120k/year for 35-50ha – est. EUR 2k per ha)[27]	**Other stakeholders and role:** Environmental Protection Agency of Iași (APM Iași), specialised sustainable urban garden design companies, urban development specialists
Financing mechanisms and sources: City budget. European regional development funding schemes	
Key Direct Benefits: This network would provide ecological services, such as habitats and resources for urban wildlife. It will also provide services to urban populations such as mobility networks and access to green spaces through the provision of sustainable and active transport routes that link transport with mixed land use (residential, commercial, education, recreation, etc.) and open spaces. Mothers/parents and kids are among key beneficiaries of green spaces. Online and in-person consultations with local communities, which are accessible to vulnerable groups, can ensure all groups' needs are addressed in green space design. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations can lead to increased employment of vulnerable groups in maintenance.	
Key Indirect Benefits/Co-benefits: Improved air quality Reduced heat island effect Attractiveness of the neighbourhood Higher satisfaction of local residents Better and greener mobility	
Key Indicators & Metrics of success: Increase of total green space area in Iași (currently 696 ha) by 35-50ha Up to 10% increase of the urban green space per inhabitant; sqm per inhabitant increases from the current 20 sqm (min 26 sqm required by national and EU regulation) 8-10% increase of urban population residing within 300m to green spaces (WHO recommendation)	
Measure Impact through (improving) **State and Pressure indicators:** 6 Open green space area per capita 6.1 Share of green space areas within urban limits 6.2 Share of population living within 300m of open green space of at least 0.5ha	Estimated measurements of **GHG reductions:** 5-6km of green corridors create around 35-50ha of green spaces with a diverse vegetation. This translates into sequestration of up to 100tCO_2/year and 300-400kg of PM10/year (2tCO_2/ha/year and 8kg PM/ha/year, based on estimates from a study on urban gardens in Turin)	Benefits in terms of climate change **adaptation & resilience:** Reduced heat island effect in summer, flood management solutions
Quantitative benefits: Reduced need for air conditioning and for health spending	**Qualitative benefits:** Access to open spaces, cleaner air, quality of life benefits, improved livability	

27 https://www.sciencedirect.com/science/article/pii/S1877705814000411?via%3Dihub

LA2: Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots

	Sectors: Land Use and Green Spaces Biodiversity and Nature-Based Solutions Adaptation and Resilience	**Supporting Strategic Objective(s) of:** LAN-OS2: Revitalisation of abandoned, degraded and small public spaces LAN-OS3: Identifying deficient areas and carrying out work for extension of vegetation-covered areas BIO-OS1: Supporting biodiversity in the city ADA-OS2: Integrate resilience into sectoral investments addressing environmental challenges
Action Type: Investment	**Linked GCAP Actions:** LA1 Create a green corridors network connecting Centre – River Bahlui – Galata forest (35-50ha) LA5 Assessment of the city needs in extension of vegetation and development of city greening plan LA6 Green Ambassadors of neighbourhoods – Citizens Cooperation Platform AD3 Development of a Strategic Emergency Response Plan TR4 Implementation of restrictive parking regulations	
Policy/Investment Action Classification: Policy action (strategy/plan) and investment	**Existing Linked Activities/Initiatives**: Several relevant initiatives identified under the Plan Actiune Oras Verde Iași (“Iași- Green City” Action Plan) (PAOV) prepared by the city.	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution	**Supporting City (and or national) Policies and Plans:** The Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU)	
Rationale and Justification for Action: Increase quality green space in urban fabric, create and protect green space system to support clean air and social inclusion – facilitated through: urban regeneration, better livability and increasing biodiversity by adopting nature-based solutions		
Description of Action: There is a lack of public spaces accessible for all residents in Iași, while there are many plots not maintained, abandoned or used as parking spaces. At the same time, air pollution and heat incidences create a need for more green spaces in every district of the city. To increase the quality of living and the wellbeing of citizens, it is proposed to set up a programme that will focus on revitalisation, greening and beautification of small abandoned or degraded public spaces in Iași, including those around apartments blocks, areas around water bodies such as the CUG II lake shore as well as planting vegetation in the parking lots. Focus will be on creating urban gardens on small or medium-sized plots (1-3ha) especially in collective housing areas where the green space between them is used as a parking lot. Rearranging the parking lots in a systemised way- combined with restrictive parking regulations (TR4)- shall reduce the pressure of parking on green spaces. Remaining parking lots will be greened by planting trees to offer shade and prevent overheating of the spaces in summer. Undervalued and not maintained small and medium scale green areas in the city will be another focus of the programme and will be converted into public parks. The proposed action will result in increasing the green space in Iași up to 40-60ha.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Enhanced biodiversity Physical and mental health benefits	15-25 FTE jobs (long-term) can be created at the municipal park management services to maintain additional green spaces in the city	Online and in-person consultations with local communities, which are accessible to vulnerable groups, to ensure all groups’ needs are addressed in green spaces design Inclusive green space design, including accessibility for persons with limited mobility, mothers/ parents with kids, safety and lighting features and consideration of all age groups Partnership with community (women, youth, persons with disabilities-led) organisations to employ vulnerable groups in maintenance	No SMART/digital aspects are envisaged in this action. However, all additional green spaces will need to be monitored for urban statistics. The collected data can be used in digital tools supporting management of green spaces of the city. See example of the EU project digital product “GreenSpaces” (www.r3gis.com) that can be deployed to monitor, engage and manage green urban spaces
Implementation timeline: 48 months; 2023-2027	**Action Owner and Implementing Agency:** Iași City Hall		

Indicative Project Costs:
The budget of the ongoing three initiatives under PAOV are EUR 2.3 million, EUR 0.75 million and EUR 4.6 million. The proposed initiative can cost up to EUR 20-25 million depending on the scale, deployed approaches and complexity of measures.

CAPEX: c.a. EUR 25million

OPEX: ca. EUR 40-60k/year for 40-60ha – estimate EUR 1k per ha)

Other stakeholders and role:
Environmental Protection Agency of Iași (APM Iași), specialised sustainable urban garden design companies, urban development specialists

Financing mechanisms and sources:
City budget. European regional development funding schemes

Key Direct Benefits:
Mothers/parents and children are among key beneficiaries of green spaces. Online and in-person consultations with local communities, which are accessible to vulnerable groups, can ensure all groups' needs are addressed in green space design. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations can lead to increased employment of vulnerable groups in maintenance.

Key Indirect Benefits/Co-benefits:
Improved air quality

Reduced heat island effect

Attractiveness of the neighbourhood

Higher satisfaction of local residents

Key Indicators & Metrics of success:
Increase of total green space area in Iași (currently 696ha) by 40-60ha

Up to 10% increase of the urban green space per inhabitant; sqm per inhabitant increases from the current 20sqm (min 26sqm required by national and EU regulations)

7-12% % of urban populations residing within 300m to green spaces (WHO recommendation)

Measure Impact through (improving) **State and Pressure indicators:**
6 Open green space area per capita

6.1 Share of green space areas within urban limits

6.2 Share of population living within 300m of open green space of at least 0.5ha

Estimated measurements of **GHG reductions:**
40-60ha of green spaces with a diverse vegetation can offer sequestration of 80-120tCO_2/year and 320-480kg of PM10/year (2tCO_2/ha/year and 8kg PM/ha/year – based on estimates from a study on urban gardens in Turin)

Benefits in terms of climate change **adaptation & resilience:**
Reduced heat island effect in summer

Quantitative benefits:
Reduced need for air-conditioning and for health spending

Qualitative benefits:
Access to open spaces, cleaner air, quality of life benefits, improved livability

LA3 Rehabilitation and modernisation of the leisure area CA Rosetti

	Sectors: Land Use and Green Spaces	**Supporting Strategic Objective(s) of:** LAN-SO2 Revitalisation of abandoned, degraded and small public spaces
Action Type: Investment	**Linked GCAP Actions:** LA2 Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots (40-60ha) LA5 Assessment of the city needs in extension of vegetation and development of city greening plan	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: The same initiative is included in the Plan Actiune Oras Verde Iași (“Iași- Green City” Action Plan) (PAOV)	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution	**Supporting City (and or national) Policies and Plans:** The Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU)	
Rationale and Justification for Action: Increase quality green space in urban fabric, create and protect green space system to support clean air and social inclusion – facilitated through: urban regeneration, better livability and increasing biodiversity by adopting nature-based solutions		
Description of Action: Involves the beautification of the CA Rosetti recreation area, including the reconversion and re-functionalisation of 17,912 square meters (1.79ha) of unused land. The buildings in an advanced state of decay existing on the respective land and which do not belong to the national cultural heritage will be demolished. Access roads will be modernised and turned into pedestrian walkways, while green spaces will be laid out (by clearing the existing vegetation, modelling the land, planting with perennial plants and turfing of surfaces, including planting of trees and shrubs). Also, recreation facilities will be created on the landscaped grounds (special areas for practicing sports, playgrounds for children). A Wi-Fi network with public access will be functional. Video surveillance systems and furniture elements (benches, trash cans, ecological toilets, parking racks for bicycles, etc.) will be installed. Urban connections will be made to public utility networks as well as irrigation and lighting systems for the landscaped spaces.		
	Job Creation Potential	**Gender and Social Inclusion Aspects** / **SMART Aspects**
Cross-Cutting Themes Enhanced biodiversity Physical and mental health benefits	4 FTE jobs (long-term) can be created at the municipal park management services to maintain this additional green space	Online and in-person consultations with local communities, which are accessible to vulnerable groups, to ensure all groups’ needs are addressed in green spaces design Inclusive green space design, including accessibility for persons with limited mobility, mothers/ parents with kids, safety and lighting features and consideration of all age groups Partnership with community (women, youth, persons with disabilities-led) organisations to employ vulnerable groups in maintenance No SMART/digital aspects are envisaged in this action. However, all additional green spaces will need to be monitored for urban statistics. The collected data can be used in digital tools supporting management of green spaces of the city. See example of the EU project digital product “GreenSpaces” (www.r3gis.com) that can be deployed to monitor, engage and manage green urban spaces
Implementation timeline: 36 months; 2019 – 2022	**Action Owner and Implementing Agency:** Iași City Hall	

Indicative Project Costs:
CAPEX: EUR 4 million (but the final cost may be higher)

OPEX: ca. EUR 80-120k/year for 40-60h – (est. EUR 2k per ha)

Other stakeholders and role:
Environmental Protection Agency of Iași (APM Iași), specialised sustainable urban garden design companies, urban development specialists

Financing mechanisms and sources:
City budget. European regional development funding schemes

Key Direct Benefits:
Online and in-person consultations with local communities, which are accessible to vulnerable groups, can ensure all groups' needs are addressed in green space design. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations can lead to increased employment of vulnerable groups in maintenance.

Key Indirect Benefits/Co-benefits:
Improved air quality

Reduced heat island effect

Attractiveness of the neighbourhood

Higher satisfaction of local residents

Key Indicators & Metrics of success:
Increase of total green area in Iași by 1.79ha (currently 696ha)

<1% increase of the urban green space per inhabitant; sqm per inhabitant increases from the current 20sqm (min 26sqm required by national and EU regulations)

<1% increase of the urban population residing within 300m to green spaces (WHO recommendation)

Measure Impact through (improving) **State and Pressure indicators:**
6 Open green space area per capita

6.1 Share of green space areas within urban limits

6.2 Share of population living within 300m of open green space of at least 0.5ha

Estimated measurements of **GHG reductions:**
1.79ha of green spaces with a diverse vegetation can offer sequestration of around 3.6tCO_2/year and 14kg of PM10/year (2tCO_2/ha/year and 8kg PM/ha/year – based on estimates from a study on urban gardens in Turin)

Benefits in terms of climate change **adaptation & resilience:**
Reduced heat island effect in summer

Quantitative benefits:
N/A

Qualitative benefits:
Access to open spaces, cleaner air, quality of life benefits, improved livability

LA4 Communal gardens at schools (2-7ha)

	Sectors: Land Use and Green Spaces	**Supporting Strategic Objective(s) of:** LAN-OS3 Identifying deficient areas and carrying out work for extension of vegetation-covered areas
Action Type: Investment	**Linked GCAP Actions:** LA3 above (Green oasis)	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Several relevant initiatives under the Plan Actiune Oras Verde Iași (“Iași- Green City” Action Plan) (PAOV) prepared by the city	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution	**Supporting City (and or national) Policies and Plans:** The Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU)	

Rationale and Justification for Action:
Facilitate a green space system to foster expansion of greening and support ecological education among children and increase awareness among parents.

Description of Action:
A community garden is a garden that is planned, planted, maintained and sustained by individuals within a community. The “community” may be defined by physical location, such as a neighbourhood or a city, or as individuals linked by a common organisation or cause, such as a school. Iași stakeholders suggested to facilitate the development of community gardens on school grounds. This can enrich academic learning, nurture relationships and create a positive neighbourhood environment that enhances students’ lives outside of school. It is important that the school-based community gardening involves more than just school children and teachers, but also local residents and parents. They should be actively engaged in the organisation, planning, decision making and day-to-day maintenance of the garden. The idea of ‘many hands’ means more people to maintain the garden which is a big help when school is out of session. Depending on the engagement, the number of schools setting up community gardens can reach 10-15 with the garden sizes of 100-5000sqm.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes N/A	No permanent jobs to be created, rather, there will be a reliance on voluntary inputs of citizens (parents, pupils) in maintenance of the school-based communal gardens	Online and in-person consultations with local communities, which are accessible to vulnerable groups, to ensure all groups’ needs are addressed in green space design Inclusive green space design, including accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups	No SMART/Digital aspects assumed in this action. However, all additional green spaces will need to be monitored for urban statistics. The collected data can be used in digital tools supporting management of green spaces of the city. See example of the EU project digital product “GreenSpaces” (www.r3gis.com) that can be deployed to monitor, engage and manage green urban spaces

Implementation timeline: 24 months; 2023 – 2024	**Action Owner and Implementing Agency:** Iași City Hall, primary and secondary schools of Iași
Indicative Project Costs: CAPEX: ca. Total EUR 1-2 million OPEX: ca. EUR 15-20k/year	**Other stakeholders and role:** Environmental Protection Agency of Iași (APM Iași), agriculture and urban garden experts, local environmental NGOs

Financing mechanisms and sources:
City budget. European regional development funding schemes

Key Direct Benefits:
In addition to the environmental benefits (e.g. cleaner air, reducing stormwater runoff, creating habitats for pollinators and other wildlife), this initiative is expected to bring social, economic and educational benefits. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations will be strengthened.

Key Indirect Benefits/Co-benefits:
Improved air quality

Higher attractiveness of the neighbourhood

Higher satisfaction of local residents

Intergenerational connections through positive interactions; adults and kids will develop mutual respect

Key Indicators & Metrics of success:
Number of schools involved in the school garden initiative

2-7ha increase of total green area in Iași (currently 696ha)

<1% increase of the urban green space per inhabitant; sqm per inhabitant increases from the current 20 sqm (min 26sqm required by National and EU regulations)

<1% increase of the % of urban population residing within 300 m to green spaces (WHO recommendation)

Measure Impact through (improving) **State and Pressure indicators:**

6 Open green space area per capita

6.1 Share of green space areas within urban limits

6.2 Share of population living within 300m of open green space of at least 0.5ha

Estimated measurements of **GHG reductions:**
2-7ha of green spaces with a diverse vegetation can offer sequestration of around 4-14tCO_2/year and 16-56kg of PM10/year (2tCO_2/ha/year and8kg PM/ha/year – based on estimates from a study on urban gardens in Turin)

Benefits in terms of climate change **adaptation & resilience:**
Reduced “heat island’ effect in summer

Quantitative benefits:
Reduced need for air-conditioning and for health spending

Qualitative benefits:
Access to open spaces, cleaner air, quality of life benefits, improved livability

LA5 Assessment of the city needs in extension of vegetation and development of city greening plan

	Sectors: Land Use and Green Spaces Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** LAN-OS3 Identifying deficient areas and carrying out work for extension of vegetation-covered areas
Action Type: Governance	**Linked GCAP Actions:** All LA actions	
Policy/Investment Action Classification: Planning	**Existing Linked Activities/Initiatives**: Relevant actions proposed in the Plan Actiune Oras Verde Iași ("Iași- Green City" Action Plan) (PAOV)	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution	**Supporting City (and or national) Policies and Plans:** Plan Actiune Oras Verde Iași ("Iași- Green City" Action Plan) (PAOV) / Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU	

Rationale and Justification for Action:
Increase quality green space in urban fabric, create and protect green space system to support clean air and social inclusion – facilitated through: urban regeneration, better livability and increasing biodiversity by adopting nature-based solutions

Description of Action:
The objective of the action is to assess the needs for extension of vegetation across the city in light of: (i) assisting the city in adapting to climate change, including addressing heat island, heatwave and flooding incidences; (ii) improving attractiveness of the city and comfort for residents and visitors; and (iii) contributing to resolving air pollution issues. This action will include the creation of a city map with indications of exiting areas in need of greening and the creation of a long-term plan on greening and maintaining of greening areas. The city level planning should be building on the planning for each neighbourhood identified as targets for interventions. Participation of local business actors (e.g. financial and in-kind support) and citizens (e.g. consultation and in-kind help) will be important. Academic partners can help with assessment, GIS mapping and expert advice on vegetation selection and maintenance.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Enhanced biodiversity Physical and mental health benefits	The action itself is a short term and will not directly create the long term jobs. However, the planning can provide assessment and estimates on new job opportunities associated with further city greening plans, green infrastructure and spaces considered	Ensure participatory assessment and planning process where needs of various groups are heard and considered. Planning and design should ensure green space accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups.	Realizing and updating the GIS application with data and RLSV monitored parameters. The collected data can be used in digital tools supporting management of green spaces of the city. See example of the EU project digital product "GreenSpaces" (www.r3gis.com) that can be deployed to monitor, engage and manage green urban spaces

Implementation timeline: 1-2 years	**Action Owner and Implementing Agency:** Iași City Hall
Indicative Project Costs: CAPEX: ca. EUR 100-150k OPEX: N/A	**Other stakeholders and role:** Environmental Protection Agency of Iași (APM Iași), specialised sustainable urban garden design companies, urban development specialists, environmental NGOs

Financing mechanisms and sources:
City budget.

Key Direct Benefits:
Online and in-person consultations with local communities, which are accessible to vulnerable groups, can ensure all groups' needs are addressed in green space design. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations can lead to increased employment of vulnerable groups in maintenance.

Key Indirect Benefits/Co-benefits:
Improved air quality

Reduced heat island effect

Attractiveness of the neighbourhood

Higher satisfaction of local residents

Key Indicators & Metrics of success:
A comprehensive assessment covering all relevant neighbourhoods is produced and needs covered

City greening plan reflecting assessment and needs is developed and endorsed by all relevant stakeholders (public, business, citizens, NGOs, academia)

Measure Impact through (improving) **State and Pressure indicators:**
N/A

Estimated measurements of **GHG reductions:**
N/A

Benefits in terms of climate change **adaptation & resilience:**
N/A

Quantitative benefits:
N/A

Qualitative benefits:
Increased awareness and participation in neighbourhood planning, increased social capital and trust toward the authorities

LA6 Green Ambassadors of neighbourhoods – Citizens Cooperation Platform

	Sectors: Land Use and Green Spaces; Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** LAN-OS3 Identifying deficient areas and carrying out work for extension of vegetation-covered areas
Action Type: Governance	**Linked GCAP Actions:** LA1 Create a green corridors network connecting Centre – River Bahlui – Galata forest (35-50ha) LA2 Green oasis – Reducing heat island effect by creating green oasis in residential neighbourhoods, parks around water bodies and small public spaces and greening parking lots (40-60ha) LA3 Rehabilitation and modernization of the leisure area CA Rosetti (1.79ha), including: Development project of the CUG II lake shore (17,912 sq m) Stopping the decrease and degradation of intra-urban and peri-urban green spaces and Preservation of existing green areas Rehabilitation of degraded intra-urban and peri-urban green areas & Elimination of illegal constructions and restoration of the lands on which they are located LA5 Assessment of the city needs in extension of vegetation and development of city greening plan, including: Environment-friendly urban street design for decentralized ecological rainwater management (DrainGarden®concept)	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Relevant actions proposed in the Plan Actiune Oras Verde Iași (“Iași- Green City” Action Plan) (PAOV) / Communication Platform “Report Iași”	
Priority Environmental Challenges addressed: Reduction of urban green spaces Air pollution	**Supporting City (and or national) Policies and Plans:** Plan Actiune Oras Verde Iași (“Iași- Green City” Action Plan) (PAOV) / Local Environmental Action Plan of Iași County (PLAM) / General Urban Plan of Iași (PUG) / Integrated Urban Development Strategy (SIDU)	

Rationale and Justification for Action:
Build capacity of local residents in participation and decision making about creating and protecting green space systems to support clean air and social inclusion – facilitated through: urban regeneration, better liveability and increasing biodiversity by adopting nature-based solutions

Description of Action:
The action will focus on initiation of the Citizens Cooperation Platform where Green Ambassadors of neighbourhoods selected by the residents will represent their interests in the decision-making and planning related to land use and green space development. The model of the platform will be designed in cooperation with the local communities and those representing them from formal and informal community organisations and local public institutions (local municipal bodies, schools, public cultural bodies), local businesses (shops, etc.) and others. Each neighbourhood will select its own Green Ambassadors who will represent the interests of the residents of the neighbourhood. They will also coordinate neighbourhood projects implemented jointly with the city authority to engage citizens in planning, co-creation, co-management activities on green space projects, fostering ownership of the new green spaces and green infrastructure and engaging in maintenance of these. (This can be built on the existing platform “Report Iași” and on the initiative of the municipality on dialogues with local residents via community/area centres).

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Citizens activisation and engagement	No jobs to be created (however, an officer from the city administration (0.5 FTE) could be considered)	Maintain that the Green Ambassadors pool has a good representation of women, various age groups and social groups. Ensure that the Ambassadors maintain an inclusive approach in representing the needs of their community.	The initiative will use the services of an online platform, e.g. “Report Iași”. Depending on the needs and creativity, new smart elements might be incorporated in the platform
Implementation timeline: 0-5 years	**Action Owner and Implementing Agency:** Iași City Hall		

Indicative Project Costs:
Approx 0.5 FTE (full time equivalent) of an officer from the city administration, plus the cost for technical support for the platform (if needed)

CAPEX: EUR 0

OPEX: EUR 50k/year

Other stakeholders and role:
Environmental Protection Agency of Iași (APM Iași), specialised sustainable urban garden design companies, urban development specialists

Financing mechanisms and sources:
City budget

Key Direct Benefits:
Online and in-person consultations with local communities, which are accessible to vulnerable groups, can ensure all groups' needs are addressed in green space design. Inclusive green space design includes accessibility for persons with limited mobility, safety and lighting features and consideration of all age groups. Partnerships with community (women, youth, persons with disabilities-led) organisations can lead to increased employment of vulnerable groups in maintenance.

Key Indirect Benefits/Co-benefits:
Increased transparency, trust and cooperation between societal actors in the context of Iași urban development

Key Indicators & Metrics of success:
Number of neighbourhoods participating in the Platform initiative, with an assigned Ambassador

Number and scale of projects successfully implemented by each neighbourhood participating in the platform

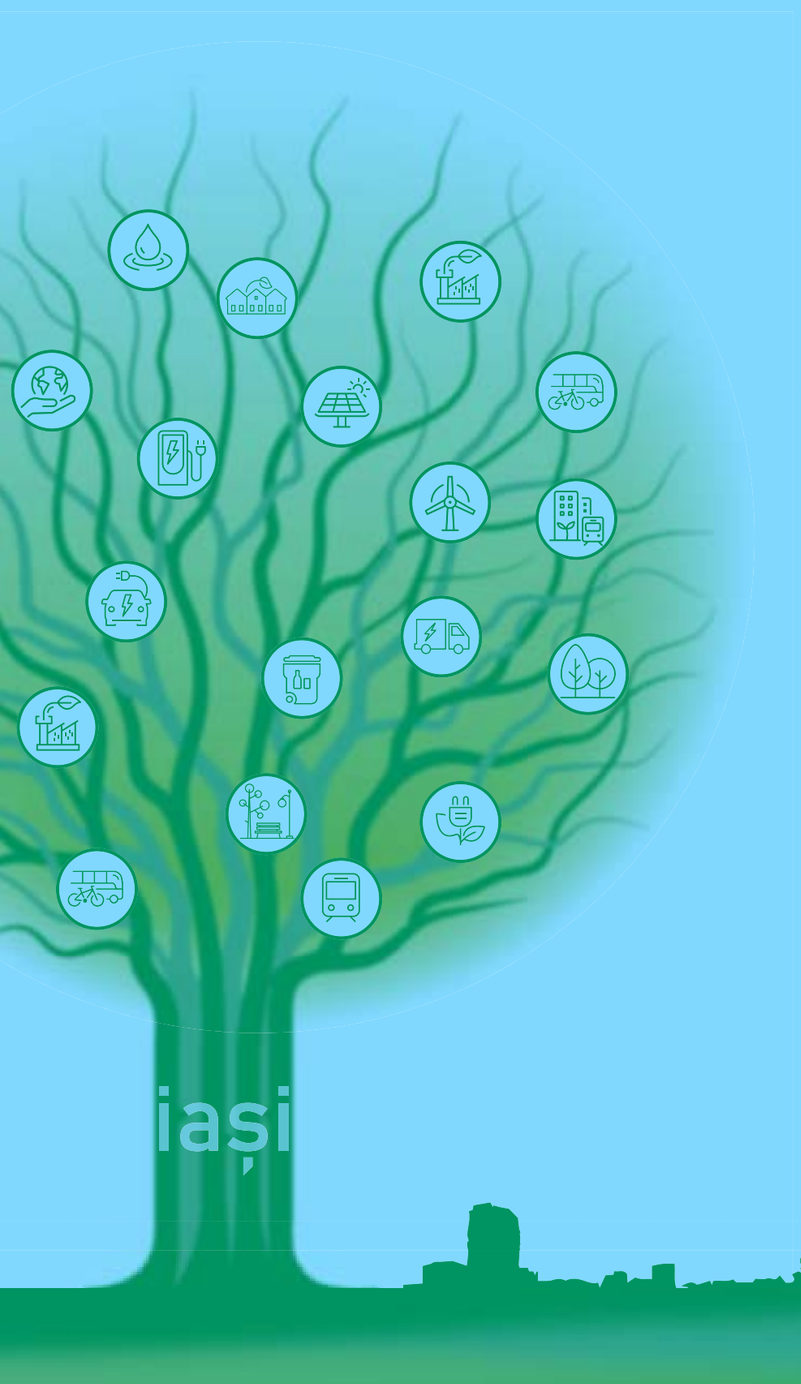
Measure Impact through (improving) **State and Pressure indicators:**
N/A

Estimated measurements of **GHG reductions:**
N/A

Benefits in terms of climate change **adaptation & resilience:**
N/A

Quantitative benefits:
N/A

Qualitative benefits:
Increased awareness and participation in neighbourhood planning, increased social capital and trust toward the authorities.



4.7. Buildings actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
BU1: Improving the energy efficiency of private buildings	✓				
BUI2: Improving the energy efficiency of public buildings	✓				
BU3: Buildings energy profile	✓				
BU4: Building nZEB plus housing for young people at risk	✓				
BU5: Annual competition for Energy efficient buildings	✓				
BU6: Users education campaigns for optimizing and monitoring energy consumption in buildings	✓				

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BU1 Improving the energy efficiency of private buildings

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private)
Action Type: Investment	**Linked GCAP Actions:** EN2 Make decarbonisation a key objective of the city's sustainable development / environmental strategy AD1 Increase awareness of Iași inhabitants on climate change impacts and mitigation / adaptation measures AD2 Improve seismic resilience of buildings within the energy related retrofitting	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Governmental programmes like "Green Home" or "Energy Efficient Home" which support the improvement of individual dwellings / Due to the increase in energy prices, citizens are making own investments for improving home energy efficiency / City Hall has some projects ongoing (submitted within the National Recovery and Resilience Plan in 2022) in which five blocks of flats are proposed for thermal rehabilitation / Sustainable Energy Action and Climate Plan (SECAP) / Improvement of the Energy Efficiency Plan	
Priority Environmental Challenges addressed: Decrease in energy consumption from fossil fuels	**Supporting City (and or national) Policies and Plans:** The City Hall provides financial incentives for residents that are improving the energy efficiency class of their home	
Rationale and Justification for Action: Energy efficient and safe private buildings		
Description of Action: Most of the city's residential buildings are old and not thermally efficient. Energy audits and proposed actions shall be taken in order to have the best solutions for improving energy efficiency. When increasing energy efficiency of buildings, two considerations must be taken into account: (i) thermal rehabilitation works on the envelope for increasing the thermal resistance of the enclosing elements, reduces heat losses and limits thermal bridges and air infiltrations and (ii) measures for improving the efficiency of the technical system are needed. Also, the use of renewable energy sources (RES) at a building or neighbourhood scale should be considered. The infrastructural work needed to increase the energy efficiency of buildings is closely related to the structural safety of buildings. Thus, for existing buildings, any rehabilitation solution must be tailored to and based on the energy audit and the structural integrity of the building. As such, retrofitting buildings for improving their energy performance has the potential to be integrated with improvements in buildings' resilience to seismic events. By 2030, the thermal efficiency of 72,600 of apartments and 8,750 of individual dwellings can be improved. Consider local tax exemption for private energy efficiency investments in the residential sector.		

	Job Creation Potential	Gender and Social Inclusion Aspects	SMART Aspects
Cross-Cutting Themes Air quality improvement Greenhouse gas emissions reduction Socio-economic wellbeing (reduced energy bills)	Energy auditors, technical experts, design and construction companies, etc. will be employed for carrying out the proposed action. No long-term employment increase is envisaged.	Collection of income-disaggregated data to identify whether any group is more likely to live in non-rehabilitated buildings Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase	Smart solutions could be included, where and when relevant e.g.: smart lighting, smart control of interior comfort parameters, BEMS

Implementation timeline:
Present – 2030, with projects ongoing thereafter

Action Owner and Implementing Agency:
Citizens, private owners, buildings administrators, owner associations

Indicative Project Costs:
CAPEX and OPEX are prone to high uncertainty due to recent (2021-2022) price spikes of all construction materials. Estimations performed before the COVID19 pandemic show a value of EUR 3,200-3,500 / flat. Indicative maximal figures shall be provided by the future cost standard. For individual buildings, the values depend a great deal on the surface of the building, but it can roughly start from EUR 30,000 up to EUR 50,000. Energy audits may provide updated figures for CAPEX. As a starting point, in 2022 nine blocks of flats, through NRRP, were proposed for thermal rehabilitation and evaluated to cost EUR 5.2 million. Additional efforts are needed to be made in this sector and a total of 72,600 of apartments and 8,750 of individual dwellings are proposed to be improved in terms of energy efficiency. Thus, the resulting investment costs will sum to EUR 88.2 million

OPEX:N/A

Other stakeholders and role:
City Hall, governmental authorities (for encouraging the investments), energy auditors (having the role to carry out energy audits for the buildings that are needed to be renovated), technical experts (to perform technical assistance in order to point out the structural safety of the building and identify the measures needed in case of retrofitting) and design and construction companies (having the role to design and put into place the solutions)

Financing mechanisms and sources:
Private sources (own income, bank loans), financial support from City Hall, governmental funds, European funds, energy efficient homes (AFM), NRRP

Key Direct Benefits:
Reduction of GHG emissions, decrease in energy consumption from fossil fuels, an increase in indoor comfort, decreased expenditure related to energy cost, increased awareness of Iași inhabitants on climate change impacts and mitigation/ adaptation measures. Collection of income-disaggregated data will identify whether any group is more likely to live in non-rehabilitated buildings.

Key Indirect Benefits/Co-benefits:
Energy auditors, technical experts, design and construction companies, etc. will be employed for carrying out the proposed action. Collection of gender-disaggregated employment and pay data, including gender distribution of staff at all seniority levels, will increase. Increased adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.

Key Indicators & Metrics of success:
Decrease of energy consumption
Number of buildings rehabilitated

Measure Impact through (improving) **State and Pressure indicators:** Heat fossil fuel consumption Thermal comfort provision	Estimated measurements of **GHG reductions:** A reduction of 61,397tCO_2/year could be ensured after thermal rehabilitation of 72,600 apartments in Iași and a supplementary reduction of 13,526tCO_2/year will be achieved after improving the energy efficiency of 8,750 individual dwellings (estimation according to SECAP). In total, a reduction of 75,463tCO_2/year will be achieved after implementing the proposed energy efficiency works in the residential sector (estimations according to SECAP).	Benefits in terms of climate change **adaptation & resilience:** Adaption to heat waves, increased seismic resilience, reduction of GHG emissions

Quantitative benefits: Energy or maintenance saving, efficiency gains, higher sales of thermal insulation materials and more contracts for energy auditors, technical experts, design and construction companies. Also, if financial support for thermal rehabilitation of apartments is secured, the expected economy of energy will be roughly 2.5MWh/year for each apartment. From the total of about 103,710 apartments in Iași (before 2012), if 70% of apartments improve thermal efficiency, the energy reduction will be up to 189,492 MWh/year. In case of individual dwellings, the measures of energy efficiency can result in an economy of energy of almost 3.6MWh/year for each house. Considering that the total number of houses built before 2012 in Iași is 18,801, energy efficiency solutions applied to 70% of houses can ensure an energy reduction of about 47,379MWh/year	**Qualitative benefits:** Better interior comfort, cleaner air, quality of life benefits, improved liveability, money savings

BU2 Improving the energy efficiency of public buildings

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private)
Action Type: Investment	**Linked GCAP Actions:** EN2 Make decarbonisation a key objective of the city's sustainable development / environmental strategy AD1 Increase awareness of Iași inhabitants on climate change impacts and mitigation / adaptation measures AD2 Improve seismic resilience of buildings within the energy related retrofitting	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Currently, City Hall has some projects ongoing projects that were submitted within the National Recovery and Resilience Plan, through which several schools and the Recovery Clinical Hospital are proposed for thermal rehabilitation.	
Priority Environmental Challenges addressed: Decrease in energy consumption from fossil fuels	**Supporting City (and or national) Policies and Plans:** National Recovery and Resilience Plan / Sustainable Energy Action and Climate Plan (SECAP) / Improvement of the Energy Efficiency Plan	
Rationale and Justification for Action: Energy efficient and safe public buildings		

Description of Action:
Two thirds of the public buildings are yet to be thermally rehabilitated in Iași City. The priority should be on schools, which count for more than 100 units. According to the SECAP, through the actions proposed for improving the energy efficiency in numerous educational and cultural buildings, a total of 52,274.4MWh/year will be saved. Also, important economies of energy could be obtained by improving the energy efficiency of healthcare buildings. According to the same document, an additional economy of 3,581 MWh/year can be made by improving the energy efficiency of two major hospitals (Dr. C. I. Parhon Clinical Hospital and Recovery Clinical Hospital). Currently, City Hall has some ongoing projects, including projects that were submitted within the National Recovery and Resilience Plan in which 14 schools are proposed for thermal rehabilitation. Nevertheless, all educational units should be energy efficient, thus all the remaining inefficient buildings should be rehabilitated. Through POR, the Recovery Clinical Hospital will be improved in terms of energy efficiency; for Parhon Hospital, funding sources need to be found. When increasing energy efficiency of buildings, two considerations must be taken into account: (i) thermal rehabilitation works on the envelope for increasing the thermal resistance of the enclosing elements, reduces heat losses and limits thermal bridges and air infiltrations and (ii) measures for improving the efficiency of the technical system are needed. Also, the use of renewable energy sources (RES) at building level should be considered. The infrastructural work needed to increase the energy efficiency of buildings is closely related to the structural safety of buildings. Thus, for the existing buildings, any rehabilitation solution must be tailored to and based on the energy audit and the structural integrity of the building. As such, retrofitting buildings for improving their energy performance has the potential to be integrated with improvements in buildings' resilience to seismic incidences. For optimizing the buildings energy use, smart meters, automation and intelligent technical equipment could be used, if recommended in the energy audit, all of which are measures that could result in a synergy with the DigiBuilt programmeprogramme that was started by the City Hall. The main objective of this action is to reduce by 30% the carbon footprint of all companies / departments / activities managed by the City Hall

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Air quality improvement Greenhouse gas emissions reduction	Energy auditors, technical experts, design and construction companies, etc. will be employed for carrying out the proposed action. No long-term employment increase is envisaged	Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors will increase	Smart solutions could be included when and where relevant, e.g.: smart energy meters, automatic billing, smart lighting, smart control of interior comfort parameters, automation technology of the buildings technical system, mechanical ventilation with heat recovery, BEMS
Implementation timeline: 2030, with projects ongoing thereafter	**Action Owner and Implementing Agency:** City Hall		

Indicative Project Costs:
Due to the unique character of most public buildings, with many recorded as historic monuments, CAPEX and OPEX pre-dimensioning is a difficult task. Moreover, these are prone to high uncertainty due to recent (2021-2022) price spikes of all construction materials. Energy audits may provide indicative figures for CAPEX. As a starting point, the planned or ongoing projects for improving the energy efficiency of 14 educational units were evaluated to be EUR 26.62 million; for the Recovery Clinical Hospital, an approx. value of EUR 3.1 million was estimated for improving the thermal efficiency. An additional EUR 5.5 million is estimated for improving the energy efficiency of Parhon Hospital Clinic

OPEX: N/A

Other stakeholders and role:
Energy auditors (having the role to carry out energy audits for the buildings that are needed to be renovated), technical experts (to perform technical assistance in order to point out the structural safety of the building and identify the measures needed in case of retrofitting) and design and construction companies (having the role to design and put into place the solutions)

Financing mechanisms and sources:
City budget, governmental funds. European funds, National Recovery and Resilience Plan (NRRP), AFM, POR.

Key Direct Benefits:
Reduction of GHG emissions, decrease in energy consumption from fossil fuels, increase of indoor comfort, a decrease of expenditures related to energy costs, an increased awareness by Iași inhabitants of climate change impacts and mitigation / adaptation measures.

Key Indirect Benefits/Co-benefits:
Energy auditors, technical experts, design and construction companies, etc. will be employed for carrying out the proposed action. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase. Increased adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.

Key Indicators & Metrics of success:
Decrease of energy consumption

Increased number of public buildings rehabilitated

Measure Impact through (improving) **State and Pressure indicators:**
Heat fossil fuel consumption

Thermal comfort provision

Estimated measurements of **GHG reductions**:
All educational units should be energy efficient, thus important economies of energy and equiv. CO_2 emissions will result. According to the SECAP, there are still 50 educational buildings needed to be improved, which will result in a reduction of 26,674.6 tonnes of equiv. CO_2. Other important consumers are the healthcare units that need to be rehabilitated. Continuing the City Hall's efforts in this matter, by improving the energy efficiency of the Recovery Clinical Hospital, an approx. value of 1,441 tonnes of CO_2 will be saved and an additional reduction of 81 tonnes of CO_2 is estimated to be obtained for Parhon Hospital Clinic. Implementing all the proposed measures will generate an annual economy of around 28,196.6 tonnes CO_2/year.

Benefits in terms of climate change **adaptation & resilience:**
Adaption to heat waves, increased seismic resilience, reduction of GHG emissions

Quantitative benefits:
Energy or maintenance savings, efficiency gains, higher sales of thermal insulation materials, more contracts for energy auditors as well as design and construction companies

Qualitative benefits:
Better interior comfort, cleaner air, quality of life benefits, improved liveability, money savings

BU3 Buildings energy profile

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private)
Action Type: Investment	**Linked GCAP Actions:** GV1 – Setting up communication framework with stakeholders, including engagemente of research, business and civil society partners in the planning, resource mobilisation and implementation	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Currently, the degree of smart metering of final electricity consumers is about 4%. An estimate of the coverage within the city of Iași is 7.8%. According to Delgaz grid long-term endowment plan, 45% of consumers with smart meters shall be achieved in 2028. Regarding gas smart metering, no reliable data on this matter could be obtained. There is no smart metering of heat consumers in the city's centralised thermal heating system. City Hall is a partner in DigiBuild, a new project that aims to provide high quality, data-driven services for a digitally built and sustainable environment, focusing on the entire life cycle of data use, with the aim of intelligently operating a building or a set of buildings. DigiBuild is limited to part of the public buildings, but it will cover the entire life cycle of data use, from collection to operation and turn the raw data into accurate and connected information so that a building or a group of buildings will be able to operate intelligently	
Priority Environmental Challenges addressed: Energy efficiency, monitoring energy consumption	**Supporting City (and or national) Policies and Plans:** SECAP	
Rationale and Justification for Action: An accurate buildings energy profile accessible for all the stakeholders. Moreover, smart meters installed will help monitoring energy consumption.		
Description of Action: No common data base exists for monitoring the energy consumption of public buildings. Generally, excel files are used and shared between different departments of City Hall. As such, an online platform that will be used for adding the most important data (e.g. type of building, construction year, type of structure, renovation and rehabilitation works done, usable surface, insulating layers, energy consumptions for each type of consumer, etc.) is needed. An advanced data will be created in which dynamic and static data could coexist and, further on, will be exploited in high-quality energy services, analysis of large volumes of data and other data-based energy services for intelligent energy management and energy-efficient buildings. Installing smart heat metering units shall be a priority in the short/medium term. Smart meters provide numerous benefits, the most important of which is greater energy awareness for customers. This leads to them adjusting their consumption of energy, thereby reducing peak loads, reducing CO_2 emissions and reducing losses, both technical and commercial. The use of a building energy management system is recommended to be installed in public buildings. This will make it possible to control the interior climate parameters, the building services equipment and also to monitor energy consumption. In the short/medium term, installing smart meters on all building utilities should be a priority so that an accurate evaluation of the energy consumption and a decrease in CO_2 emissions could be made		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Air quality improvement Greenhouse gas emissions reduction	Energy managers, specialized personnel in energy management – perhaps 10 FTE posts	Collection of gender-disaggregated employment data of staff developing the buildings energy profile, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors. Public-private cooperation can offer training and career growth opportunities for women in STEM.	Integrated software for all smart solutions developed on Smart City domain Smart Energy Meters Implement automation technology for buildings systems Specialized software that collects the data and provides accurate results
Implementation timeline: 2030, with implementation ongoing thereafter	**Action Owner and Implementing Agency:** Building owners, utility companies		

Indicative Project Costs:
The cost of developing such a platform can be roughly EUR 80,000 for public buildings, but operational costs should be taken into account. In addition, smart meters should be installed. The power smart meters are roughly EUR 250/piece.

OPEX:N/A

Other stakeholders and role:
Governmental authorities, partners for proving the appropriate solutions

Financing mechanisms and sources:
City budget, private sources

Key Direct Benefits:
Smart meters, dedicated platform, energy monitoring

Key Indirect Benefits/Co-benefits:
Improved monitoring of energy consumption will enable building owners / administrators to adjust their consumption of energy, thereby reducing peak loads, reducing CO_2 emissions and reducing energy losses. Collection of gender-disaggregated employment data of staff developing the buildings energy profile, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase. Increased adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors. Public-private cooperation can offer training and career growth opportunities for women in STEM.

Key Indicators & Metrics of success:
Number of smart meters installed

% buildings with smart energy meters

Measure Impact through (improving) **State and Pressure indicators:**
18.1 – 18.3 Buildings electricity consumption

19-19.3 Thermal comfort provisions

20 Industry electricity consumption

22-22.3 Consumption of fossil fuels in industrial processes

Estimated measurements of **GHG reductions:**
Monitoring energy consumption can result in energy savings, but an accurate estimation of the reduction cannot be made, thus GHG savings cannot be estimated.

Benefits in terms of climate change **adaptation & resilience:**
Increase awareness by Iași inhabitants of climate change impacts and mitigation / adaptation measures

Quantitative benefits:
Energy or maintenance saving (an estimated value of 10% energy economies in public buildings could be associated to this action), employment created

Qualitative benefits:
Energy consumption monitoring, optimisation of energy consumption

BU4 Building nZEB plus housing for young people at risk

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private)
Action Type: Investment	**Linked GCAP Actions:** EN2 Make decarbonisation a key objective of the city's sustainable development / environmental strategy AD1 Increase awareness of Iași inhabitants on climate change impacts and mitigation / adaptation measures	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Currently, City Hall has some projects ongoing, including projects that were submitted within the National Recovery and Resilience Plan, through which nZEB+ buildings will be built for young people at risk	
Priority Environmental Challenges addressed: Decrease in energy consumption from fossil fuels	**Supporting City (and or national) Policies and Plans:** The National Energy Strategy / National Recovery and Resilience National Plan (NRRP)	
Rationale and Justification for Action: Energy efficient and well insulated public and private buildings		
Description of Action: The newly constructed buildings (nZEB+) will comply with the primary energy requirement, requiring at least 20% reduction in energy requirement over existing buildings. The objective is to construct residential apartments whose energy consumption is almost zero (nZEB), according to the national provisions. This percent can be pursued and verified in specific documentation prepared by energy auditors. Big investments are needed and financing sources coming from NRRP can be accessed to implement these solutions. For this action, the City Hall wants to build a residential complex, composed of 7 blocks, summing up to 180 apartments in total, located in the Grădinari area. The design stage has started and the technical documents shall be prepared so that the NZEB+ performance criteria will be achieved		
Cross-Cutting Themes Air quality improvement Greenhouse gas emissions reduction Socio-economic wellbeing (reduced energy bills)	**Job Creation Potential** Creating many business opportunities in the renewable energy area; energy auditors as well as design and construction companies will be employed for carrying out the proposed action – 10 FTE long-term jobs	**Gender and Social Inclusion Aspects** Scaled investment levels can remove barriers to adopting renewable energies for low-income households, single-headed households, women-led and small/medium enterprises, persons with disabilities and other vulnerable groups
		SMART Aspects Smart solutions could be included, e.g.: smart energy meters, automatic billing, smart lighting, smart control of the parameters of the interior comfort parameters, BEMS automation technology for buildings systems, etc.
Implementation timeline: By 2030	**Action Owner and Implementing Agency:** City Hall, public authorities.	
Indicative Project Costs: CAPEX was estimated at EUR 14.9 million OPEX:N/A	**Other stakeholders and role:** Design team; building owners; utility providers.	
Financing mechanisms and sources: NRRP		
Key Direct Benefits: Environmental: energy efficient buildings, decreased use of energy from fossil fuels. Socio-economic (employment, inclusion): creating many business opportunities in the renewable energy area; energy auditors as well as design and construction companies will be employed for carrying out the proposed action; scaled investment levels can remove barriers to adopting renewable energies for low-income households, single-headed households, women-led and small/medium enterprises, persons with disabilities and other vulnerable groups.		
Key Indirect Benefits/Co-benefits: The expenditures related to energy costs will be low. An increased awareness by Iași inhabitants of climate change impacts and mitigation / adaptation measures can be expected.		
Key Indicators & Metrics of success: Number of nZEB+ buildings/flats		

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private)
Measure Impact through (improving) **State and Pressure indicators:** Heat fossil fuel consumption Thermal comfort provision Share of renewable in total energy consumption	Estimated measurements of **GHG reductions:** Considering the fact that new NZEB+ buildings are proposed, no reduction of GHG emissions can be considered; on the contrary, these may lead to additional GHG emissions coming from the use of the future buildings. Nevertheless, in comparison with the existing buildings stock the GHG emissions of the proposed buildings will be much lower and a reduction of 225 tonnes of CO_2/ year can be considered.	Benefits in terms of climate change **adaptation & resilience:** Adaption to climate hazards, energy system disruption caused by extreme weather events
Quantitative benefits: Increase in the number of energy efficient buildings and the use of renewable energy sources	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability, energy independence	

BU5 Annual competition for Energy efficient buildings

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private) BUI-SO2 The public is better informed about the value of increasing energy efficiency in buildings
Action Type: Policy	**Linked GCAP Actions:** EN3 Increase awareness of population regarding energy efficiency AD1 Increase awareness of Iași inhabitants on climate change impacts and mitigation/ adaptation measures BU6 Users education campaigns for optimising and monitoring energy consumption in buildings	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Private initiatives and galas organised by stakeholders with activities within the energy efficient buildings (e.g. Gala Green Report)	
Priority Environmental Challenges addressed: Lack of awareness on energy efficiency	**Supporting City (and or national) Policies and Plans:** National Recovery and Resilience National Plan (NRRP)	
Rationale and Justification for Action: Energy efficient and well insulated public and private buildings.		
Description of Action: An annual competition, culminating in an event / gala, can be organised to incentivise building owners to implement new and innovative measures for energy efficiency in their building(s). The process can involve different sections, involving academia, private companies and other stakeholders. The competition subjects can be: the best energy efficient design, the best major renovation, the best built up solution, the best environmentally friendly design, etc. The prizes can consist of tax exemptions or prizes in money.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes N/A	Employment created for different categories of people involved (public relations, IT, event companies, etc.)	With vulnerable groups (including women, persons with disabilities, Roma, low-income communities, elderly and youth) participating in the gala, they can have their views/needs represented	The annual gala will include digital communication instruments (e.g. city website, social and professional online networks – City Facebook page and GCAP stakeholders group or Facebook etc). Also, a dedicated app could be created, which can include general information about the event, details about the competing projects and even a voting function towards the competition.
Implementation timeline: Present-2032	**Action Owner and Implementing Agency:** City Hall		

	Sectors: Buildings	**Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private) BUI-SO2 The public is better informed about the value of increasing energy efficiency in buildings
Indicative Project Costs: EUR 50,000 OPEX: N/A	**Other stakeholders and role:** Private companies, different organisations or professional agencies, academia – for disseminating designs, ideas and concepts on energy efficient buildings with other stakeholders	
Financing mechanisms and sources: City budget, private sources.		
Key Direct Benefits: Increased awareness on energy efficiency		
Key Indirect Benefits/Co-benefits: With vulnerable groups (including women, persons with disabilities, Roma, low-income communities, elderly and youth) participating in the gala, they can have their views/needs represented.		
Key Indicators & Metrics of success: Number of people attending Entities involved in each Gala		
Measure Impact through (improving) **State and Pressure indicators:** 19.4 Share of buildings with green certification	Estimated measurements of **GHG reductions:** No direct reduction of GHG emissions can be considered	Benefits in terms of climate change **adaptation & resilience:** Increased awareness of Iași inhabitants on climate change impacts and mitigation / adaptation measures
Quantitative benefits: Increase the number of energy efficient buildings, employment created	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability	

BU6 Users education campaigns for optimising and monitoring energy consumption in buildings

	Sector: Buildings **Supporting Strategic Objective(s) of:** BUI-SO1 Energy efficient city buildings (public and private) BUI-SO2 The public is better informed about the value of increasing energy efficiency in buildings
Action Type: Policy	**Linked GCAP Actions**: EN3 Increase awareness of population regarding energy efficiency AD1 Increase awareness of Iași inhabitants on climate change impacts and mitigation / adaptation measures BU5 Annual competition for energy efficient buildings
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives**: Private companies or specialists involved in clusters. Professional organisations that promote the energy efficiency in buildings (the NZEB Roadshow, PRO-NZEB, etc.)
Priority Environmental Challenges addressed: Lack of awareness on energy efficiency	**Supporting City (and or national) Policies and Plans**: National Recovery and Resilience National Plan (NRRP) / SECAP
Rationale and Justification for Action: Energy efficient and well insulated public and private buildings. The behaviour of users can influence up to 30% the energy consumption in buildings. The education of users can result in significant energy savings. Also, using BEMS could also lead to an optimisation of the energy consumption.	

Description of Action:
Education campaigns are needed in order to increase the awareness of users in terms of energy consumption in a building. Continuous monitoring and appropriate maintenance will minimize energy consumption and operating costs. Users will become aware of the fact that an optimized monitoring system allows continuous control of energy consumption, installation efficiency and thermal parameters of buildings. The education campaigns could start in schools and public buildings. NGOs and Academia can get involved in this action.

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Inclusion Aspects**	**SMART Aspects**
Air quality improvement Greenhouse gas emissions reduction Socio-economic wellbeing (reduced energy bills)	Employment created for different categories of people involved (public relation, event companies, free lancers, etc.)	Conduct education campaigns in schools and among local communities including among women, persons living with disabilities, Roma and other vulnerable groups.	The campaign implementation will include digital communication instruments (e.g. city website, social and professional online networks – City Facebook page and GCAP stakeholders group or Facebook, etc.)

Implementation timeline:
Present-2032

Action Owner and Implementing Agency:
City Hall

Indicative Project Costs:
EUR 20,000

OPEX:N/A

Other stakeholders and role:
Academia, professional organisations, educational units, citizens

Financing mechanisms and sources:
City budget, private sources.

Key Direct Benefits:
Increase awareness on the advantages of monitoring energy consumption by users

Conduct education campaigns in schools and among local communities including among women, persons living with disabilities, Roma and other vulnerable groups.

Key Indirect Benefits/Co-benefits:
The behaviour of users can change due to this education campaigns, which could lead to energy savings

Key Indicators & Metrics of success:
Number of campaigns
Number of people who benefit from the campaigns

Measure Impact through (improving) **State and Pressure indicators:**
Heat fossil fuel consumption

Thermal comfort provision

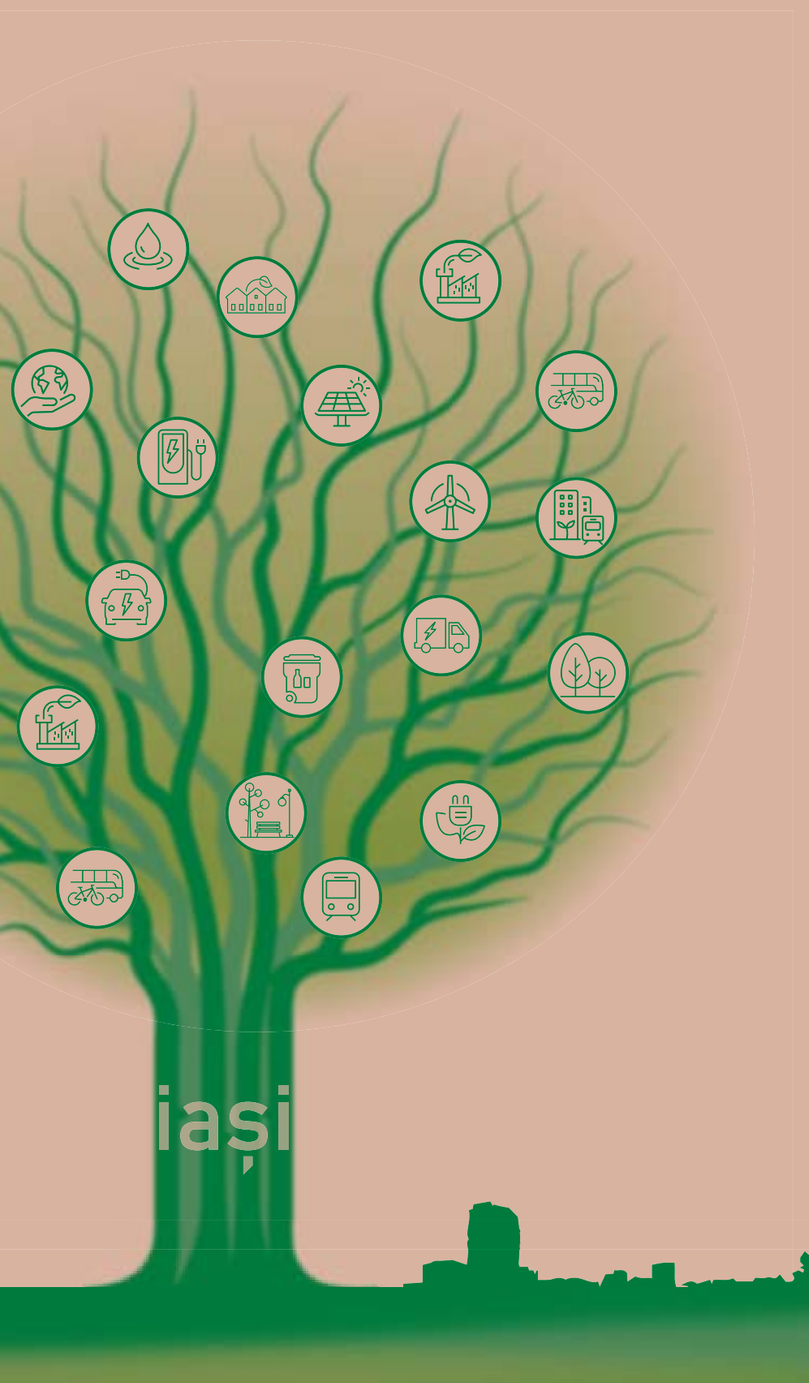
Buildings electricity consumption

Estimated measurements of **GHG reductions**:
No direct reduction of GHG emissions can be considered.

Benefits in terms of climate change **adaptation & resilience**:
Increased awareness by Iași inhabitants of climate change impacts and mitigation / adaptation measures

Quantitative benefits:
Increased awareness on energy or maintenance savings, efficiency gains, employment created

Qualitative benefits:
Cleaner air, quality of life benefits, improved liveability



4.8. Solid waste actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
WS1: Capacity building and awareness raising on reuse and segregation of waste			✓	✓	
WS2: Green islands for segregated solid waste collection in the cCity (phase 1: 175 islands)			✓	✓	
WS3: Additional civic amenity sites			✓	✓	
WS4: Waste management centre			✓	✓	
WS5: Digitization of waste collection operators			✓	✓	
WS6: Waste-to-energy project at the landfill site	✓		✓		

PHOTO 50-51

PHOTO 52-55

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WS1 Capacity building and awareness raising on reuse and segregation of waste

	Sector: **Solid Waste** **Supporting Strategic Objective(s) of:** **WAS-SO1 Avoidance of waste and improving waste segregation at source**
Action Type: Investment and other	**Linked GCAP Actions**: AD1 Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures GV1 Setting up a communicationscommunication framework with the stakeholders, including enhanceded stakeholder consultations
Policy/Investment Action Classification: Other	**Existing Linked Activities/Initiatives:** Ongoing actions of City Hall and contracted waste company, Salubris SA
Priority Environmental Challenges addressed: Selective waste collection Recycling Uncontrolled dumping	**Supporting City (and or national) Policies and Plans**: Waste Management Plan Iași County 2020-2025 / Waste Master Plan Iași County 2008-2038 / National Recovery and Resilience Plan / National Waste Management Strategy
Rationale and Justification for Action: Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.	
Description of Action: The development of an effective education and information system based on EU experiences, framed to address citizens, businesses, companies, schools, social and youth organizations, etc. and using various new media and innovative tools. Focus on packaging materials from consumption goods and biodegradable wastes (food and kitchen wastes). Currently, only ca. EUR 25,000 is available for investments and operations per year (city budget, support from waste company and recycling companies).	

	Job Creation Potential	Gender and Social Inclusion Aspects	SMART Aspects
Cross-Cutting Themes Reduction of pollution in water	Up to 10 FTE jobs	Improvement of women's participation and representation in waste sector through opportunities for female trainers, collection of gender-disaggregated employment data, adoption of inclusive workplace policies and awareness raising campaigns targeting schools and women.	No SMART/digital aspects are envisaged

Implementation timeline: As from 2023-24	**Action Owner and Implementing Agency**: Iași City Hall with support of contracted waste company Salubris SA
Indicative Project Costs: EUR 60,000/year (incl. EUR 25,000 currently available); CAPEX: ca. EUR 10,000; OPEX: ca. EUR 50,000 (est.)	**Other stakeholders and role:** Population, civil organisations, EPA Iași (monitoring)
Financing mechanisms and sources: City budget, waste management company. Recycling companies.	

Key Direct Benefits:
Major opportunities for female trainers and inclusion of all groups of the society. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase. Increased adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors. Media coverage and presence at events and festivals could facilitate further outreach to the entire society, including vulnerable groups. Awareness-raising campaigns could target schools as well as women (the group typically responsible for household waste disposal).

Key Indirect Benefits/Co-benefits:
Observation at waste collection points to avoid littering and increase efficient separate collection. Social media tools for marketing, commercials, publicity.

Key Indicators & Metrics of success:
Volume of household and industrial wastes (per capita/per company)
Volume of mixed vs segregated waste
Volume of illegally dumped waste

Measure Impact through (improving) **State and Pressure indicators:** 29 Solid waste generation indicator 30 Solid waste collection indicator	Estimated measurements of **GHG reductions**: Yearly tonnage cannot be calculated. If the increased awareness would result in a yearly reduction of 5% of the total Iași city household waste to be collected for processing (by avoidance, reuse, home-recycling, etc.), this may amount to ca. 7,960 tonnes CO_2e/year.	Benefits in terms of climate change **adaptation & resilience**: Indirect savings on raw materials, energy and water consumption and reduction of GHG emissions by reusing and recycling waste materials

Quantitative benefits: Energy or maintenance saving, efficiency gains, employment created (up to 10 FTE jobs); Action could result in a reduction of household waste with 5%, saving ca. 7,960 tonnes of CO_2e/year.	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability

WS2 Green islands for segregated solid waste collection in the city (phase 1: 175 islands)

	Sector: **Solid Waste**	**Supporting Strategic Objective(s) of:** **WAS-SO1 Avoidance of Waste and Improving Waste Segregation at Source**
Action Type: Investment	**Linked GCAP Actions**: GV1 Setting up a communicationscommunication framework with stakeholdersstakeholders	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Under implementation	
Priority Environmental Challenges addressed: Selective waste collection Recycling Uncontrolled dumping	**Supporting City (and or national) Policies and Plans**: Waste Management Plan Iași County 2020-2025 / Waste Master Plan Iași County 2008-2038 / National Recovery and Resilience Plan / National Waste Management Strategy	
Rationale and Justification for Action: Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.		
Description of Action: Provision of 275 new public above-ground and underground digitized “green” islands for the selective collection of 5 fractions of solid waste throughout the city, financed through the National Resilience and Recovery Plan (PNRR/ 2022/C3/S/I.1.B). Some 175 “islands” have been tendered in phase 1 (for which financing is in principle secured). Phase 2 involves construction of another 100 similar “islands” (for which the tender has not been launched yet).		

	Job Creation Potential	**Gender and Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Air quality Greenhouse gas emissions Revitalisation of degraded sites	Up to 10 FTE jobs	Improvement of women’s and marginalised groups’ participation and representation in waste sector through provision of low-skilled and gender balanced jobs, collection of gender-disaggregated employment data and adoption of inclusive workplace policies. Engagement of social groups in waste management by provision of green islands in all city neighbourhoods and awareness raising targeting schools and women.	CCTV systems, monitored in a centralised system

Implementation timeline: 2023-2024	**Action Owner and Implementing Agency**: Iași City Hall and contracted waste company, Salubris SA
Indicative Project Costs: EUR 4 million (phase 1; CAPEX: ca. EUR 3.5 million; OPEX: ca. EUR 0.5 million est.) ca. EUR 2.5 million (phase 2; CAPEX: ca. EUR 2.2 million; OPEX: ca. EUR 0.3 million est.)	**Other stakeholders and role:** Population, EPA Iași (monitoring)
Financing mechanisms and sources: National Resilience and Recovery Plan	
Key Direct Benefits: Provision of additional jobs for installation, maintenance and data monitoring. Opportunities for low-skilled labour and gender balancing. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data will increase. Increased adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors. Bringing the message of segregated waste collection also to the poorer areas of the city by providing more facilities and appropriate infrastructure for the vulnerable groups. Awareness-raising campaigns could target schools as well as women (the group typically responsible for household waste disposal).	
Key Indirect Benefits/Co-benefits: Monitoring systems linked to central data system to check the status of each of the individual containers (when to be emptied, site cleaning, checking major offences, etc.)	

	Sector: **Solid Waste**	**Supporting Strategic Objective(s) of:** **WAS-SO1 Avoidance of Waste and Improving Waste Segregation at Source**
Key Indicators & Metrics of success: Volume of mixed vs segregated waste Amount of litter from illegal dumping		
Measure Impact through (improving) **State and Pressure indicators:** 29 Solid waste generation indicator 30 Solid waste collection indicator	Estimated measurements of **GHG reductions**: Yearly tonnage cannot be calculated. If the optimized segregated collection in the city of Iași would result in a yearly increase of 10% of household waste recycling, this would amount to ca. 160 tonnes CO_2e/year. Emissions due to construction are not included in this estimation.	Benefits in terms of climate change **adaptation & resilience**: Indirect savings on raw materials, energy and water consumption and reduction of GHG emissions by reusing and recycling waste materials
Quantitative benefits: Energy or maintenance saving, efficiency gains, employment created (up to 10 jobs) Action could increase waste recycling of household waste with 10% and savings of ca. 160 tonnes of CO_2e/year.	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability	

WS3 Additional civic amenity sites

	Sector: **Solid Waste** **Supporting Strategic Objective(s) of:** **WAS-SO1 Avoidance of Waste and Improving Waste Segregation at Source**
Action Type: Investment	**Linked GCAP Actions**: LA2 Green oasis – contribution through revitalisation of degraded sites
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Similar infrastructure already constructed and operational
Priority Environmental Challenges addressed: Selective waste collection Recycling Uncontrolled dumping	**Supporting City (and or national) Policies and Plans**: Waste Management Plan Iași County 2020-2025 / Waste Master Plan Iași County 2008-2038 / National Recovery and Resilience Plan / National Waste Management Strategy
Rationale and Justification for Action: Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.	
Description of Action: Construction and equipment of three additional medium to small public waste collection sites (surface ca. 3,000m²), where citizens can drop their solid waste materials in appropriate containers on a voluntary basis. Some 15 fractions of municipal and special waste would be collected separately. The project will be financed through the National Resilience and Recovery Plan. An example of a similar site was already constructed in 2016 in Iași, allowing to separately collect at least 11 different waste fractions. The sites would be equipped with PV panels producing the necessary solar energy. Equipment may be financed by Salubris through the NRRP. Each site would have a capacity of ca. 300ton/year. The first part of the project will be a feasibility study.	

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Water resources Air quality improvement Greenhouse gas emissions reduction	Up to 10 FTE jobs	Improvement of women's and marginalised groups' participation and representation in waste sector through provision of low-skilled and gender balanced jobs, collection of gender-disaggregated employment data and adoption of inclusive workplace policies.	Smart waste registration systems (sensors, CCTV applications) on weighing systems, waste containers, using automatic registration of deponents and automatic registration of deliveries to recycling entities

Implementation timeline: 2023-2024	**Action Owner and Implementing Agency**: Iași City Hall and contracted waste company Salubris SA
Indicative Project Costs: EUR 2.5 million (CAPEX: ca. EUR 2.2 million, OPEX: ca. EUR 0.3 million – est.)	**Other stakeholders and role:** Population, companies, EPA Iași (monitoring)
Financing mechanisms and sources: National Resilience and Recovery Plan	

Key Direct Benefits:
Provision of additional jobs for installation, maintenance and data monitoring. Opportunities for low-skilled labour and gender balancing. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.

Key Indirect Benefits/Co-benefits:
Monitoring systems linked to central data system to improve separate waste collection.

Key Indicators & Metrics of success:
Volume of mixed vs segregated waste
Amount of litter from illegal dumping
Volume of waste arriving at landfill

Measure Impact through (improving)

State and Pressure indicators:
30 Solid waste collection indicator
31 Solid waste treatment indicator

Estimated measurements of **GHG reductions**:
ca. 1,056 tonnes CO_2e avoided/year for the 3 additional sites. Emissions from construction not included in this estimation.

Benefits in terms of climate change **adaptation & resilience**:
Indirect savings on raw materials, energy and water consumption and reduction of GHG emissions by reusing and recycling waste materials

Quantitative benefits: Energy or maintenance saving, efficiency gains, employment created (up to 10 FTE jobs). Action could result in ca. 1,056 tonnes of CO_2e avoided/year.	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability

WS4 Waste Management Centre

	Sector: **Solid Waste**	**Supporting Strategic Objective(s) of:** **WAS-SO1 Avoidance of Waste and Improving Waste Segregation at Source**
Action Type: Investment	**Linked GCAP Actions**: LA2 Green oasis – contribution through reduced pressure of degraded sites	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing waste collection and transport services and ongoing landfilling	
Priority Environmental Challenges addressed: Selective waste collection Waste recycling Uncontrolled dumping	**Supporting City (and or national) Policies and Plans**: Waste Management Plan Iași County 2020-2025 / Waste Master Plan Iași County 2008-2038 / National Recovery and Resilience Plan / National Waste Management Strategy	

Rationale and Justification for Action:
Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.

Description of Action:
Construction and equipment of a large public waste management centre (capacity 10,000 tonnes/year), including a material recovery facility (MRF) for source-separated dry recyclables and composting and construction/demolition waste processing facilities. The waste management centre will be constructed and operating for the urban agglomeration of Iași, where citizens and companies can drop large volumes and bulk waste on a voluntary basis. The site will therefore also include compactors and crushers for demolition wastes, a compost plant with laboratory, a refrigerated room for animal carcasses, etc. For the green waste to be composted, the facility will closely collaborate with other city services responsible for the maintenance of public green areas. A post-sorting facility for the recovery of clean materials is foreseen. Energy would come from renewable sources (e.g., solar). The site will be constructed on an area of 2.5ha, for which the land is provided by the city. The project will be financed through the National Resilience and Recovery Plan. Equipment may be financed by Salubris through the NRRP. Data on annual installed capacities (tonnes/year) are needed to estimate CAPEX and will be subject of a study financed by the City Hall (2023).

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Water resources Air quality improvement Greenhouse gas emissions reduction	Up to 10 FTE jobs	Improvement of women's and marginalised groups' participation and representation in waste sector through provision of low-skilled and gender balanced jobs, collection of gender-disaggregated employment data and adoption of inclusive workplace policies.	Smart waste registration systems (sensors, CCTV applications) on weighing systems, waste containers, automized waste separation, truck reference or ID recognition and maximum load of trucks

Implementation timeline: 2024-2026	**Action Owner and Implementing Agency**: Iași City Hall and contracted waste company Salubris SA
Indicative Project Costs: EUR 5.6 million (CAPEX: ca. EUR 4.8 million, OPEX: ca. EUR 0.8 million – est.)	**Other stakeholders and role:** Population, Companies, EPA Iași (monitoring)
Financing mechanisms and sources: National Resilience and Recovery Plan	

Key Direct Benefits:
Provision of additional jobs for installation, maintenance and data monitoring. Opportunities for low-skilled labour and gender balancing. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.

Key Indirect Benefits/Co-benefits:
Monitoring systems linked to central data system to improve separate waste collection.

Key Indicators & Metrics of success: Volume of mixed vs segregated waste Amount of litter from illegal dumping Volume of waste arriving at landfill Volume of compost produced		
Measure Impact through (improving) **State and Pressure indicators:** 29 Solid waste generation indicator 30 Solid waste collection indicator 31 Solid waste treatment indicator	Estimated measurements of **GHG reductions**: 11,730 tonnes CO_2e avoided per year. Emissions from construction are not included in this estimation.	Benefits in terms of climate change **adaptation & resilience**: Indirect savings on raw materials, energy and water consumption and reduction of GHG emissions by reusing and recycling waste materials
Quantitative benefits: Energy or maintenance saving, efficiency gains, employment created (up to 10 FTE jobs). Action could result in 11,730 tonnes of CO_2e avoided per year	**Qualitative benefits:** Cleaner air, quality of life benefits, improved liveability	

WS5 Digitisation of waste collection operations

	Sector: **Solid Waste**	**Supporting Strategic Objective(s) of:** **WAS-SO2 Greening of Waste Collection and Transport**
Action Type: Investment	**Linked GCAP Actions**: EN2 – Make decarbonization a key objective of the city's sustainable development/ environmental strategy, by optimizing transport of waste	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Current system of waste registration, collection and transport monitoring	
Priority Environmental Challenges addressed: Improving waste collection	**Supporting City (and or national) Policies and Plans**: Waste Management Plan Iași County 2020-2025 / Waste Master Plan Iași County 2008-2038 / National Recovery and Resilience Plan / National Waste Management Strategy	

Rationale and Justification for Action:
Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.

Description of Action:
Installation of systems for weighing the actual amount of waste collected per vehicle, provision of advanced computer programmes for planning and optimizing collection routes and fleet management. Optimizing the collection service will result in a significant reduction in GHG emissions and noise pollution and contribute to a more environmentally friendly and pleasant living environment. Further, the waste containers/bins can be equipped with a chip/sensor allowing for registration of ownership, volume of waste and as such the implementation of an accommodated tariffication system. The system could be enrolled in all parts of the city.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Access to green spaces Air quality improvement Greenhouse gas emissions reduction	Up to 10 FTE jobs	Improvement of women's and marginalised groups' participation and representation in waste sector through opportunity for hiring female truck drivers and mechanics, collection of gender-disaggregated employment data and adoption of inclusive workplace policies.	Entirely smart action. CCTV and weighing systems on trucks, sensors on garbage cans, identification of quality of waste directly linked to customer, mobile application (salubriscomenzi, existing on Android and IoS) which serves now only economic entities – to be extended to domestic customers

Implementation timeline: As from 2023	**Action Owner and Implementing Agency**: Iași City Hall and contracted waste company Salubris SA

<table>
<tr><td colspan="2">Indicative Project Costs:
EUR 0.5 million (CAPEX: ca. EUR 0.45 million; OPEX: ca. EUR 0.05 million -est.)</td><td colspan="2">Other stakeholders and role:
Population, companies, EPA Iași (monitoring)</td></tr>
<tr><td colspan="4">Financing mechanisms and sources:
City budget, potentially IFI funding.</td></tr>
<tr><td colspan="4">Key Direct Benefits:
Opportunity for hiring more female truck drivers and/or mechanics (to be further discussed with Salubris). Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.</td></tr>
<tr><td colspan="4">Key Indirect Benefits/Co-benefits:
Digital solutions for optimizing routing and fleet management and data collection (chips in containers/bins).</td></tr>
<tr><td colspan="4">Key Indicators & Metrics of success:
Public inquiries (complaints on collection services)
Statistics on collection time and trajectories</td></tr>
<tr><td>Measure Impact through (improving) State and Pressure indicators:
30 Solid waste collection indicator</td><td colspan="2">Estimated measurements of GHG reductions:
Assumed that the optimization of waste truck routings would reduce fuel consumption with 10%, this would result in 262 tonnes/CO_2e/year avoided. Differentiated tarification on waste collection may indirectly lead to more awareness and avoidance of waste, which could potentially result in 5,000-10,000 tonnes/CO_2e avoided</td><td>Benefits in terms of climate change adaptation & resilience:
Reduction of GHG emissions</td></tr>
<tr><td colspan="2">Quantitative benefits:
Energy or maintenance saving, efficiency gains, employment created (up to 10 jobs). Action could result in a reduction of 10% of fuel; hence 262 tonnes of CO_2e could be avoided per year.</td><td colspan="2">Qualitative benefits:
Cleaner air, quality of life benefits, improved liveability</td></tr>
</table>

WS6 Landfill gas utilisation at the landfill site

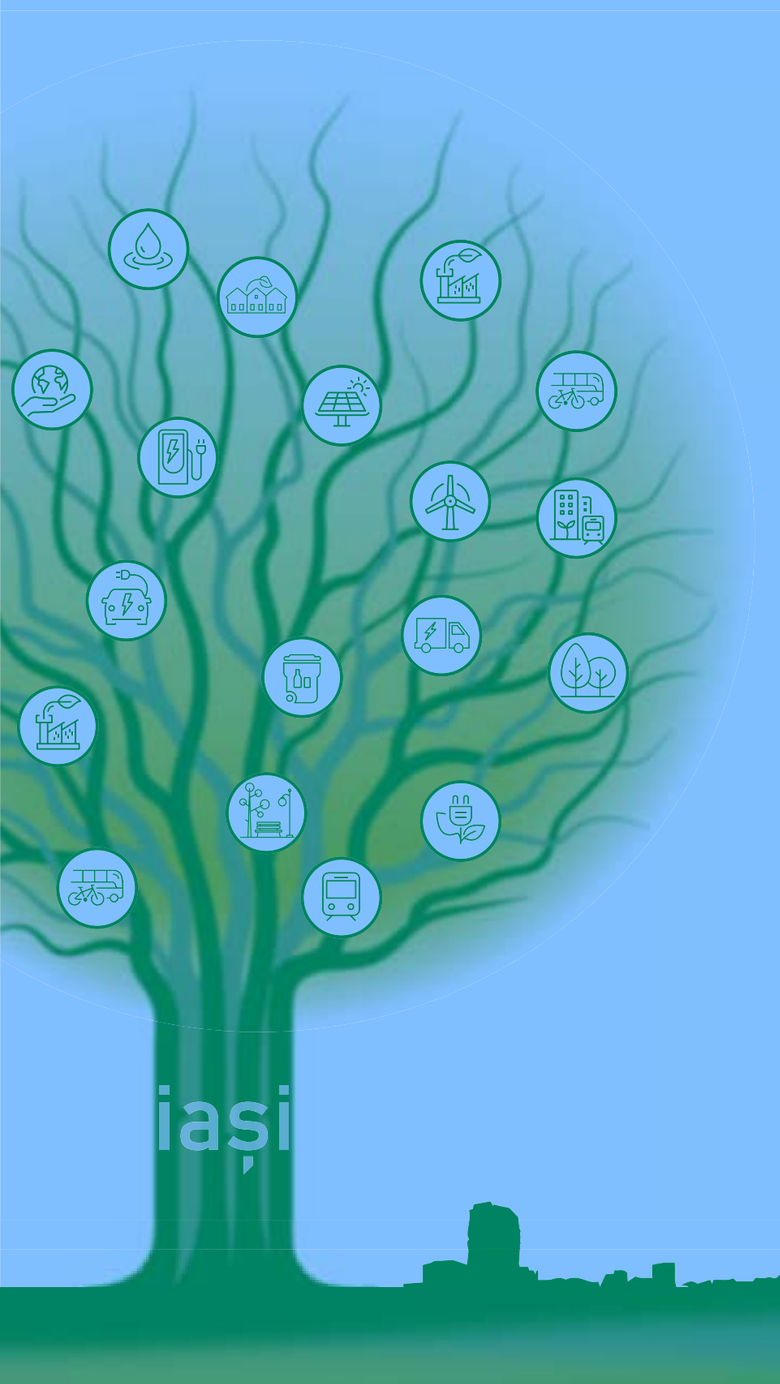
	Sector: **Solid Waste**	**Supporting Strategic Objective(s) of:** **WAS-SO3 Implementation of Waste-to-Energy Solutions**
Action Type: Investment	**Linked GCAP Actions**: EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing landfill activities	
Priority Environmental Challenges addressed: Biogas recovery, renewable energy applications	**Action Owner and Implementing Agency**: Iași City Hall and contracted waste company, Salubris SA	
Rationale and Justification for Action: Reducing environmental pollution by waste minimization and using waste as a secondary resource of materials and energy.		
Description of Action: Capture and valorisation of landfill gasses for production of electricity (local consumption at landfill site). Avoidance of methane (greenhouse gas) emissions and external electricity savings for all landfill operations. Administrative uncertainty because of future tender on landfill operations by Iași County. Financial support could be through the Swiss Financial Cooperation.		

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Energy Air quality improvement Greenhouse gas emission reduction	Up to 10 FTE jobs	Improvement of women's and marginalised groups' participation and representation in waste sector through gender balanced and inclusive employment, collection of gender-disaggregated employment data and adoption of inclusive workplace policies.	GHG capture and valorisation

Implementation timeline:	**Action Owner and Implementing Agency**:
Tentatively 2023	Iași City Hall and contracted waste company Salubris SA
Indicative Project Costs: EUR 1 million (CAPEX: ca. EUR 0.8 million, OPEX: ca. EUR 0.2 million – est.)	**Other stakeholders and role:** EPA Iași (monitoring)
Financing mechanisms and sources: Possibly city budget, waste management company. Swiss Financing Corporation.	
Key Direct Benefits: Some opportunities for employment (installation, monitoring, maintenance), gender balancing or social inclusion. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.	
Key Indirect Benefits/Co-benefits: N/A	
Key Indicators & Metrics of success: Volume of landfill gas recovered Electricity production	

Measure Impact through (improving) **State and Pressure indicators:**	Estimated measurements of **GHG reductions:**	Benefits in terms of climate change **adaptation & resilience**:
31 Solid waste treatment indicator 32 Landfill efficiency indicator	Could approximate 290,000 tonnes of CO_2e, based on a modelled volume of 32.3 million m³ of landfill gas with an indicative composition of 50% CH_4 and 40% CO_2 and recovered in the period 2021-2038 Density values are: CH_4=0.657/tonne and for CO_2=1.87 kg/tonne; 1kgCH_4=25kgCO_2e.	Avoidance of GHG emissions, production of green energy

Quantitative benefits:	**Qualitative benefits:**
Energy or maintenance saving, efficiency gains, employment created (up to 10 FTE jobs). Action could result in a saving of 290,000 tonnes of CO_2e.	Cleaner air, quality of life benefits, improved liveability



4.9. Water and wastewater actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
WA1: NRW reduction feasibility study / action plan				✓	✓
WA2: Implement / improve pressure zoning and DMAs				✓	✓
WA3: Implement real loss reduction program				✓	✓
WA4: Smart leak detection				✓	✓
WA5: Urban Drainage Master Plan				✓	✓
WA6: Feasibility Study for Re-Use of Treated Effluent and Sewage Sludge from Dancu WWTP		✓	✓	✓	✓
WA7: Extension of water supply system in Iași City Metropolitan Zone					✓
WA8: Extension of sewerage in Iași City Metropolitan Zone				✓	✓

PHOTO 56

PHOTO 57-59

SOURCE:
HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=563008955854198&SET=PB.100064352962882.-2207520000.&TYPE=3
HTTPS://WWW.FACEBOOK.COM/PHOTO.PHP?FBID=487085673446527&SET=PB.100064352962882.-2207520000.&TYPE=3

WA1 NRW reduction feasibility study / action plan

	Sector: Water and Wastewater
Action Type: Action / Investment	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve Urban Climate Change Resilience: Long Term Security of Water Supply WAT-SO4 Improve Energy Efficiency of Water and Wastewater Systems
Policy/Investment Action Classification: Action / Investment	**Linked GCAP Actions:** WA2 Implement / improve pressure zoning and DMAs WA3 Implement real loss reduction program
Priority Environmental Challenges addressed: Protection of water quality and resources	**Existing Linked Activities/Initiatives:** Ongoing activities of ApaVital leak detection and pipe repair departments
	Supporting City (and or national) Policies and Plans: Romania's 2021-2030 Integrated National Energy and Climate Plan[28] / Romania's integrated water strategy for the period 2010–2035[29] / National initiatives on the SDG 6.4. water use efficiency and on the SDG 13.1 Climate Resilience and Adaption

Rationale and Justification for Action:
Very high physical water losses in the distribution network, high NRW, above average in Europe and above economic water losses, far above UARL (unavoidable real losses).

28 https://www.climate-laws.org/geographies/romania/policies/romania-s-2021-2030-integrated-national-energy-and-climate-plan
29 https://www.eea.europa.eu/soer/2015/countries/romania

Description of Action:

Drafting, tendering (of parts which shall be executed by a third party) and execution of a NRW reduction feasibility study / action plan with the following main components:

1) Compilation of water consumption data
2) Continuation / acceleration of inventory of distribution network assets into GIS, focusing on information on pipe hydraulic parameter, age, pipe material, repair information including geolocating with the overall aim to (i) complete digitalization of water supply network for hydraulic modelling and (ii) prioritize distribution pipe sections for repair (and as well to better manage line assets)
3) Inventory, quantification, explanation of real losses, apparent losses and unbilled authorized consumption as well as estimate of unavoidable real losses and economic losses for all components for the water supply system (reservoirs, transmission mains, distribution system, house connections)
4) Hydraulic modelling of entire supply area inside city of Iași with the aim to (i) design optimized pressure zones: propose boundaries for pressure zones considering existing pump stations, prepare list of valves and appurtenances needed to establish optimized pressure zones, estimate of investment cost, elaborate staged procurement and installation plan; (ii) identify pilot DMAs for reduction of real losses and; (iii) prioritize investments into extension, replacement and repair
5) Design pilot DMAs, procurement and installation of bulk flow meters, pressure gauges (and pressure management and stop valves, if required) for the pilot DMAs, evaluation of data measured as well as establish water balance in the pilot DMAs before leak detection / repair
6) Further train ApaVital personnel in the Network Analysis Department in modern leak detection methods including smart metering
7) Design, (tender,) supervise, execute leak detection in one pilot DMA, with step testing to prioritize areas inside DMA for repair and repair works. Measure real losses in the pilot DMAs after leak repair and establish water balance
8) Estimate (specific) CAPEX needed and verify previously estimated unavoidable real losses and economic losses, draft staged investment plan for reduction of real losses to the level of economic losses as well as estimate savings in energy, OPEX and GHG emissions
9) Develop a “real losses reduction” action plan for quick wins comprising programmes for improving speed and quality of pipe break / leak detection and repairs, active leakage control, pressure management and pipe materials management
10) Develop an “apparent losses reduction” action plan comprising programmes for addressing meter inaccuracies / under-registration, remote / SMART metering, improving the accuracy of the billing system and quantifying unauthorized consumption
11) Concept for integration and extension of already used SCADA and software systems (GIS, hydraulic model, Customer Information System, Meter Data Base, Asset Management Software, ERP software) for the purpose of real-time network flow and pressure management with the overall aim to reduce real losses whilst maintaining flow and minimum pressure at customer connections.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes SMART aspects, Energy	Employment created (estimated 8 FTEs of additional leak detection experts at ApaVital)	Opportunity to increase female blue collar work force Collection of disaggregated data on neighbourhood water and sewage access to determine whether any social groups is disproportionately lacking and increase access	Smart customer water meters, smart bulk water and pressure meters, leak online monitoring software, SCADA

Implementation timeline: Q2 2023 – Q3 2024; duration: 18 months	**Action Owner and Implementing Agency**: ApaVital
Indicative Project Costs: CAPEX: For hired services: roughly EUR 0.6 million For equipment / works, roughly: EUR 0.6 million OPEX: N/A (only study)	**Other stakeholders and role:** None

Financing mechanisms and sources:
IFI grant, ApaVital contribution.

Key Direct Benefits:
Investment plan for reduction of physical water losses and NRW as basis for further investment. ApaVital will better understand the economical level of real water losses. Currently women employed in the sector are most heavily represented in administrative positions. ApaVital should leverage its action plan regarding the implementation of the principle of equal opportunities and treatment between women and men and its series of system procedures to promote an inclusive and supportive work environment to encourage more equal female employment across the workforce (including technical positions and senior management roles). Coordination between ApaVital and Iași municipality to collect disaggregated data to investigate whether neighbourhoods lacking water and sewage connections are disproportionately low-income or Roma. Coordination between ApaVital and Iași municipality to prioritize expansion of water and sewage connections to neighbourhoods where they are currently lacking.

Key Indirect Benefits/Co-benefits:
SCADA for network and pumping station operation. GIS, (online) hydraulic model, customer information system, meter data base, asset management software, billing and accounting software for informed investment decision making.

Key Indicators & Metrics of success:
IWA water balance: Volume of physical water losses

Energy used for raw water extraction, pumping, treatment and drinking water distribution

Measure Impact through (improving) **State and Pressure indicators:**
Pressure indicator 25.1
Pressure indicator 25.3

Estimated measurements of **GHG emissions**:
2,500 tonnes CO_2e per annum (once project phase WA3 has been accomplished).

Benefits in terms of climate change **adaptation & resilience**:
Reduction of real water losses reduces the need to tap new raw water sources in future.

Quantitative benefits:
Energy savings (5,000 MWh/year once project phase WA3 has been accomplished), Reduction of GHG emissions (see above), OPEX savings (EUR 1 million/year, once project phase WA3 has been accomplished), employment created (estimated 8 FTE additional leak detection experts at ApaVital)

Qualitative benefits:
Improved services for water supply and wastewater disposal

WA2 Implement / improve pressure zoning and District Metering Areas (DMAs)

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve Urban Climate Change Resilience: Long Term Security of Water Supply WAT-SO4 Improve Energy Efficiency of Water and Wastewater Systems
Action Type: Investment	**Linked GCAP Actions:** WA1 NRW reduction Feasibility Study / Action Plan WA3 Implement real loss reduction program	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing activities of ApaVital leak detection and pipe repair departments	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's 2021-2030 Integrated National Energy and Climate Plan / Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.4. water use efficiency and on the SDG 13.1 Climate Resilience and Adaption	

Rationale and Justification for Action:
Very high physical water losses in the distribution network, high NRW, above average in Europe and above economic water losses, far above UARL (unavoidable real losses)

Description of Action:
1) Prepare tender documents for procurement of necessary equipment (valves, bulk meters, etc.) and re-arrangement of pipe sections to establish / rearrange pressure zones and DMAs
2) Tender and procure and install equipment and execute works for establishing / rearranging of pressure zones and DMAs
3) Analyse real losses for all DMAs, prepare prioritized list of investment into real loss reduction for all DMAs

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes SMART aspects, energy	Employment created (estimated 8 FTEs of additional leak detection experts at ApaVital, same as WA1)	Opportunity to increase female blue collar work force Collection of disaggregated data on neighbourhood water and sewage access to determine whether any social groups is disproportionately lacking and increase access.	Smart customer water meters, smart bulk water and pressure meters, leak online monitoring software, SCADA

Implementation timeline: Q4 2024 – Q1 2026; duration: 18 months	**Action Owner and Implementing Agency**: ApaVital

Indicative Project Costs:
For hired services: roughly EUR 250,000
For equipment / works: (result of feasibility study), order of magnitude: EUR 2 million

OPEX: electricity savings expected (see below). Staff: EUR 50,000/year for additional leak detection staff (see below). Maintenance: EUR 30,000/year for new assets

Other stakeholders and role:
None

Financing mechanisms and sources:
IFI soft loan, ApaVital contribution.

Key Direct Benefits:
Network is properly sub-divided into DMAs, in which water losses can be monitored and controlled precisely as a pre-condition for water loss reduction programme / investment. ApaVital has the means for modern network management and can prioritize investments into water loss reduction. Currently women employed in the sector are most heavily represented in administrative positions; ApaVital should leverage its action plan regarding the implementation of the principle of equal opportunities and treatment between women and men and its series of system procedures to promote an inclusive and supportive work environment to encourage more equal female employment across the workforce (including technical positions and senior management roles). Coordination between ApaVital and Iași municipality to collect disaggregated data to investigate whether neighbourhoods lacking water and sewage connections are disproportionately low-income or Roma. Coordination between ApaVital and Iași municipality to prioritize expansion of water and sewage connections to neighbourhoods where they are currently lacking.

Key Indirect Benefits/Co-benefits:
SCADA for network and pumping station operation, GIS, (online) hydraulic model, customer meter data base, billing and accounting software

Key Indicators & Metrics of success:
IWA water balance: volume of physical water losses

Energy used for raw water extraction, pumping, treatment and drinking water distribution

Measure Impact through (improving) **State and Pressure indicators:**
Pressure indicator 25.1
Pressure indicator 25.3

Estimated measurements of **GHG emissions**:
2,500 tonnes CO_2e per annum (once project phase WA3 has been accomplished)

Benefits in terms of climate change **adaptation & resilience**:
Reduction of real water losses reduces the need to tap new raw water sources in future.

Quantitative benefits:
Energy savings (5,000 MWh/year once project phase WA3 has been accomplished), reduction of GHG emissions (see above), OPEX savings (EUR 1 million/year, once project phase WA3 has been accomplished), employment created (estimated 8 additional leak detection experts at ApaVital)

Qualitative benefits:
Improved services for water supply and wastewater disposal

WA3 Implement real loss reduction program

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve Urban Climate Change Resilience: Long Term Security of Water Supply WAT-SO4 Improve Energy Efficiency of Water and Wastewater Systems
Action Type: Investment	**Linked GCAP Actions**: WA2 Implement / improve pressure zoning and DMAs WA3 Implement real loss reduction program	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing activities of ApaVital leak detection and pipe repair departments	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's 2021-2030 Integrated National Energy and Climate Plan / Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.4. water use efficiency and on the SDG 13.1 Climate Resilience and Adaption	
Rationale and Justification for Action: Very high physical water losses in the distribution network, high NRW, above average in Europe and above economic water losses, far above UARL (unavoidable real losses)		
Description of Action: Execute leak detection and repair, starting with the highest prioritized DMAs. By extension, this will reinforce and strengthen the capacity and efficiency of the department for reducing water losses; implementing specialised software in order to identify critical points in water distribution system and other digitalization projects; creating district measurement areas; permanent flow monitoring by creating area measurement points; and flow analysis on each measurement point during peak consumption.		
	Job Creation Potential	**Gender and Social Inclusion Aspects**
Cross-Cutting Themes SMART aspects, Energy	Employment created (estimated 8 FTEs of additional leak detection experts at ApaVital, same as WA1)	Opportunity to increase female blue collar work force Collection of disaggregated data on neighbourhood water and sewage access to determine whether any social groups is disproportionately lacking and increase access.
		SMART Aspects Smart customer water meters, smart bulk water and pressure meters, leak online monitoring software, SCADA.
Implementation timeline: Q1 2025-Q4 2027; 36 months	**Action Owner and Implementing Agency**: ApaVital	
Indicative Project Costs: For equipment / works: unknown (result of feasibility study), order of magnitude: EUR 10 million OPEX: electricity: savings expected (see below). Staff: EUR 50,000/year for additional leak detection staff (see below). Maintenance: EUR 70,000/year for new assets (but not for replaced or repaired pipes)	**Other stakeholders and role:** N/A	
Financing mechanisms and sources: IFI soft loan, ApaVital contribution.		

Key Direct Benefits:
Real water losses and NRW are being reduced to economic level, related energy savings for pumping and treatment and ApaVital is fit in modern network management / leak detection. Currently, women employed in the sector are most heavily represented in administrative positions. ApaVital should leverage its action plan regarding the implementation of the principle of equal opportunities and treatment between women and men and its series of system procedures to promote an inclusive and supportive work environment to encourage more equal female employment across the workforce (including technical positions and senior management roles). Coordination between ApaVital and Iași municipality to collect disaggregated data to investigate whether neighbourhoods lacking water and sewage connections are disproportionately low-income or Roma. Coordination between ApaVital and Iași municipality to prioritize expansion of water and sewage connections to neighbourhoods where they are currently lacking.

Key Indirect Benefits/Co-benefits:
GIS, (online) hydraulic model, customer meter data base, billing and accounting software

Key Indicators & Metrics of success:
IWA water balance: volume of physical water losses

Energy used for raw water extraction, pumping, treatment and drinking water distribution

Measure Impact through (improving) **State and Pressure indicators:** Pressure indicator 25.1 Pressure indicator 25.3	Estimated measurements of **GHG emissions:** 2,500 tonnes CO_2eq per annum	Benefits in terms of climate change **adaptation & resilience**: Reduction of real water losses reduces the need to tap new raw water sources in future.
Quantitative benefits: Energy savings (5,000 MWh/year, reduction of GHG emissions (see above), OPEX savings (EUR 1 million/year), employment created (estimated 8 additional leak detection experts at ApaVital)		**Qualitative benefits:** Improved services for water supply and wastewater disposal

WA4 Smart leak detection

	Sector: Smart City	**Supporting Strategic Objective(s) of:** SMA-SO4 Water – smart solutions to reduce NRW
Action Type: Investment	**Linked GCAP Actions**: WA1 NRW reduction feasibility study / action plan	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Reduce NRW	
Priority Environmental Challenges addressed: Protect water resources Reduce water loss (NRW – non revenue water)	**Supporting City (and or national) Policies and Plans**: Romania's 2021-2030 Integrated National Energy and Climate Plan / Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.4 water use efficiency and on the SDG 13.1 Climate Resilience and Adaption	
Rationale and Justification for Action: Reduce water loss		
Description of Action: Measure and predict water leaks by using artificial intelligence based on flow and pressure data and detect leaks based on satellite images. Start with needs analysis and market consultation. The first step is to define with ApaVital, the prioritiy for areas where water leakage is the biggest, based on the needs defined by ApaVital. The second step is to do a market consultation of the different solutions that exist and can be offered. The third step is the writing of an RFP and tender process to be launched.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Water resources, energy savings	Employment created (estimated 1 FTE of additional SCADA operator at ApaVital)	Opportunity for female white collar work force to be trained in SCADA operation. Online and in-person public consultations to understand which residents and neighbourhoods are impacted by leaks and to identify differing needs	Entirely smart action. Smart customer water meters, smart bulk water and pressure meters, leak online monitoring software, SCADA

Implementation timeline: Medium term: 2023-2025	**Action Owner and Implementing Agency**: ApaVital
Indicative Project Costs: CAPEX needs analysis + market consultation: EUR 50,000 – 100,000 Indicative CAPEX budget depending on the scope: EUR 0.75-2 million OPEX: EUR 250,000-700,000 / year	**Other stakeholders and role:** Smart city office
Financing mechanisms and sources: IFI grant, ApaVital budget.	
Key Direct Benefits: Online and in-person public consultations should be held to understand which residents and neighbourhoods are impacted by leaks and to identify differing needs.	
Key Indirect Benefits/Co-benefits: Improved systems such as SCADA for network and pumping station operation, GIS, (online) hydraulic model, investment decision, ERP, etc.	

Key Indicators & Metrics of success: NRW reduced with substantial percentage		
Measure Impact through (improving) **State and Pressure indicators:** N/A	Estimated measurements of **GHG reductions**: N/A	Benefits in terms of climate change **adaptation & resilience**: Reduction of real water losses reduces the need to tap new raw water sources in future.
Quantitative benefits: Energy and maintenance saving, efficiency gains, employment created, reduced water loss	**Qualitative benefits:** Improved use of water resources	

WA5 Urban Drainage Master Plan

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve urban climate change resilience: long term security of water supply WAT-SO2 Improve urban climate change resilience: reduce number and extent of flash floods WAT-SO3 Reduce pollution of Bahlui river and tributaries WAT-SO4 Improve energy efficiency of water and wastewater systems
Action Type: Action	**Linked GCAP Actions**: AD3 Development of a Strategic Emergency Response Plan, Reduce Number and extent of flash floods EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, Improve Energy Efficiency of Water and Wastewater Systems	
Policy/Investment Action Classification: Action	**Existing Linked Activities/Initiatives:** N/A	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.3. improve water quality, wastewater treatment and safe reuse	

Rationale and Justification for Action:
Pure combined network contributing pollution of River Bahlui due to overflows at rain events; flash floods occur regularly due to sewerage capacity limitations; high infiltration into sewerage network

Description of Action:

Drafting, tendering (of parts which shall be executed by third party), execution of an Urban Drainage Master Plan with the following main components:

1) Compilation of sewage inflow data
2) Inventory of characteristics of (sub-)catchment areas (slope, surface imperviousness, surface roughness coefficients, depression storage, infiltration rates, Darcy coefficient of infiltration, etc.), semi-automated evaluation of paved areas by GIS applications, etc.
3) Compilation of long-term precipitation statistical data and derivation of design rains
4) Support / continuation / acceleration of inventory of sewerage assets into GIS, focusing on information on hydraulic parameter, pipe age, pipe material, repair information including geolocating with the overall aim to (i) provide digitized sewerage network for hydraulic modelling and (ii) prioritize sewer sections for repair (and as well to better manage line assets)
5) Estimate rate of infiltration by measurement campaigns and other methods for sub-catchment areas, recommend target infiltration (economic level of infiltration)
6) Hydro-dynamic stormwater, runoff and pollution load modelling of catchment area (towards Dancu WWTP) with the aim to:
   i. Identify hydraulic bottlenecks in the sewerage
   ii. Identify areas prone to flooding and predict flood level / duration / probability of occurrence for various rain events, define target number of floods / probability of flood events
   iii. Simulate long term pollution loads discharged by storm water overflows and compare with pollution loads discharged by WWTPs, make proposal for measures to reduce discharge pollution loads by storm water overflows
   iv. Define annual target pollution loads for storm water overflows that balance protection of environment and economic aspects
   v. Verify storm water retention volumes at various locations (or quantify additional storage volume, if needed), in terms of hydraulics and reduction of discharge of pollution loads
   vi. Verify hydraulic conditions of existing overflows (weir level, weir length, etc.) and/or propose measures for improvement in terms of hydraulics and reduction of discharge of pollution loads
   vii. Consider scenarios with reduced infiltration and reduced storm water inflow into sewerage
7) Estimate (specific) CAPEX needed and draft staged investment plan to:
   i. Remove hydraulic bottlenecks in the sewerage
   ii. Reduce infiltration to the target level
   iii. Reduce number of floods to the target level
   iv. Reduce pollution loads from storm water overflows to target level
8) Elaborate concept for preventive cleaning, flushing of sewer sections prone to clogging and for improvement of management and execution of flushing emergency / clearing services, estimate related CAPEX and OPEX
9) Elaborate concept for initial / regular sewer CCTV inspection and systematic evaluation of data / incorporation of data into GIS, estimate related CAPEX and OPEX
10) Outline path to reduce storm water inflow into the sewerage addressing requirements and needed changes in laws and regulations (implement separate sewerage for new building areas) organization and administration by ApaVital, customer behaviour and incentives for customers to reduce storm water inflow (public awareness, public acceptance and legal issues for implementation of tariff reform – for example splitting wastewater fee into sewage and storm water discharge fee, etc.), technical issues (possibilities for separate storm-water discharge, storage, re-use, spot infiltration, etc.), estimate related CAPEX and OPEX and changes in tariffs, draft implementation and investment scenarios
11) Assess the potential in private houses for grey water separation and re-use and the effects on water consumption and environment. Assess legal, administrative, technical, tariff, cost aspects that would promote storm and grey water separation and re-use in private households, including incentives for water saving, subsidies for re-use of storm and grey water.
12) Develop concept for re-use of storm water not discharged into the sewerage for irrigation, fish-farming and other purposes
13) Estimate effects of reducing infiltration and storm water inflow on the pollution concentrations of the raw wastewater arriving at WWTP Dancu and estimate positive effects on treatment process and (specific) savings in energy, OPEX, GHG emissions with reduced infiltration / storm water inflow.

	Job Creation Potential	Gender and Social Inclusion Aspects	SMART Aspects
Cross-Cutting Themes Land use, green spaces, biodiversity and nature-based solution actions Adaption and resilience actions	Since only study: none. Opportunity for ApaVital modelling specialist to learn storm water modelling and long-term pollution load modelling.	Opportunity for female white collar work force to learn hydraulic modelling. Collection of disaggregated data on neighbourhood water and sewage access to determine whether any social groups is disproportionately lacking and increase access.	Models for precipitation-run-off & combined sewerage and for long term pollution load simulation
Implementation timeline: Q2 2023-Q4 2024; duration: 18 months (for the entire Master Plan)	**Action Owner and Implementing Agency**: ApaVital		
Indicative Project Costs: CAPEX: For hired services, roughly EUR 1.5 million (for the entire Master Plan) OPEX: N/A (only study)	**Other stakeholders and role:** City administration (roads, road drainage), Local environmental authority		
Financing mechanisms and sources: IFI grant, ApaVital contribution.			
Key Direct Benefits: Investment plan for elimination of hydraulic bottlenecks in the sewerage network, for reduction of flash-floods, for reduction of infiltration into sewerage, for reduction of pollution discharged via stormwater overflows as basis for further investment and ApaVital better understands the economical level of infiltration. Currently women employed in the sector are most heavily represented in administrative positions. ApaVital should leverage its action plan regarding the implementation of the principle of equal opportunities and treatment between women and men and its series of system procedures to promote an inclusive and supportive work environment to encourage more equal female employment across the workforce (including technical positions and senior management roles). Coordination between ApaVital and Iași municipality to collect disaggregated data to investigate whether neighbourhoods lacking water and sewage connections are disproportionately low-income or Roma. Coordination between ApaVital and Iași municipality to prioritize expansion of water and sewage connections to neighbourhoods where they are currently lacking.			
Key Indirect Benefits/Co-benefits: Reduce pollution of Bahlui river and tributaries GIS, hydraulic sewerage model, customer information system, meter data base, asset management software, billing and accounting software			
Key Indicators & Metrics of success: Measurements of Bahlui river water quality Number of storm water overflows Number of flash floods Number of complaints on blocked sewers			
Measure Impact through (improving) **State and Pressure indicators:** State indicators 2, 2.1 and 2.2 Pressure indicators 27, 27.1, 28 and 28.1	Estimated measurements of **GHG reductions**: 700 tonnes CO_2eq/year (if groundwater infiltration to sewerage is being reduced from currently estimated 50% to future possible 25%)	Benefits in terms of climate change **adaptation & resilience**: Protection of water quality, reduction of pollution of Bahlui River	
Quantitative benefits: Reduction of discharge of pollution loads into Bahlui river (number of storm water overflows reduced from currently 69/100km of sewerage to 40/100km of sewerage), energy savings (roughly 2,500MWh/year by reduction of wastewater flows to be pumped and treated), reduction of GHG emissions (see above), OPEX savings (roughly EUR 500,000/year)			**Qualitative benefits:** Better services for wastewater disposal, better biological water quality parameter of River Bahlui and finally Prut river

WA6 Feasibility Study for Re-Use of Treated Effluent and Sewage Sludge from Dancu WWTP

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve urban climate change resilience: long term security of water supply WAT-SO3 Reduce pollution of Bahlui river and tributaries
Action Type: Action	**Linked GCAP Actions**: WA8 Extension of sewerage in Iași City Metropolitan Zone	
Policy/Investment Action Classification: Action	**Existing Linked Activities/Initiatives:** None	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.3, improve water quality, wastewater treatment and safe reuse	

Rationale and Justification for Action:
Treated effluent of Dancu WWTP discharged without any re-use, sewage sludge landfilled at low solids content

Description of Action:
Tendering, execution of a Feasibility Study that investigates the potential cost and benefits of re-use of treated effluent and sewage sludge from Dancu WWTP with the following tasks:

1) Forecast of treated effluent and sewage sludge volumes and quality (considering potential changes in flow and quality of raw wastewater due to measures to reduce infiltration into sewerage and considering changes in process / operation at Dancu WWTP)
2) Compilation of existing law and legal regulations for reuse of treated effluent and sewage sludge
3) Outline of feasible alternatives for reuse of treated effluent and sewage sludge, description of further treatment (if needed)
4) Estimate of potential for consumption and distribution of treated effluent in agriculture, plus related CAPEX and OPEX
5) Estimate of potential for consumption and distribution of treated effluent for other consumers (for example fish farming), plus related CAPEX and OPEX
6) Estimate the effect on the environment (receiving water with reduced / no pollution discharge and environment where treated effluent is being transported / distributed)
7) Estimate of potential for consumption and distribution of sewage sludge for agriculture, plus related CAPEX and OPEX
8) Estimate of potential for consumption and distribution of sewage sludge for other re-use paths (land use, mono- and co-incineration, etc.)
9) Estimate the effect on the environment (no more landfilling of sewage sludge / environment where sewage is being transported and applied / air when sewage sludge is being transported / incinerated)
10) Elaboration on legal, administrative, technical requirements for the most favourable re-use paths for treated effluent and sewage sludge
11) Development of staged implementation concept for the most favourable re-use paths for treated effluent and sewage sludge

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Land use, green spaces, biodiversity and nature-based solution actions Adaption and resilience actions	Since only study: none.	Collect disaggregated data to investigate potential impacts of sewage sludge re-use on low-income or Roma groups to ensure marginalised groups would benefit and not be harmed.	No SMART/digital aspects are envisaged
Implementation timeline: Q2 2023-Q3 2023; duration: 6 months	**Action Owner and Implementing Agency**: ApaVital		

Indicative Project Costs:
Only study:
CAPEX: For hired services, roughly EUR 300,000 (for entire study: effluent and sludge reuse).
OPEX: N/A (only study)
Later investment into treated effluent pump station for 1 Mio. m3/a:
CAPEX: EUR 1 million
OPEX: Electricity: savings expected (see below). Staff: EUR 10,000/year for additional operator (see below). Maintenance: EUR 10,000/year for new assets

Other stakeholders and role:
Local environmental authority

Financing mechanisms and sources:
IFI grant, ApaVital contribution.

Key Direct Benefits:
ApaVital better understands the economic potential and environment improvements / impacts of marketing treated effluent and sewage sludge, including related investment plans so that further investments can be kicked-off. Currently women employed in the sector are most heavily represented in administrative positions. ApaVital should leverage its action plan regarding the implementation of the principle of equal opportunities and treatment between women and men and its series of system procedures to promote an inclusive and supportive work environment to encourage more equal female employment across the workforce (including technical positions and senior management roles). Coordination between ApaVital and Iași municipality to collect disaggregated data to investigate whether neighbourhoods lacking water and sewage connections are disproportionately low-income or Roma. Coordination between ApaVital and Iași municipality to prioritize expansion of water and sewage connections to neighbourhoods where they are currently lacking.

Key Indirect Benefits/Co-benefits:
Cross-cutting such as waste management (reduction of solid waste)

Key Indicators & Metrics of success:
Measurements of Bahlui river water quality
Quantity of sewage sludge re-used compared to land-filled

Measure Impact through (improving) **State and Pressure indicators:**
State indicators 2, 2.1 and 2.2

Estimated measurements of **GHG reductions**:
100 tonnes CO_2eq/year, if out of roughly 43 million m3/year treated wastewater 1 million m3/year treated wastewater are being reused (savings of drinking water)

Benefits in terms of climate change **adaptation & resilience:**
Protection of water quality, reduction pollution of Bahlui river

Quantitative benefits:
Reduction of discharge of pollution loads into Bahlui river. Energy savings (roughly 500MWh/year by reduction of drinking water consumption of 1 million m3/year, but considering additional pumping of treated effluent). Reduction of GHG emissions (see above), OPEX savings (roughly EUR 100,000/year by reduction of drinking water consumption of 1 millon m3/year). Employment created (estimated 1 additional operator for treated effluent pump station at ApaVital)

Qualitative benefits:
Better biological water quality parameter of River Bahlui and Prut river; reduction risk of soil and groundwater pollution by landfilled sewage sludge.

WA7 Extension of water supply system in Iași City Metropolitan Zone

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO1 Improve urban climate change resilience: long term security of water supply WAT-SO4 Improve energy efficiency of water and wastewater systems
Action Type: Investment	**Linked GCAP Actions**: WA1 NRW reduction Feasibility Study / Action Plan WA2 Implement / improve pressure zoning and DMAs WA3 Implement real loss reduction program	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing programme LIOP co-financed from the EU Cohesion Fund. The project details can be found in the financing application prepared by ApaVital under the LIOP project and project scope has been already approved by the Municipal Council.	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's 2021-2030 Integrated National Energy and Climate Plan / Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.4, water use efficiency and on the SDG 13.1 Climate Resilience and Adaption	
Rationale and Justification for Action: Extension and rehabilitation of piped water supply		

Description of Action:
Part of the LIOP investment project referring to extension measures of water supply network in Iași city Metropolitan Zone North and South.
IS-CL01 Zone North:
Lot 1. Object 1 (Iași TAU): Rehabilitation of water supply network (9.6km)
IS-CL02 Zone South:
Lot 1. Object 1: Main water pipeline Chirita-Ciurea WPT. Pipeline (19.8km) and 2 pump stations
Lot 1. Object 2 (Barnova TAU): Extension of water supply network (1.9km)
Lot 1. Object 4 (Ciurea TAU): 500 house connections
Lot 3. Object 7: Main pipeline Chirita – Osoi (22.3km) / pump station Chirita 2
Lot 3. Object 9: new supply network Osoi (13.3km)
Lot 3. Object 10: Main water pipeline to Osoi tank (0.9km)

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Adaption and resilience actions	Employment of about 20 FTE new operational staff for water distribution network, pump stations	Opportunity to increase female blue collar work force Collection of disaggregated data on neighbourhood water access to determine whether any social groups is disproportionately lacking and ensure extension of access benefits marginalised groups.	Smart water meters, SCADA for control of new pump stations
Implementation timeline: Status IS-CL01: tender documents finalized and start of construction works expected 2023, with estimated completion 2025 Status IS-CL02: ongoing works, with estimated completion 2024	**Action Owner and Implementing Agency**: ApaVital		

Indicative Project Costs:
Figures including water supply and sewerage measures:
IS-CL01 Zone North:
For Lot 1: EUR 8.7 million (RON 42.8 million)
For Lot 2: EUR 8.7 million (RON 43.1 million)
IS-CL02 Zone South:
For Lot 1: EUR 15.9 million (RON 78.2 million)
For Lot 2: EUR 5.8 million (RON 28.4 million)
For Lot 3: EUR 13.1 million (RON 64.4 million)

Other stakeholders and role:
Co-financed from the EU Cohesion Fund, state budget, local council's budgets and the Regional Operator Budget through the LIOP Sectoral Operational Programme under Priority Axis 3: "Development of environmental infrastructure under conditions of efficient resource management"

Financing mechanisms and sources:
Co-financed from the EU Cohesion Fund, state budget, local council's budgets and the Regional Operator Budget through the LIOP Sectoral Operational Programme

Key Direct Benefits:
Contribution to the legally required goal that 99% of population having access to water

Key Indirect Benefits/Co-benefits:
GIS (geolocation solution under implementation), (online) hydraulic model, customer information system, meter data base, asset management software ("CROS" implemented), operational integrated platform (under procurement), installation of smart customer meters (project in preparation, partly ongoing)

Key Indicators & Metrics of success:
Connection rate to piped water supply (% of population)

Measure Impact through (improving) **State and Pressure indicators:**
N/A (connection rate not listed in the state and pressure indicators)

Estimated measurements of **GHG reductions**:
N/A (no reduction expected)

Benefits in terms of climate change **adaptation & resilience:**
Access to (piped) water for all population

Quantitative benefits:
Connection rate to water supply increased, employment created (additional number of operators)

Qualitative benefits:
Improved services for water supply and wastewater disposal

WA8 Extension of sewerage in Iași City Metropolitan Zone

	Sector: Water and Wastewater	**Supporting Strategic Objective(s) of:** WAT-SO2 Improve urban climate change resilience: reduce number and extent of flash floods WAT-SO3 Reduce pollution of Bahlui river and tributaries
Action Type: Investment	**Linked GCAP Actions**: AD3 Development of a Strategic Emergency Response Plan, Reduce number and extent of flash floods	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Ongoing programme LIOP co-financed from the EU Cohesion Fund. The project details can be found in the financing application prepared by ApaVital under the LIOP project and project scope has been already approved by the Municipal Council.	
Priority Environmental Challenges addressed: Protection of water quality and resources	**Supporting City (and or national) Policies and Plans**: Romania's 2021-2030 Integrated National Energy and Climate Plan / Romania's integrated water strategy for the period 2010–2035 / National initiatives on the SDG 6.4, water use efficiency and on the SDG 13.1 Climate Resilience and Adaption	
Rationale and Justification for Action: Extension and rehabilitation of sewerage		

Description of Action:
IS-CL01 Zone North:
Lot 1. Object 1 (Iași TAU): Rehabilitation of sewerage (7,0km) / Extension of sewerage (5,9km) / 7 sewage pump stations.
Lot 2. Object 2 (Holboca TAU): Extension of sewerage (2,7km) / Dancu sewage pump station.
Lot 2. Object 3 (Rediu TAU): Extension of sewerage (15,9km) / 8 sewage pump stations.
Lot 2. Object 4 (Valea Lupului TAU): Extension of sewerage (3,3km) / 2 sewage pump stations
IS-CL02 Zone South:
Lot 1. Object 2 (Barnova TAU); Extension of sewerage (8,6km) / 8 sewage pump stations
Lot 1. Object 4 (Ciurea TAU): Extension of sewerage (20,2km) / 12 sewage pump stations
Lot 1. Object 5 (Dumbrava-Lunca Cetatuii): 1 sewage pump station
Lot 2. Object 3 (Miroslava TAU): Extension of sewerage (21,6km) / 14 sewage pump stations
Lot 3. Object 6 (Tomesti TAU): Extension of sewerage (5,7km) / 5 sewage pump stations
Lot 3. Object 9 (Osoi): Extension of sewerage (12,8km) / 8 sewage pump stations

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Water resources Public health and wellbeing	Employment of up to 20 FTE new operational staff for sewer network, pump stations	Opportunity to increase female blue collar work force Collection of disaggregated data on neighbourhood sewage access to determine whether any social groups is disproportionately lacking and ensure extension of access benefits marginalised groups.	SCADA for control of new pump stations
Implementation timeline: Status IS-CL01: tender documents finalized, with start of construction works in 2023 and estimated completion 2025 Status IS-CL02: ongoing works, with estimated completion 2024	**Action Owner and Implementing Agency**: ApaVital		

Indicative Project Costs:
Figures including water supply and sewerage measures:
IS-CL01 Zone North:
For Lot 1: EUR 8.7 million (RON 42.8 million)
For Lot 2: EUR 8.7 million (RON 43.1 million)
IS-CL02 Zone South:
For Lot 1: EUR 15.9 million (RON 78.2 million)
For Lot 2: EUR 5.8 million (RON 28.4 million)
For Lot 3: EUR 13.1 million (RON 64.4 million)

Other stakeholders and role:
Co-financed from the EU Cohesion Fund, state budget, local council's budgets and the Regional Operator Budget through the LIOP Sectoral Operational Programme under Priority Axis 3: "Development of environmental infrastructure under conditions of efficient resource management"

Financing mechanisms and sources:
Co-financed from the EU Cohesion Fund, state budget, local council's budgets and the Regional Operator Budget through the LIOP Sectoral Operational Program

Key Direct Benefits:
Contribution to the legally required goal that 98% of the population is connected to sewerage in urban agglomerations

Key Indirect Benefits/Co-benefits:
Reduce Pollution of Bahlui river and tributaries
GIS (geolocation solution under implementation), hydraulic model for sewerage, asset management software ("CROS" implemented)

Key Indicators & Metrics of success:
Connection rate to sewerage (% of population)

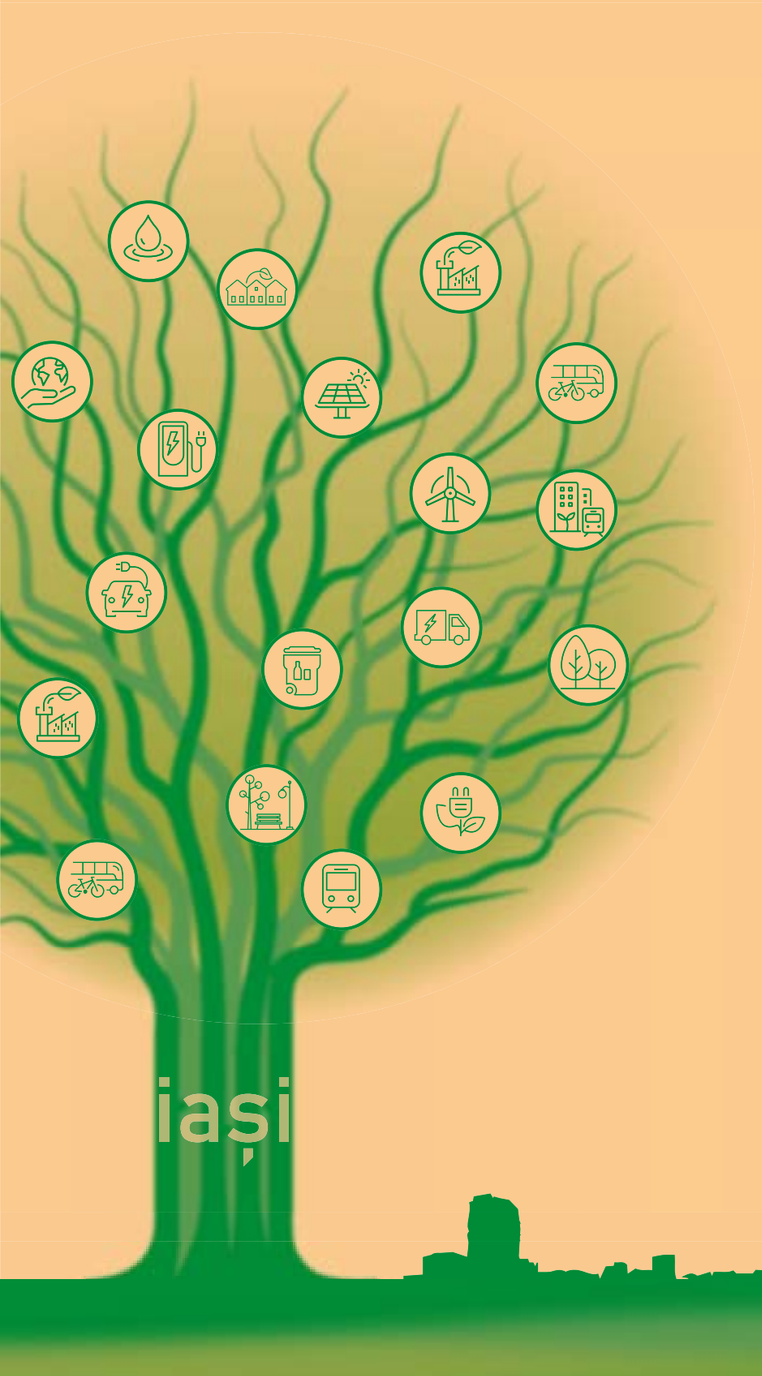
Measure Impact through (improving) **State and Pressure indicators:**
Pressure indicator 26

Estimated measurements of **GHG reductions**:
N/A (no reduction expected)

Benefits in terms of climate change **adaptation & resilience:**
Benefits in terms of connection to sewerage for all population

Quantitative benefits:
Connection rate to sewerage increased, employment created (additional number of operators)

Qualitative benefits:
Improved services for water supply and wastewater disposal



4.10. Energy and lighting actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
EN1: Fuel switch at Holboca Combined Heat and Power Plant (CHPP), including connection to gas network	✓	✓		✓	
EN2: Make decarbonization a key objective of the city's sustainable development / environmental strategy	✓	✓			
EN3: Increase awareness of population regarding energy efficiency	✓				
EN4: Refurbishment of the DH network	✓				
EN5: Photovoltaic Park Tomesti – Iași ApaVital, 25 MW	✓				

PHOTO 60-61

PHOTO 62-64

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EN1 Fuel switch at Holboca Combined Heat and Power Plant (CHPP), including connection to gas network

	Sector: Energy **Supporting Strategic Objective(s) of:** ENE-SO1 Improved energy efficiency and intensity
Action Type: Investment **Linked GCAP Actions**: EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, by commissioning of RES capacity in Iași 1 CHPP	
Policy/Investment Action Classification: Investment **Existing Linked Activities/Initiatives:** Renewal and greening of power generation capacity	
Priority Environmental Challenges addressed: High levels of air pollution **Supporting city (and or national) Policies and Plans**: Sustainable Energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU) project "Rehabilitation of the district heating system in Iași municipality in order to comply with environmental standards looking emissions into the atmosphere and to increase energy efficiency in urban heat supply"	
Rationale and Justification for Action: Improve energy efficiency and increase renewable energy sources in the energy consumption mix. This investment is conditioned by increasing gas supply capacity in Iași City, including the gas connection investment referring to full replacement of the existing plant with a high efficiency gas-fired CHPP, with the benefit of tangible CO_2 emissions reductions.	
Description of Action: Planned coal-to-gas fuel switch at Holboca CHPP will bring a threefold decrease of CO_2 emissions. Estimated duration of securing financing/procurement/construction is 4 years. Facilitation of gas transport capacity increase in Iași City.	

	Job Creation Potential	Gender and Social Inclusion Aspects	SMART Aspects
Cross-Cutting Themes Greenhouse gas emissions reductions Air Quality	Construction: Works appointed to a general contractor, no extra jobs during the construction period (4 years) Operation: No new jobs are envisaged, as the investment is a brownfield and operation of the gas-fired capacity will be covered with existing personnel.	Collection of gender-disaggregated employment data of staff working at Holboca including gender distribution of staff at all seniority levels, management positions and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.	The investment shall include new EMS-SCADA system, integrated with Iași 1 CHPP automation equipment for data communication and transmission to the System Operator
Implementation timeline: 2027	**Action Owner and Implementing Agency**: Iași City Hall and Iași DH operator Termoservice		
Indicative Project Costs: CAPEX up to EUR 96 million (no clear indication on the intended installed capacity of the gas-fired unit). The figure addresses a new capacity of about 60 MW and includes the gas connection investment cost of EUR 22 million OPEX: EUR 4.7 millionEUR/5 years	**Other stakeholders and role:** Iași City Hall- Procurement Department for public utilities, Environmental NGOs, Citizens		
Financing mechanisms and sources: City budget, IFIs. EU ERDF & NRRP programmes.			
Key Direct Benefits: Improvement of air quality – much lower PM and SO_2 emissions are expected, substantial reduction of CO_2 emissions.			
Key Indirect Benefits/Co-benefits: Removal of solid waste generation (coal ash and slag)			
Key Indicators & Metrics of success: 198,033 CO_2 emission reduction [tonnes/year]			
Measure Impact through (improving) **State and Pressure indicators:** Annual CO_2 equivalent emissions per capita Average daily concentrations of PM2.5, PM10, SO_2, NO_x	Estimated measurements of **GHG reductions**: ~ 200,000 tonnes of CO_2		Benefits in terms of climate change **adaptation & resilience**: Fuel switch will contribute to deceleration of GHG annual increase at city level
Quantitative benefits: Energy savings, efficiency gains, employment created during construction phase, GHG and other emissions reduction		**Qualitative benefits:** Cleaner air, quality of life benefits	

EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy

	Sector: Energy	**Supporting Strategic Objective(s) of:** ENE-SO3 Achieve carbon footprint reduction at city level
Action Type: Policy	**Linked GCAP Actions**: BU1 Improving the energy efficiency of private buildings BU4 Building nZEB plus housing for young people at risk TR1 Extension of the coverage for the public transport system and renewal of the fleet LA1 Create a green corridors network AD1 Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures	
Policy/Investment Action Classification: Policy	**Existing Linked Activities/Initiatives:** Alignment to the EU taxonomy regarding reduction of carbon footprint	
Priority Environmental Challenges addressed: Reduction of GHG emissions and local pollutants emissions	**Supporting city (and or national) Policies and Plans**: Sustainable energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU)	

Rationale and Justification for Action:
Improve energy efficiency and increase renewable energy sources in the energy consumption mix.

Description of Action:
Update the environmental policy of the City Hall with a distinct decarbonization objective for all activities performed by the city (e.g. public transport). This policy action is the first step to be taken in achieving the strategic goal of harmonizing the entire pool of activities developed at city level in full compliance with the EU taxonomy related to decarbonization, i.e. to evaluate, abate, monitor and control the carbon footprint of each activity. It comprises a structural update of the existing city environmental / sustainable development strategies with inclusion of decarbonization as a specific objective.

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Public transport Buildings and industry	No new jobs will be created – strategy revision shall be outsourced to external consultancy	Mainstreaming gender and social inclusion may be also included in the updated strategy as an explicit objective	Monitoring of decarbonization-related indicators claims and implementation of a cross-platform, smart monitoring tool, as anyone can acknowledge the city progress anytime.

Implementation timeline: 2023	**Action Owner and Implementing Agency**: Municipality of Iași	
Indicative Project Costs: EUR 20,000 OPEX:N/A	**Other stakeholders and role:** NGOs, Owners' Associations, local industries – consultative role	
Financing mechanisms and sources: City budget		

Key Direct Benefits:
Increases visibility of Iași as renowned promoter of decarbonization, enrols City Hall staff in the decarbonization wagon, provides Iași citizens with a model to follow, pioneers harmonization with EU taxonomy at City Hall level.

Key Indirect Benefits/Co-benefits:
Crowd-sourcing decarbonisation suggestions from the city using social media and digital mapping techniques (compliant with ethical GDPR practices).

Key Indicators & Metrics of success:
Approval of updated environmental strategy by the Iași City council

Measure Impact through (improving) **State and Pressure indicators:** Annual CO_2 equivalent emissions per capita	Estimated measurements of **GHG reductions**: N/A	Benefits in terms of climate change **adaptation & resilience**: Increased climate change resilience, long-term mitigation of adverse effects of climate change

Quantitative benefits: Energy or maintenance savings, efficiency gains, health spending reductions, employment created	**Qualitative benefits:** Cleaner air, quality of life benefits

EN3 Increase awareness of population regarding energy efficiency

	Sector: Energy	**Supporting Strategic Objective(s) of:** ENE-SO1 Improved energy Efficiency and intensity
Action Type: Policy	**Linked GCAP Actions**: BU2 Improving the energy efficiency of public buildings BU6 Users education campaigns for optimizing and monitoring energy consumption in buildings EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, by increasing the use of renewable energy sources GOV1 Setting-up a communications framework with stakeholders	
Policy/Investment Action Classification: Other	**Existing Linked Activities/Initiatives:** Energy efficiency measures applied in the public buildings and public utilities sub-sectors / Increase of green spaces area at city level	
Priority Environmental Challenges addressed: GHG emissions	**Supporting city (and or national) Policies and Plans**: Sustainable Energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU)	
Rationale and Justification for Action: Improve energy efficiency and increase renewable energy sources in the energy consumption mix through raising public awareness.		
Description of Action: Promotion materials disseminated in local media and during public gatherings, like sport races/contests, quizzes, etc. Various audiences shall be targeted, from citizens to scholars and businessmen. Potential sponsorships can be considered. Use data gathered through integrated smart platform, to be created within Smart GCAP actions.		
Cross-Cutting Themes Buildings and industry Air quality improvements	**Job Creation Potential** N/A	**Gender and Social Inclusion Aspects** Gender- and inclusion-oriented targeting information dissemination, including ideas for energy efficiency.
SMART Aspects No SMART/digital aspects are envisaged		
Implementation timeline: 2023	**Action Owner and Implementing Agency**: City Hall / Local Council	
Indicative Project Costs: EUR 250,000 OPEX:N/A	**Other stakeholders and role:** NGOs as co-promoters	
Financing mechanisms and sources: City budget		
Key Direct Benefits: Enhance Iași citizens' preference to undertaking energy efficiency measures		
Key Indirect Benefits/Co-benefits: Crowd-sourcing energy efficiency suggestions from the city using social media and digital mapping techniques (compliant with ethical GDPR practices).		
Measuring success: Key Indicators & Metrics of success: % of target audience reached Number of answers to the survey		

Measure Impact through (improving) **State and Pressure indicators**: Electricity consumption in buildings Share of households connected to district heating Share of district heating from carbon intensive sources (Share of households connected to district heating) Share of renewable in total energy consumption Share of new buildings with green certification Energy used for urban water production and supply Energy used for wastewater collection and treatment Percentage of dwellings damaged by the most intense flooding in the last 10 years Consumption of fossil fuels in industrial processes P Efficiency of water supply networks P	Estimated measurements of **GHG reductions**: N/A	Benefits in terms of climate change **adaptation & resilience**: increased climate change resilience, long-term mitigation of adverse effects of climate change
Quantitative benefits: Efficiency gains, employment created	**Qualitative benefits:** Cleaner air, quality of life benefits	

EN4 Refurbishment of the DH network

	Sector: Energy	**Supporting Strategic Objective(s) of:** ENE-SO1 Improved energy Efficiency and intensity
Action Type: Investment	**Linked GCAP Actions**: EN1 Fuel switch at Holboca Combined Heat and Power Plant (CHPP) EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, by commissioning of RES capacity in Iași CHP and increase the use of renewable energy sources BU2 Improving the energy efficiency of public buildings BU6 Users education campaigns for optimizing and monitoring energy consumption in buildings	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Energy efficiency measures applied centralized DH, reduction of fuel consumption and associated GHG emissions	
Priority Environmental Challenges addressed: GHG emissions	**Supporting city (and or national) Policies and Plans**: Sustainable Energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU) / Energy Efficiency Improvement Programme (EEIP)	
Rationale and Justification for Action: Improve energy efficiency of DH at city level, reduce DH carbon footprint		
Description of Action: The investment is continuing the rehabilitation of Iași's DH network, by replacing 7.8km of transport pipes. Refurbishment of the DH network is a continuous concern of Iași City Hall since the 2000's. Currently, the DH network is witnessing the third DH rehabilitation programme, consisting of replacing about 7.8km of heat transport pipes. The investment is amounting EUR 7.56 million and is supposed to be financed by the LIOP (Large Infrastructure Operational Programme). Further DH network upgrades are a necessary step to reduce the operating temperature of the system to facilitate the more efficient integration of lower temperature renewable and waste heat-based sources.		
Cross-Cutting Themes Air quality and greenhouse gas emissions reduction Socio-economic wellbeing	**Job Creation Potential** No additional jobs created, works outsourced to external contractor	**Gender and Social Inclusion Aspects** Collection of gender-disaggregated employment data of staff working on DH network including gender distribution of staff at all seniority levels, management positions and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.
		SMART Aspects The investment incurs installation of remote access metering devices whose measured data are automatically transferred to a central unit
Implementation timeline: 2023	**Action Owner and Implementing Agency**: City Hall / Termoservice Iași	
Indicative Project Costs: **CAPEX:** EUR 7,562,276 OPEX: N/A	**Other stakeholders and role:** N/A	

Financing mechanisms and sources: LIOP central, city budget			
Key Direct Benefits: Energy savings of 1.5 Mtoe			
Key Indirect Benefits/Co-benefits: Crowd-sourcing energy efficiency suggestions from the city using social media and digital mapping techniques (compliant with ethical GDPR practices)			
Key Indicators & Metrics of success: Number of dwellings served by rehabilitated transport pipes Temperature of thermal agent			
Measure Impact through (improving) **State and Pressure indicators:** Annual CO_2 equivalent emissions per capita	Estimated measurements of **GHG reductions**: 7,270 tonnes CO_2		Benefits in terms of climate change **adaptation & resilience**: Increased climate change resilience, long-term mitigation of adverse effects of climate change
Quantitative benefits: Efficiency gains, employment created		**Qualitative benefits:** Cleaner air, quality of life benefits	

EN5 Photovoltaic Park Tomesti – Iași ApaVital, 25MW

	Sector: Energy	**Supporting Strategic Objective(s) of:** De-carbonization of energy production/ Green Energy
Action Type: Investment	**Linked GCAP Actions**: EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Increase green energy production at the level of ApaVital S.A. Iași, including smart management of production, storage and use of green energy at the Dancu WWTP.	
Priority Environmental Challenges addressed: GHG emissions	**Supporting city (and or national) Policies and Plans**: National Strategy regarding Adaptation to Climate Change 2022 – 2030 / Improving Energy Efficiency in Iași by the World Bank / National Recovery and Resilience Plan / Fit for 55 Package	

Rationale and Justification for Action:
The wastewater treatment plant in Iași is the most important electricity consumer in ApaVital S.A., the water and wastewater operator in Iași. The actual electricity price fluctuations put strong pressure on the efficiency and financial stability of the company. The plan is to eliminate the dependence on electricity acquired; the investment plan proposes, together with other measures in place, the production of energy in co-generation from the biogas collected and the full independence from an energy point of view of the WWTP. Another advantage is the reduction of transport and distribution costs, as the plant being proposed is to be located in the vicinity of the wastewater treatment plant.

Description of Action:
Installation of a bank of solar panels for the production of photovoltaic energy, with an installed capacity of 25MW and with an annual estimated production of energy of 30,000 MWH., The plant will be constructed in ethe immediate vicinity of the Wastewater Treatment Plant for which it will provide the energy produced.

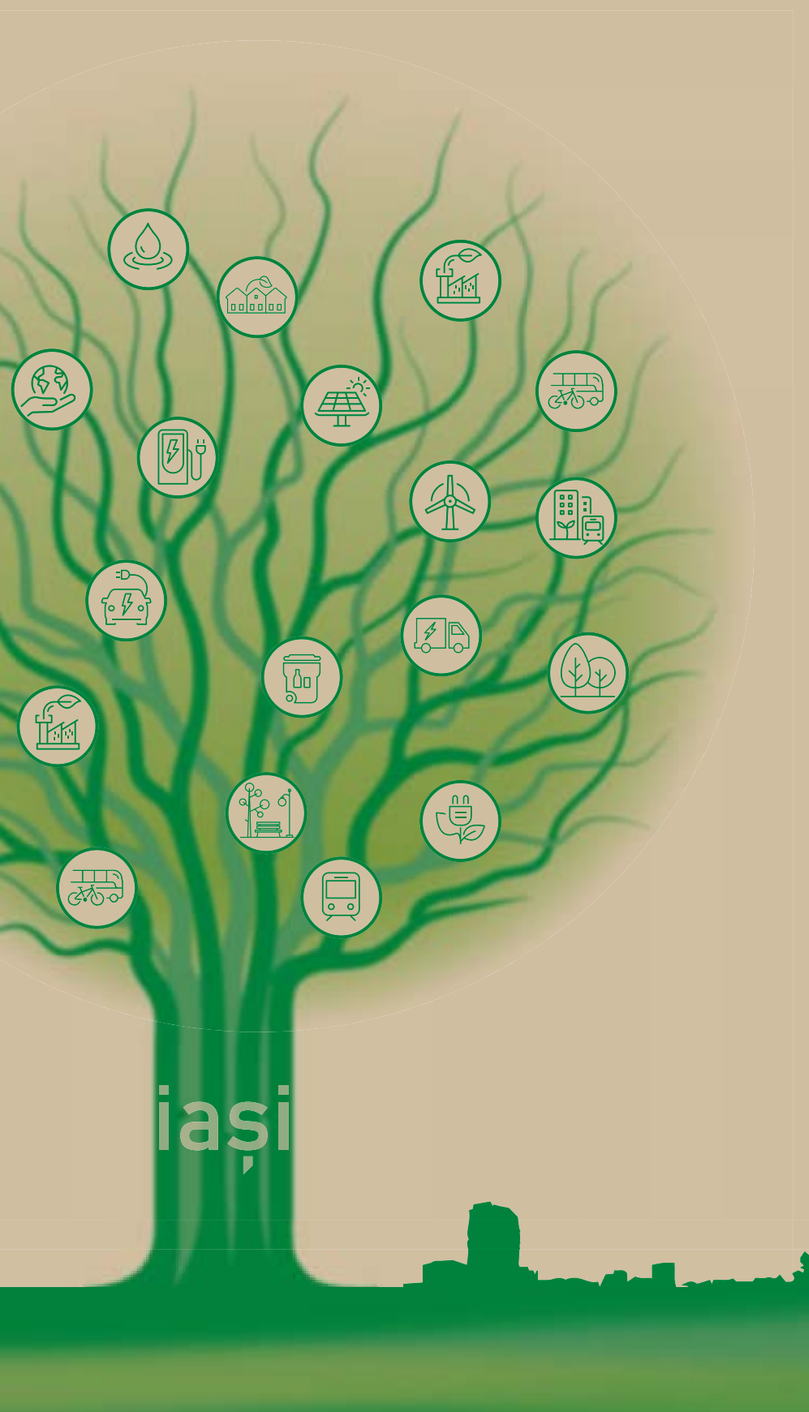
	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Water supply and wastewater management Air quality and greenhouse gas emissions	5 FTE permanent jobs	Collection of gender-disaggregated employment data of staff working on photovoltaic park including gender distribution of staff at all seniority levels, management positions and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.	No SMART/digital aspects are envisaged

Implementation timeline: 2023-2026	**Action Owner and Implementing Agency**: ApaVital S.A. Iași
Indicative Project Costs: CAPEX: EUR 27 million OPEX: EUR 0.3 million/5years	**Other stakeholders and role:** N/A
Financing mechanisms and sources: Own sources (partial), loans	

Key Direct Benefits:
Increase production of renewable energy, improve financial efficiency of ApaVital S.A., protecting against electricity price fluctuations, reducing of cost by supplying directly to the Wastewater Treatment Plant

Key Indirect Benefits/Co-benefits:
Reduction of losses on distribution network (since the production plant is in the vicinity of the end user, the Wastewater Treatment Plant of Iași)

Key Indicators & Metrics of success: Production of 30,000 MWH/year of renewable energy		
Measure Impact through (improving) **State and Pressure indicators:** Annual CO_2 equivalent emissions per capital Annual CO_2 emissions per unit of GDP Share of renewable in total energy consumption	Estimated measurements of **GHG reductions**: 7,150 tonnes/year CO_2 reduction	Benefits in terms of climate change **adaptation & resilience**: Benefits in terms of climate change adaptation & resilience: Cleaner air, energy and costs savings, financial benefits through reduced operating costs that can support wider social and economic benefits
Quantitative benefits: Green energy production, efficiency gains, financial stability and predictability, employment created		**Qualitative benefits:** Cleaner air, quality of life benefits



4.11. Adaptation and resilience actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
AD1 Increase awareness of Iași residents on climate change impacts and mitigation/ adaptation measures		✓			
AD2 Improve seismic resilience of buildings				✓	
AD3 Development of a Strategic Emergency Response Plan		✓		✓	

PHOTO 65 - 66

SOURCE:
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AD1 Increase awareness of Iași residents on climate change impacts and mitigation / adaptation measures

	Sector: Adaptation and Resilience	**Supporting Strategic Objective(s) of:** ADA-SO1 Increase awareness of Iași inhabitants on climate change impacts and adaptation
Action Type: Policy	**Linked GCAP Actions**: EN3 Increase awareness of population regarding energy efficiency EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, by commissioning of RES capacity in Iași CHP and increase the use of renewable energy sources BU2 Improving the energy efficiency of public buildings BU6 Users education campaigns for optimizing and monitoring energy consumption in buildings	
Policy/Investment Action Classification: Policy	**Existing Linked Activities/Initiatives:** Building partnerships with business, academia and media to support the increase of population awareness on climate change and to promote sustainable technologies for developing a competitive local economy Improving entrepreneurship abilities of Iași citizens Adaptation of Iași County primary sector to climate change through digitalization and circular economy – smart irrigation systems (agriculture), integration and reuse of industrial by-products	
Priority Environmental Challenges addressed: Air quality and green space	**Supporting city (and or national) Policies and Plans**: Sustainable Energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU) / Energy Efficiency Improvement Programme (EEIP), Iași County Development Strategy 2021-2027	
Rationale and Justification for Action: Enhance resilience of Iași against multiple risks (earthquakes, landslides, heatwaves, air pollution) achievable through adaptation and nature-ased solutions		
Description of Action: Efficient awareness raising campaigns trigger innovation of commercial ideas linked to enhancing urban resilience through business incubators. This in turn leads to an increased number of startups based on climate change adaptation and resilience principles. Also existing companies are more likely to redirect towards compliant activities, as long as financial incentives become available. - partnering within primary to tertiary levels of educational institutions of Iași (establish a course on climate change for instance or academic content or showcase industry efforts such as the IT / logistics sector in Iași) - urban greening - broadcasting clips on local media channels (TV, radio, xocial media) - combining the campaign with significant events e.g. October pilgrimage or sport events (matches, races) or entertainment (music festivals)		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Access to open space Socio-economic wellbeing	Up to 50 FTE- jobs created as a result of realisation of related business opportunities	Funding awareness-raising initiatives in schools and local communities, including among women, persons living with disabilities, Roma and other vulnerable groups Public-private cooperation to offer training and career growth opportunities for women in STEM	No SMART/digital aspects are envisaged
Implementation timeline: Awareness raising campaigns are performed periodically	**Action Owner and Implementing Agency**: Iași City Hall		
Indicative Project Costs: EUR 50,000/campaign	**Other stakeholders and role:** NGO's, 'Green ambassadors'		
Financing mechanisms and sources: City budget, IFIs, Private-public partnerships. green bonds			

Key Direct Benefits: Creation of business ideas through business incubators Increased number of startups in Iași City Redirection of existing businesses towards environmentally compliant activities			
Key Indirect Benefits/Co-benefits: Increased economic activity Higher workforce occupation rate at city level Additional local budget inputs			
Key Indicators & Metrics of success: Min. 30% of the city population to be reached with the information campaign			
Measure Impact through (improving) **State and Pressure indicators:** Measure impact through improving the air quality indicators	Estimated measurements of **GHG reductions**: N/A		Benefits in terms of climate change **adaptation & resilience**: Increased awareness and improved contribution of population in implementing actions
Quantitative benefits: Energy or maintenance savings, efficiency gains, GHG footprint reduction		**Qualitative benefits:** Access to open spaces, cleaner air, quality of life benefits	

AD2 Improve seismic resilience of buildings

	Sector: Adaptation and Resilience	**Supporting Strategic Objective(s) of:** ADA-SO2 Integrate resilience into sectoral investments addressing environmental challenges
Action Type: Investment	**Linked GCAP Actions**: AD3 Development of a Strategic Emergency Response Plan AD1 Increase awareness of Iași residents on climate change impacts and mitigation / adaptation measures LA2 Green oasis BU1 Improving the energy efficiency of private buildings BU2 Improving the energy efficiency of public buildings BU3 Programme for buildings energy profile, including smart meter installation EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Improving building resilience to natural disasters (earthquakes), adapt local parks as evacuation areas (nature-based solutions)	
Priority Environmental Challenges addressed: Climate change mitigation and resilience	**Supporting city (and or national) Policies and Plans**: Sustainable Energy and Climate Action Plan (SECAP) / Urban Development Integrated Strategy (SIDU) / Energy Efficiency Improvement Programme (EEIP)	

Rationale and Justification for Action:
Enhance resilience of Iași against earthquakes, achievable through adaptation actions, such as reinforcement of the building structure (consolidation).

Description of Action:
Although the earthquake risk of Iași is moderate (0.25g), the city has a significant number of inhabitants (~400,000) and is placed inside the earthquake propagation area, lying from the North-East to the South. Iași has a total of 200 buildings falling into the seismic risk class I, II and III and additionally has 9 areas prone to landslides. Therefore, building expertise and consolidation (reinforcement of the structure) should be a continuous concern. Moreover, public buildings which are resilient to seismic hazard can become shelters during the earthquakes, thus supporting the next action (AD3) logistically.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Buildings Public open space	10 FTEs related to expert assessment and recommendations; the works will be done by existing building companies	Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors	No SMART/digital aspects are envisaged

Implementation timeline: 0-15 years	**Action Owner and Implementing Agency**: Iași City Hall
Indicative Project Costs: Established only after prior expertise of ~ EUR 5/sqm; consolidation cost: EUR 500/sqm Indicative CAPEX for 200 buildings at risk falling into seismic classes I, II and III – EUR 5.5 million OPEX: EUR 0.9 million/year	**Other stakeholders and role:** Ministry of Development, Public Works and Administration (MDLPA), project evaluation authority Romanian Construction Inspectorate, approval of consolidation project Iași County Emergency Situations Inspectorate – consultative role for shelter adaptation

Financing mechanisms and sources:
NRRP "Renovation Wave", city budget. IFIs. Public-Private Partnerships, green bonds

Key Direct Benefits:
Elimination/reduction of earthquake risk

Key Indirect Benefits/Co-benefits:
Gains from increased market value of consolidated (reinforced structure) buildings

Key Indicators & Metrics of success:
Reduction of mortality and morbidity indicators, abatement of earthquake damage, emergency cost savings

Measure Impact through (improving) **State and Pressure indicators:**
Percentage of households at risk
Percentage of public infrastructure at risk
Resilience of transport systems
Efficiency of transport emergency systems in case of disaster
Building standards

Estimated measurements of **GHG reductions**:
N/A

Benefits in terms of climate change **adaptation & resilience**:
Increased adaptation of buildings to natural disasters

Quantitative benefits:
Energy or maintenance savings, efficiency gains, health spending reductions

Qualitative benefits:
Access to open spaces, cleaner air, quality of life benefits

AD3 Development of a Strategic Emergency Response Plan

	Sector: Adaptation and Resilience	**Supporting Strategic Objective(s) of:** ADA-SO2 Integrate resilience into sectoral investments addressing environmental challenges
Action Type: Policy	**Linked GCAP Actions**: AD2 Improve seismic resilience of buildings AD1 Increase awareness of Iași residents on climate change impacts and mitigation / adaptation measures EN2 Make decarbonization a key objective of the city's sustainable development/environmental strategy, by locall tax exemption for private energy efficiency investments in the residential sector	
Policy/Investment Action Classification: Policy	**Existing Linked Activities/Initiatives:** None	
Priority Environmental Challenges addressed: Climate change mitigation and Resilience	**Supporting city (and or national) Policies and Plans**: Risk Analysis and Coverage Plan by Iași County Emergency Situations Inspectorate, National Emergency Planning Framework	

Rationale and Justification for Action:
Iași faces a number of potential risks every day and preparedness to mitigate the potential negative impacts resulting from these risks is not always prioritized. Furthermore, the risks faced by Iași now extend beyond the "usual" risks of extreme weather events and earthquakes, to those associated with the proximity of the city to the war currently taking place in Ukraine. An emergency response plan for Iași is necessary to enhance the resilience of the city against multiple risks including those which are caused by the natural world (earthquakes, heat waves, floods) and those which are human-induced.

Description of Action:
An emergency response plan is a strategic document that lays out the series of steps the city should take during a critical event, such as a fire or extreme flooding event threat, to ensure citizens' safety and minimize the impact on critical operations. Emergency response plans—just like other emergency management planning documents—are meant to help cities to address various types of emergencies, such as hurricanes, wildfires, winter weather, chemical spills, disease outbreaks and other hazards. The goal is to reduce or prevent human injury and damage to property, infrastructure and services during critical hazardous events. More specifically, to support adaptation to climate change, the emergency response plan will specify a resilience-building framework for the urban area, plus define and detail disaster risk management and climate change adaptation activities in an integrated approach. In addition, this would include risks associated with the accidental exposure of the city to Chemical, Biological, Radiological and Nuclear (CBRN) materials. CBRN emergency response would likely require trained and equipped responders to develop and maintain plans for preventing emergencies and reducing, controlling or mitigating the effects of CBRN emergencies in both the response and recovery phases. Actions might include: (i) risk assessment to include the current CBRN threats and vulnerabilities; (ii) Audit of the current CBRN emergency response capabilities that exist; (iii) the development of CBRN emergency response procedures and plans – including the development of a CBRN local authority command and control system to manage CBRN emergencies; (iv) dentification of any CBRN protective and detection equipment required to deal with a wide range of CBRN threats; and (v) establishment of a CBRN emergency response training programme for local authority response teams.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Buildings Water supply, wastewater management and solid waste management Transport- Implementation of ride-sharing service- MaaS concept	1 FTE Possible addition of responsible person in Iași municipality	Awareness and consideration of traditional gender stereotypes and the differentiated needs of all genders, minority groups and other disproportionately affected population groups during plan development and implementation.	No SMART/digital aspects are envisaged
Implementation timeline: 0-5 years	**Action Owner and Implementing Agency**: City Hall Iași Emergency Situations Committee		
Indicative Project Costs: EUR 15,000/plan	**Other stakeholders and role:** Decision makers and technical staff at the city/community and historic area levels as well as councillors working on risk and vulnerability assessments, climate change adaptation and resilience enhancement. Other stakeholders who may wish to use the document include disaster risk managers, other managers (such as heritage or public health managers), public administrators, sustainability and resilience officers, critical infrastructure managers, service providers, emergency service providers, civil society associations, non-governmental organisations, academic and research institutions as well as consultancies.		
Financing mechanisms and sources: City budget, ERDF. Public-Private Partnerships			

Key Direct Benefits:
An emergency response plan specifies procedures for handling sudden or unexpected situations, extreme shocks and other unexpected severe incidents. The main direct benefit for a city is to be prepared to prevent fatalities and injuries and to reduce damage to buildings, stock and equipment. If the emergency response plan includes additional capacity building and training for first responders, it will help them engage in the same emergency protocol, increase responder confidence, empower responders to utilise safety resources and will also become a long-term investment for staff members among the responders as well as municipal staff.

Key Indirect Benefits / Co-benefits:
The first step to creating an emergency response plan is to conduct a comprehensive threat assessment to identify the types of climate and transition risks that may affect the city and analyse their likelihood and potential impact. Decentralising energy systems would be a good resilience measure (local + building-integrated energy generation and storage + enhanced building energy efficiency). The team developing the emergency response plan and implementing the activities should be aware of traditional gender stereotypes and the differentiated needs of all genders, minority groups and other disproportionately affected population groups.

Key Indicators & Metrics of success:
Number of intervention brigades assigned and trained
Number of compliant shelters

Measure Impact through (improving) **State and Pressure indicators:**
Percentage of households at risk
Percentage of public infrastructure at risk
Resilience of transport systems
Building standards

Estimated measurements of **GHG reductions**:
N/A

Benefits in terms of climate change **adaptation & resilience**:
Increased population adaptation to natural disasters

Quantitative benefits:
Health spending reductions

Qualitative benefits:
Quality of life benefits

4.12. Environmental governance and capacity building actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
GV1: Setting-up a communications framework with stakeholders	✓	✓	✓	✓	✓
GV2: Development of GESI (Gender Equality and Social Inclusion) Action Plan	✓	✓	✓	✓	✓
GV3: Continuous professional development. capacity building of City Hall staff and HR policy for EBRD financed projects	✓	✓	✓	✓	✓
GV4: Establishment of working group to support GCAP implementation	✓	✓	✓	✓	✓

PHOTO 67-68

GV1 Setting up communication framework with stakeholders

	Sector: Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** GOV-SO1 Enhance Stakeholder Consultation and Participation
Action Type: Cross-Action	**Linked GCAP Actions:** All GCAP actions	
Policy/Investment Action Classification: Cross-Action	**Existing Linked Activities/Initiatives:** Current activity of the Administrative Capacity Development Service	
Priority Environmental Challenges addressed: Air quality, green spaces, energy efficiency	**Supporting city (and or national) Policies and Plans**: Ongoing Communication Plans	

Rationale and Justification for Action:
The communication of Iași City Hall with stakeholders (companies, institutions or citizens) is satisfactory and continuous. At the same time, under the pressure of the volume of information and the development of communication techniques and channels, citizens have diverse communication preferences with public institutions. As part of the GCAP preparation, Iași City Hall tested and analysed the dynamics of communication with stakeholders through several tools and channels. It was found that digital communication has the greatest potential for engagement, but at the same time it needs the involvement of more resources within the City Hall. The implementation of this measure will improve the dynamics of communication with stakeholders and their involvement in the decision-making process at the City Hall level as well as in the implementation of approved projects.

Description of Action:
Maintaining communication with stakeholder group for consultation purposes. Communication topics can include, for example: (i) new investments, (ii) connected city: public utilities services, public transport, biking and pedestrian routes, intelligent traffic system, adaptation and resilience to natural disasters, (iii) circular city: renewable energy, waste segregation and recycling, rehabilitation of industrial sites, soil quality and urban planning, (iv) attractive city: access to green spaces. Conducted mostly via digital instruments such as email, website and Facebook City Hall page and Facebook private group as well as organizing focus groups with stakeholders in person on specific demand.

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes All themes	No jobs to be created. Volunteers and NGO representatives will occasionally be involved.	Entire action targets gender and social inclusion	Digital communication instruments (e.g. website, social media and professional online networks). Facebook proved to be the most efficient social media platform in Iași and therefore should be prioritised in the digital communication. The GCAP stakeholder group created on Facebook is a digital resource dedicated to the project that must be maintained through the periodic delivery of relevant content and managed so that it differs from the content on the FB page.

Implementation timeline: 2023- After project end	**Action Owner and Implementing Agency**: Administrative Capacity Development Service/ Communication Office
Indicative Project Costs: EUR 250,000-375,000 OPEX: N/A	**Other stakeholders and role:** Various NGOs, continuous and active dialogue with civil society as final beneficiary of the public services
Financing mechanisms and sources: City budget, non-refundable European funds.	

Key Direct Benefits:
Stakeholder consultations conducted both in-person and online will increase accessibility for all citizens. Representatives of vulnerable groups can be invited and encouraged to participate. Attention should be paid to the differing needs of citizens based on gender, disability status, income, age, minority status, sexual orientation, etc. Collection of gender-disaggregated employment data will also increase, including gender distribution of staff at all seniority levels and gender-disaggregated pay data. Adoption of policies can promote an inclusive and supportive work environment at Iași City level. and enforcement of similar standards among municipal contractors.

Key Indirect Benefits/Co-benefits:
In the case of digital platform development for the public services, a section could be developed that is dedicated to 'Information of Public Interest'**.**

Key Indicators & Metrics of success: Number of followers/ reactions/ comments on social media channels Number of focus groups organised in-person		
Measure Impact through (improving) **State and Pressure indicators:** According to the linked actions	Estimated measurements of **GHG reduction**s: The attention of a broad range of stakeholders will hold to account the implementation of linked GCAP actions	Benefits in terms of climate change **adaptation & resilience**: According to the linked actions
Quantitative benefits: Efficiency gains, employment created		**Qualitative benefits:** Continuous professional development, quality of life benefits

GV2 Development of GESI (Gender Equality and Social Inclusion) Action Plan

	Sector: Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** GOV-SO2 Improve social inclusion and reducing vulnerabilities
Action Type: Policy	**Linked GCAP Actions:** All GCAP actions	
Policy/Investment Action Classification: Policy	**Existing Linked Activities/Initiatives:** The Department for Roma Cases, Civil Society Relations Office	
Priority Environmental Challenges addressed: Air quality, green spaces.,energy efficiency	**Supporting city (and or national) Policies and Plans**: In-line with national legislation, buy-in from Mayor's Office	

Rationale and Justification for Action: The GESI Action Plan will align with international best practices by:

1. Committing to undertaking more actions for equality within city governance, policies, workforce and initiatives/programmes.
2. Identifying GESI entry points within each GCAP action to ensure all actions combat existing marginalization and inequalities and promote empowerment and inclusion.
3. Ensuring the involvement of citizens in the decision-making process of the green city.

Description of Action: Develop a GESI Action Plan for inclusion in the GCAP policy document to promote equality, equity and social and economic inclusion through all GCAP actions. The priorities will be to:

1. Identify vulnerable communities likely to be impacted by the GCAP or excluded from the development, implementation and monitoring/evaluation of its actions.
2. Identify entry points to ensure the GESI sensitivity of every GCAP intervention under all Green City sectors.
3. Develop and establish implementation mechanisms for GESI sensitive policies, institutional arrangements, data collection, monitoring and evaluation, capacity development, inclusive participation, empowerment and inclusively accessible financing.
4. Develop monitoring and evaluation mechanisms to evaluate the effectiveness and implementation of the GESI Action Plan in an ongoing manner.

Cross-Cutting Themes	**Job Creation Potential**	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Public open space Public and private transport	No jobs to be created	Entire action targets gender and social inclusion	No SMART/digital aspects are envisaged

Implementation timeline: 2023 – continuous, after project end	**Action Owner and Implementing Agency**: Administrative Capacity Development Service or new department
Indicative Project Costs: EUR 100,000 OPEX: N/A	**Other stakeholders and role:** Equal chances and representation within decision making positions in the city

Financing mechanisms and sources: city budget, IFIs. non-refundable European funds

Key Direct Benefits:
This measure, although it corresponds to the field of policies, will have practical effects. such as: better social inclusion, the update of data tracking on vulnerable categories according to the current methodology at EU level, the identification of the needs of vulnerable categories and the provision of a faster and adapted response by team in charge of within the Iași City Hall. GCAP actions would then be developed and implemented in a manner which combats existing inequalities and promotes economic, social and political equity/inclusion. The groups at risk of exclusion such as women and vulnerable populations are made central to the sustainable approach by empowering them to act with and demand integrity and by taking part in building institutions to promote a state that is open, accountable and responsive to their needs and expectations.

For Key Indirect Benefits/Co-benefits:
For conducting a comprehensive GESI action plan it is necessary to approach the traditional gender stereotypes and the differentiated needs of all genders, minority groups and other disproportionately affected population groups. Therefore it will help improve the collection of disaggregated data of Roma population, women, people with disabilities and LGBTQIA identity regarding education levels, employment, care burden, transportation needs and prevalence of discrimination.

Key Indicators & Metrics of success: According to the linked actions

Measure Impact through (improving) **State and Pressure indicators:** According to the linked actions	Estimated measurements of **GHG reductions**: According to the linked actions	Benefits in terms of climate change **adaptation & resilience**: According to the linked actions
Quantitative benefits: Efficiency gains, employment created		**Qualitative benefits:** Continuous professional development, quality of life benefits

GV 3 Continuous professional development, capacity building of City Hall staff and HR policy for EBRD financed projects

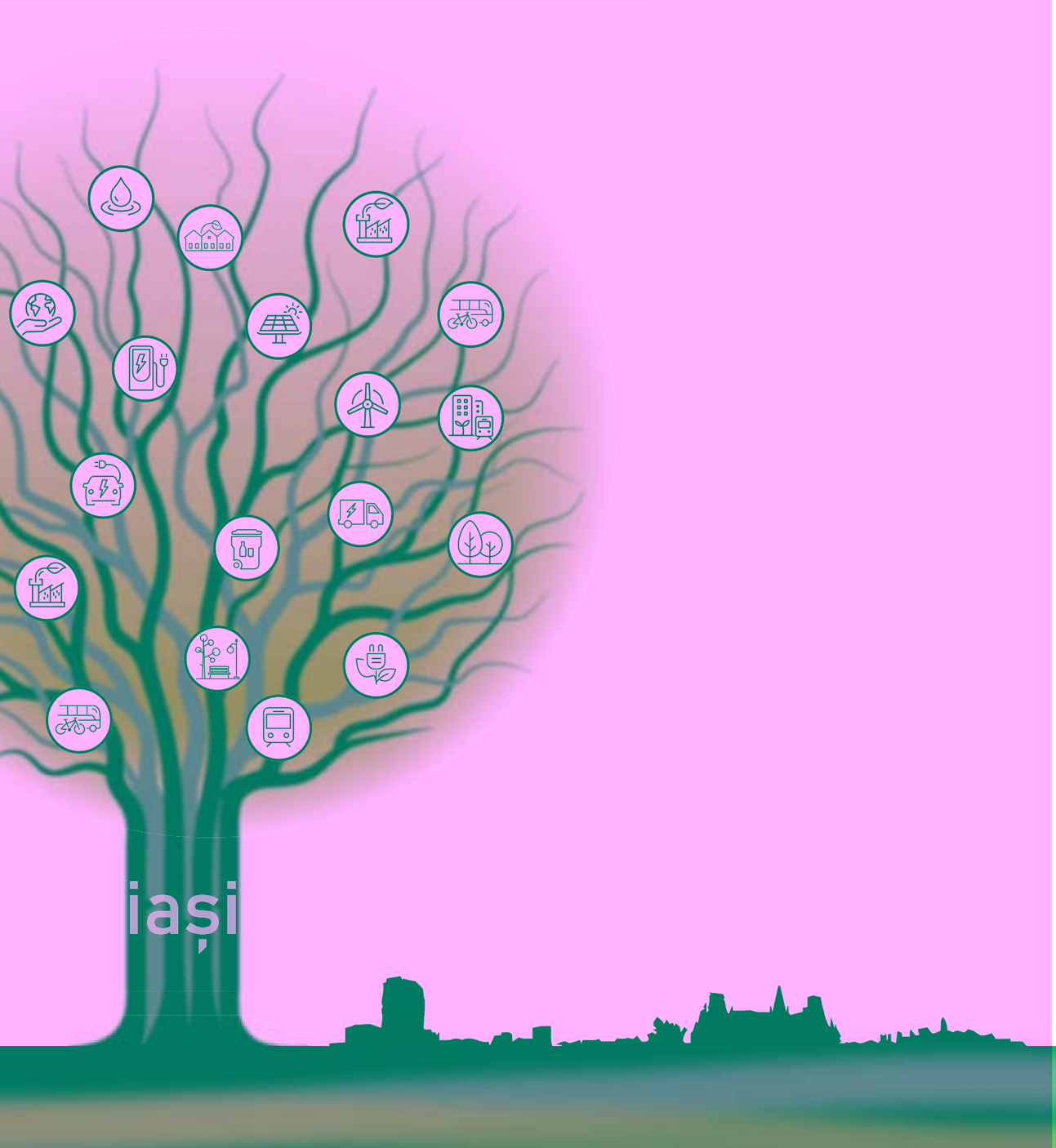
	Sector: Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** Capacity Building for managing and implementing loan-financed projects
Action Type: Cross-Action	**Linked GCAP Actions:** All GCAP actions	
Policy/Investment Action Classification: Cross-Action	**Existing Linked Activities/Initiatives:** Non-Reimbursable Financing Contracts Monitoring Department, Bureau of Transfrontier Cooperation, Bureau of Economic cooperation, city HR policies in place	
Priority Environmental Challenges addressed: Air quality, green spaces, energy efficiency	**Supporting city (and or national) Policies and Plans**: Annual training programme	
Rationale and Justification for Action: The involvement of citizens in the decision-making process of the green city.		
Description of Action: Training City Hall staff for identifying new financing opportunities, developping project concepts, on-the job training for experienced employees while collaborating with external consultants and on-the-job trainings for young employees.		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes Public open space Public and private transport	No jobs to be created.	Ensure equality of opportunity through collection of gender-disaggregated employment data and adoption of inclusive workplace policies	Digital platforms which promote funding sources, call for projects proposals and projects submission. There is no single platform at the national level, but each authority managing public investment funds publishes calls for projects (e.g. Ministry of Energy, Ministry of the Environment, Romanian Fund for Energy Efficiency, etc.)

Implementation timeline: 2023- continuous, after project end	**Action Owner and Implementing Agency**: HR Department, Administrative Capacity Development Service	
Indicative Project Costs: EUR 200,000-250,000 OPEX: N/A	**Other stakeholders and role:** Trainers working within NGOs or private sector, job creation/hiring persons from vulnerable categories.	
Financing mechanisms and sources: City budget, IFIs, non-refundable European funds		
Key Direct Benefits: Equal opportunities for all the City Hall staff members with relevant background such as: financial/ project management/ EU funds. Collection of gender-disaggregated employment data, including gender distribution of staff at all seniority levels and gender-disaggregated pay data. Adoption of policies to promote an inclusive and supportive work environment at Iași City level and enforcement of similar standards among municipal contractors.		
Key Indirect Benefits/Co-benefits: Better gender involvement in city's activity and expanding the area of expertise of investment action implementation teams can contribute not only to attracting financing, but also to accelerating the implementation and reaching KPIs.		
Key Indicators & Metrics of success: According to the linked action**s**		
Measure Impact through (improving) **State and Pressure indicators:** According to the linked activity	Estimated measurements of **GHG reductions**: According to the linked actions	Benefits in terms of climate change **adaptation & resilience**: According to the linked actions
Quantitative benefits: Efficiency gains,**-** employment created	**Qualitative benefits:** Continuous professional development, quality of life benefits	

GV4 Establishment of working group to support GCAP implementation

	Sector: Environmental Governance and Capacity Building	**Supporting Strategic Objective(s) of:** Strengthen local governance to support the green city transition	
Action Type: Cross-Action	**Linked GCAP Actions:** All GCAP actions		
Policy/Investment Action Classification: Cross-Action	**Existing Linked Activities/Initiatives:** Communication Department, Corporate Governance Office, Directorate of Public Relations and Decisional Transparency within City Hall		
Priority Environmental Challenges addressed: Air quality, green spaces, energy efficiency	**Supporting city (and or national) Policies and Plans**: Communications programme, public statements, media disseminations, NGOs and public consultations		
Rationale and Justification for Action: The involvement of citizens in the decision-making process of the green city.			
Description of Action: Ensuring equal access to information for all citizens and stakeholders in real time, enabling possibility to take part to the policy-making process and to facilitate implementation of measures adopted.			
	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes All sub-sectors	1-2 FTE- jobs to be created	Ensure accessibility of information for vulnerable populations Online and in-person community consultations, particularly to hear vulnerable groups' needs and views Inclusive design and implementation of GCAP actions	Digital communication instruments (e.g. website, social and professional online networks). The GCAP stakeholders group created on Facebook should be the core digital instrument for stakeholders engagement of GCAP implementation. It would centralize communication and provide links to other relevant information on social media channels.
Implementation timeline: 2023- after project end (Continuously)	**Action Owner and Implementing Agency**: Communication Office		
Indicative Project Costs: EUR 250,000-375,000 OPEX: N/A	**Other stakeholders and role:** Institute for Public Policies, NGOs, business sector. Role: Raising awareness		
Financing mechanisms and sources: City budget			
Key Direct Benefits: Attention should be paid to communicating to vulnerable populations on how to access information and attention should be paid to the accessibility of information services. Online and in-person community consultations should be held to hear the public's views, particularly vulnerable groups' needs. Inclusion should be prioritised in the design of digital services to ensure they are accessible to persons with disability (e.g. vision impairment) and households with limited computer and/or web access.			
Key Indirect Benefits/Co-benefits: Digitalisation of public services, monitoring, control and information dissemination in real through a unique smart platform managed by the City Hall			
Key Indicators & Metrics of success: Number of public consultations Frequency of media dissemination in line with decision making process Various media instruments involved			
Measure Impact through (improving) **State and Pressure indicators:** According to the linked activity	Estimated measurements of **GHG reductions**: According to the linked actions	Benefits in terms of climate change **adaptation & resilience**: According to the linked actions	
Quantitative benefits: Efficiency gains, employment created	**Qualitative benefits:** Continuous professional development, quality of life benefits		



Smart actions

GCAP Actions	AIR QUALITY	ACCESS TO GREEN SPACE	SOLID WASTE MANAGEMENT	WATER & SOIL QUALITY	WATER RESOURCES
SM1: Web application for updating KPIs	✓	✓	✓	✓	✓
SM2: Real time information on air quality - the first step in creating an integrated smart platform for Iași City	✓				

PHOTO 69-73

SOURCE:
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SM1 Web application for updating KPIs

	Sector: Smart city	**Supporting Strategic Objective(s) of:** SMA-SO1 Integrated Data Management and Smart City platform
Action Type: Investment	**Linked GCAP Actions**: All today and future smart actions in urban sectors: TR Transport, EN Energy, BU Buildings, WA Water & Wastewater, WS Waste	
Policy/Investment Action Classification: Investment	**Existing Linked Activities/Initiatives:** Digital transformation strategy of Iași City of July 2019	
Priority Environmental Challenges addressed: N/A	**Supporting city (and or national) Policies and Plans**: Digital transformation strategy of Iași City of July 2019	
Rationale and Justification for Action: Smart solutions enhancing city livability, efficiency and social inclusion.		
Description of Action: Centralising the KPIs or status of the smart actions, programmes, and projects are updated in the form of a digital dashboard. This is the place where concerned authorities provide information on the KPIs and main parameters of the projects / programmes / actions in a web application managed by the smart city officer. This action has been identified and selected to address the need for a better view on the progress of programmes, projects and initiatives which relates to smart solutions in the different domains in Iași city. It serves essentially the Iași smart officer, his/her team and the concerned stakeholders. The aim is to have different templates of dashboards with monthly updates on the projects / programme KPIs (such as earned value, % progress, estimate to complete, etc.). This information could also be published on the Iași city website for the greater public. It can be built on standard technology such as O365 SharePoint and Power BI or similar tools from other cloud vendors (AWS or Google).		

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes All sub-sectors	2 to 3 FTE- positions in City Hall	Ensure inclusive design and accessibility of software and digital systems Policies to promote an inclusive and supportive work environment	Entirely smart action

Implementation timeline: 2023-2024	**Action Owner and Implementing Agency**: Smart city office
Indicative Project Costs: CAPEX: EUR 150,000-250,000 OPEX: 30% of investment cost: EUR 50,000-80,000 / year	**Other stakeholders and role:** Concerned authority, organisation, office, or department in charge of the smart or digital solution in place for updating the information and KPIs in the platform. Iași City hall – procurement.
Financing mechanisms and sources: City budget, European funding	
Key Direct Benefits: Attention should be paid to the accessibility of the software for users with varying needs. Inclusion should be prioritised in the design of digital systems to ensure they are accessible to persons with disability (e.g. vision impairment). Adoption of policies to promote an inclusive and supportive work environment at Iași City level. and enforcement of similar standards among any municipal contractors engaged to develop and maintain the software.	
Key Indirect Benefits/Co-benefits: Transparent communication to other authorities and public	
Key Indicators & Metrics of success: Web application LIVE and number of KPIs logged/mentioned on the application	

Measure Impact through (improving) **State and Pressure indicators:** N/A	Estimated measurements of **GHG reductions**: N/A	Benefits in terms of climate change **adaptation & resilience**: N/A

Quantitative benefits: Efficiency gains and employment created	**Qualitative benefits:** Better knowledge on progress in smart projects/applications

SM 2 Real time information on air quality - the first step in creating an integrated smart platform for Iași City

	Sector: Smart city	**Supporting Strategic Objective(s) of:** Integrated Data Management and Smart City platform
Action Type: Action/ Investment	**Linked GCAP Actions**: IIn urban sectors: TR Transport, BU Buildings, LA Land use	
Policy/Investment Action Classification: Action/ Investment	**Existing Linked Activities/Initiatives:** Digital transformation strategy of Iași City July 2019	
Priority Environmental Challenges addressed: High level of air pollution	**Supporting City (and or national) Policies and Plans**: Digital transformation strategy of Iași City July 2019	
Rationale and Justification for Action: Smart solutions enhancing city livability, efficiency		

Description of Action:
Making available the measured authentic data on air quality via an App. Air quality monitoring in Iași is carried out through three automatic monitoring stations, which are part of the National Air Quality Monitoring Network. The following pollutants data is collected via these three indicators: SO_2, NO, NO_2, NO_x, PM2.5 gravimetric, PM10 gravimetric,*O_3, Benzene, Toluene, Oxylene, Ethylbenzene, m, p-xylene, etc. At. At least five more additional monitoring stations could be foreseen and should be equally distributed over the city area to record air pollution with the similar wide set of indicators as the one collected via the currently functioning stations This has to be coordinated with the transport action, where sensors could be placed on traffic dense road segments. This data can be shared on the existing open data platform upon integration using the required communication protocol. Once set-up, the data is automatically updated in real-time (or aggregated).

	Job Creation Potential	**Gender and Social Inclusion Aspects**	**SMART Aspects**
Cross-Cutting Themes All sub-sectors	Same staff as identified under SM1	Ensure accessibility of air quality information Online and in-person community consultations to hear the public's views, particularly vulnerable groups' needs Inclusive design of information delivery platform(s) to ensure they are accessible to persons with disability (e.g. vision impairment) and households with limited computer and/or web access.	Entirely smart action

Implementation timeline: 2023	**Action Owner and Implementing Agency**: Smart city office and promotion and environmental quality and monitoring service
Indicative Project Costs: CAPEX: EUR 50,000-150,000 OPEX: EUR 10,000-30,000 / year	**Other stakeholders and role:** Iași City Hall – Procurement Departement and Promotion and monitorig of environmental quality service; private partners: Orange and uRad companies
Financing mechanisms and sources: City budget, European financing	

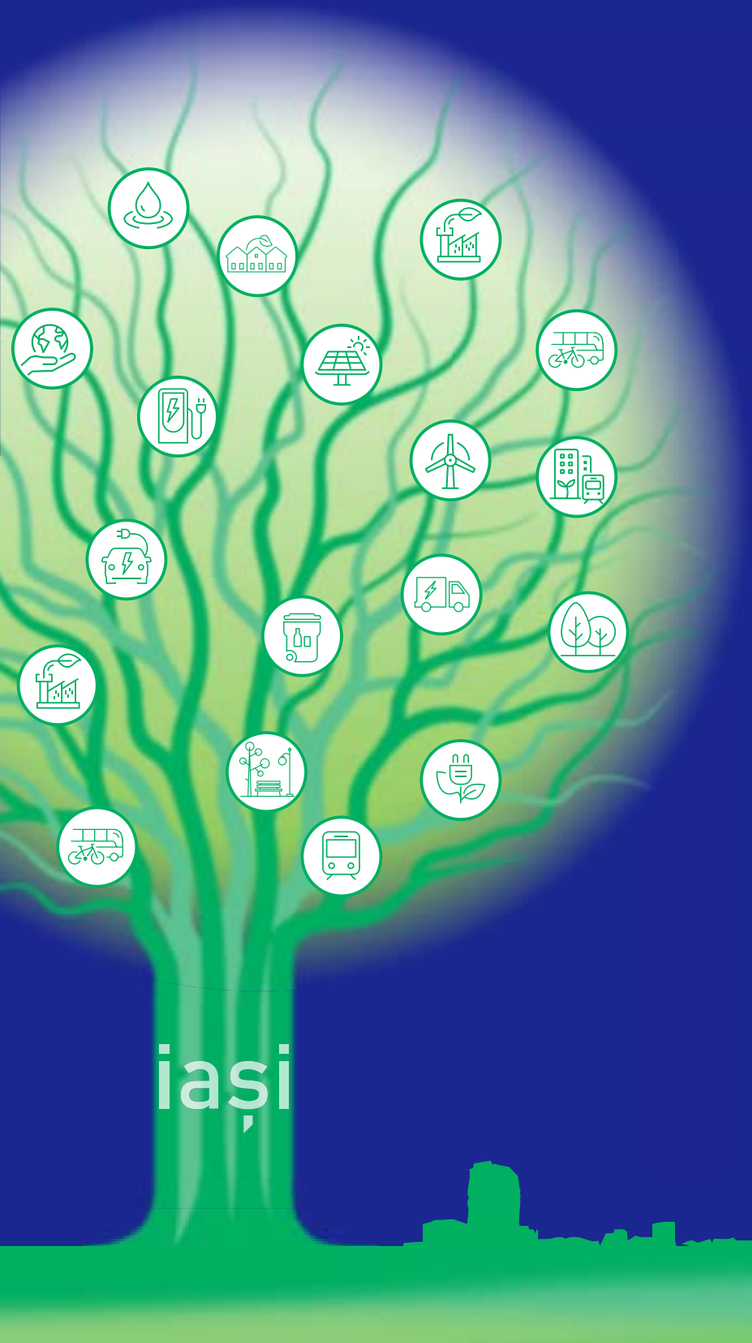
Key Direct Benefits:
Air quality is a key environmental challenge in Iași, therefore attention should be paid to the accessibility of the air quality information. While the primary benefit will be to enable the green city implementation team to easily follow the impact of GCAP through this smart platform, it will also help in raising public awareness of the situation. Further information campaign can be built on the basis of this platform to enhance individual contribution to the air quality improvement.

Key Indirect Benefits/Co-benefits:
Better and transparent communication to other authorities and public

Key Indicators & Metrics of success:
Web application in place with real time information about air quality

Measure Impact through (improving) **State and Pressure indicators:** N/A	Estimated measurements of **GHG reductions**: N/A	Benefits in terms of climate change **adaptation & resilience**: Air quality

Quantitative benefits: Efficiency gains, employment created	**Qualitative benefits:** Better knowledge and insights on air quality



5. IMPLEMENTING THE GCAP AND TRACKING PROGRESS

5 IMPLEMENTING THE GCAP AND TRACKING PROGRESS

5.1. Sector Mid-Term Targets

TABLE 17 GCAP MID-TERM TARGETS

	Indicator name	Current situation				GCAP interventions		Benchmark		
		Topic	Unit	Current value	Trend	Target Value in 5 years	GCAP interventions / impacts	Green	Yellow	Red
1	PM 2.5 concentration	Air	µg/m3	23,53	↑	below 20	TR1, TR2, TR3, TR4, EN1	10	10-20	20
2	NOx concentration	Air	µg/m3	112,14	↑	below 80	TR1, TR2, TR3, TR4, EN1, WS6	40	40-80	80
3	Average river BOD	Water	mg/L	9,13	↓	below 4	WA5, WA6, WA8	2	2-4	4
4	Share of public green space within city limits	Green Space	%	8	↑	above 30	LA1, LA2, LA3, LA4, LA5	50	50-30	30
5	Share of population living within 300m of 0.5 ha of open space	Green Space	%	23	↑	above 30	LA1, LA2, LA3, LA4, LA5	50	50-30	30
6	Percentage of diesel vehicles in total vehicle fleet	Transport	%	49	↑	below 30	TR1	20	20-30	30
7	Transport modal share using private motorised transport	Transport	%	68	→	below 50	TR1, TR2, TR3, TR4	30	30-50	50
8	Road length dedicated exclsively to public transit per 100,000	Transport	km	0	→	above 2	TR1, TR3	40	10-40	10
9	Lenth of dedicated cycle path per 100,000 population	Transport	km	12,9	→	above 25	TR2	25	15-25	15
10	District heating on carbon intensive sources	Energy	%	100	→	below 30	EN1	10	10-30	100
11	Share of renewables in total energy consumption	Energy	%	4	→	above 10	EN5, WS6	20	10-20	10
12	Electricity consumption in residential buildings above	Buildings	kWh/m2	31,34	→	below 26	BU1, BU2, BU3, BU4, BU6	21	21-26	26
13	Fosil fuel consumption for heating and cooling in residential buildings	Buildings	kWh/m2	141,18	→	below 126	BU1, BU2, BU3, BU4, BU6	96	96-126	126
14	New buildings with green certification	Buildings	%	0	↑	above 5	BU4	50	25-50	25
15	Physical water loses	Water	%	38	↑	below 20	WA1, WA2, WA3, WA4	30	30-45	45
16	Energy used for water production and supply	Water	Kwh/m3	0,83	↓	below 0.75	WA1, WA2, WA3, WA4	0,35	0,35- 0,5	0,5
17	Annual stormwater or sewerage overflows per 100 Km	Water Resilience to Floods/	No of events/ year	69	→	below 40	WA5, WA8	20	20-50	50
18	MSW treated in sorting and processing facilities	Solid Waste	%	5	↑	above 15	WS	75	25-75	25

↑ Negative Trend- value growing

↓ Negative Trend- value falling

↑ Positive Trend- value growing

↓ Positive Trend- value falling

→ Stable state or only punctual data

5.2. Financing GCAP Implementation

The overall costs for the GCAP measures detailed above are estimated at approximately EUR 580 million at today's (March 2023) prices and their implementation will require a significant financing effort from the municipality and its service providers. Over the proposed implementation period of the next few years, there are likely to be a large number of financing opportunities available with grants from EU, soft loans from the EBRD and other financing institutions and subsidies from the state budget under different financing programmes for infrastructure development. This includes the EU funds under different operational programmes covering the period 2021-2027 and the National Recovery and Resilience Plan (with financing until 2026) providing financial support from the central government.

The Municipality has already taken on several long-term loans and bonds in both RON and EUR for different investment projects that are currently completed or under implementation. The calculation of the current indebtedness level of Iași Municipality shows that the actual value is about 4.7%, which is below the maximum ceiling of 30% set by national legislation. This demonstrates that the city can contract further loans (if necessary) for financing infrastructure development and the actions proposed under the GCAP. If the Municipality extended its borrowing to consume up to the entire celling of 30% allowed by the legislation, they could contract a total level of loans of around EUR 300 million. However, this does not necessarily mean that they could also repay this level of loans. Based on the level of the operating surplus recorded in 2021, Iași Municipality is currently generating financial resources that would allow loan repayments with a total value of up to EUR 75 million which represents approximately 15% of the total estimated GCAP investment needs.

In the next few years, the municipality should attempt to use its debt contracting capacity to attract blended financing with a significant percentage of grants and subsidies if possible. An important portion of the required investments in infrastructure and associated green measures can be financed either by applying for financing from EU funds under different operational programmes covering the period 2021-2027 or from the National Recovery and Resilience Plan for which the co-financing required of the local authorities is 2%. The municipality has started to apply for such financing for different investment components.

Part of the proposed investments can also be financed by the local utility companies from their own revenues. For example, the water utility company (ApaVital Iași) is currently pursuing an ambitious investment programme from its own sources and debt financing over the next few years. Similarly, the district heating and local public transport companies could finance part of the investment in infrastructure, either from attracted financing (grants, subsidies and loans) or from their own sources.

The implementation of a multi-sectoral investment programme of approximately EUR 580 million will lead to a significant increase in direct job creation mainly in the construction sector with an estimated several hundred jobs created over the implementation period. Further jobs will be generated in the longer-term to provide management, operational and maintenance services for the assets created.

In addition, the development of green infrastructure will make the economic and social environment more attractive for potential private investors. In turn this will lead to an increase in economic growth of the region with a resulting positive impact on indirect job creation and on local budget financing (increase in own-source revenues from income tax, increase of direct local taxes and fees, etc.).

5.3. Governance structure for GCAP Implementation and monitoring

The governance structure which will be established for GCAP management implementation support and monitoring is presented in Figure 10 below.

The structure is formed by:

- The Iași **City Mayor** as the leader of the GCAP implementation, chairing the the **GCAP Supervisory Board.** The Board: (i) provides high-level oversight of GCAP implementation; (ii) monitors progress and outcomes of GCAP actions; and (iii) helps resolve GCAP implementation issues which require cross-institutional collaboration.
- The **GCAP Implementation & Monitoring Working Group** is responsible for the execution and monitoring of actions, led by the **Green City Coordinator**, with **Members / Representatives of Implementation Units** from key implementing city departments and utility companies responsible for leading the implementation of actions allocated to them.
- **GCAP Ambassadors** are those representing the broad range of city stakeholders in the GCAP implementation process

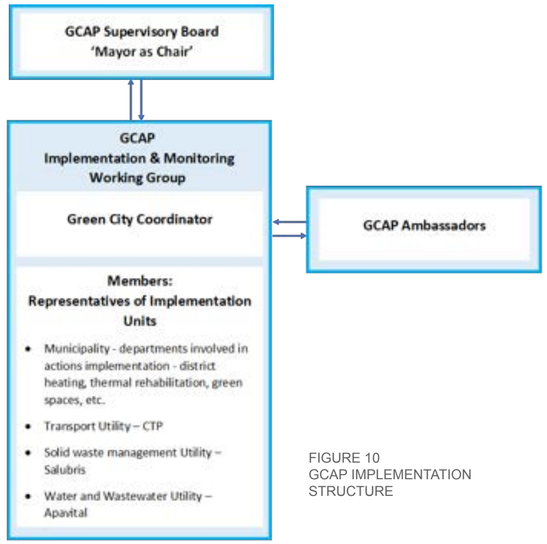


FIGURE 10
GCAP IMPLEMENTATION STRUCTURE

Roles and responsibilities in GCAP implementation and monitoring:

The Iași **City Mayor** is the ultimate executor of the GCAP.

In this role the Mayor establishes the GCAP implementation structure and designates members of the GCAP Supervisory Board, the Green City Coordinator and members of the GCAP Implementation & Monitoring Working Group.

The **GCAP Supervisory Board** is a group providing generic GCAP oversight and an advisory role to the City Mayor on GCAP implementation. The group consists of members of the Municipal Council (heads of relevant commissions, environmental, budget, urban development, public services) as well as heads of main subordinated utilities (transport, solid waste, water and wastewater), representatives of academia, local economic enterprise, the environment and civil society. The group would meet biannually and analyse the overall implementation of the GCAP, or more frequently if the need arises.

The **GCAP Implementation & Monitoring Working Group** has the executive role in implementing the Green City Actions.

The Group is led by a **Green City Coordinator**, responsible for:

- Supporting members of the Implementation Units in execution of the GCAP Actions by providing clarifications, organizing progress meetings, identifying risks and obstacles,
- Reporting to the City Mayor and the Supervisory Board on the status of implementation and issues arising likely to impact upon timely GCAP implementation,
- Organizing stakeholder participation in the process, including communication and acting as contact point for the GCAP Ambassadors
- GCAP monitoring by coordinating the follow-up information provided by Members of the GCAP Implementation & Monitoring Working Group and Implementation Units.

Members of the Implementation & Monitoring Working Group are designated by the City Mayor, representing the Municipality and utilities involved in GCAP implementation- transport, solid waste, water and wastewater, energy etc. Each member is responsible for the execution and monitoring of GCAP actions allocated to them. While remaining within their teams of origin (Implementation Units), members of the Group report to the Green City Coordinator on the progress of the actions allocated to them and contribute to the monitoring of GCAP environmental and development impact.

GCAP Ambassadors represent civil society, NGOs, academia etc., such as promoters of alternative transport, sports, youth etc., willing to support the GCAP implementation process. They are regularly informed about the status of programme implementation, helping to communicate with stakeholders and assuring inclusive appro ach in the green city transition and providing community feedback to the GCAP implementation process. They remain in contact with the Green City Coordinator and relevant Members of the GCAP Implementation Units in order to support and monitor the progress of GCAP implementation.

Monitoring and Reporting

It is proposed that the agencies responsible for implementing each GCAP Action monitor physical progress and report this on an annual basis to the GCAP Implementation and Monitoring Group. Information on GCAP progress will then be consolidated into an annual report which will be presented to the Steering Committee. In cases where progress falls significantly behind implementation plans corrective actions will be recommended by the GCAP I
Committee as appropriate.

PHOTO 74-75 GREEN CITY OF IAȘI, OCTOBER 2022

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ANNEXES

ANNEX 1: STAKEHOLDERS INVOLVED IN GCAP PROCESS – OVERVIEW

	Stakeholder	Role	Stage consultations	Inputs/ Concerns	Input integrated in GCAP
1	Steering Committee	Decisional	Validate/ Amend proposals	1-to-1 meetings Decide upon investment lists on Water, Transport	providing input for Actions List- cap. 4.2-WAT 1.3, 1.5, 3.3, 4.1; TRA 1.2
2	Technical Working Group	Data input Consultative	Validate/ Amend proposals	1-to-1 meetings Decide upon investment lists within GCAP actions on topics Environment, Energy, Buildings, Waste, Adaptation & resilience	providing input for Actions List- cap. 4.2- TRA 1.2, 1.3, 1.7, WAS 1.3, 2.2, ADA 2.5, ENE 1.1, 3.3, BUI 1.1, 1.4
3	NGOs social	Data input Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions	Survey, events (working groups discussions)- Rehabilitation and modernization of the leisure area, development project in regard with lake shore, green roofs, capacity building and awareness raising on reuse and segregation of waste. Expressing interest in participating in the GCAP implementation.	providing input for Actions List- cap. 4.2-Action 1, 2, 3, 5, GOV 4.1
4	Academia	Data input Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions	Survey, events Interest shown within GCAP implementation phase	providing input for Actions List- cap. 4.2-GOV 4.1, BUI 1.1, 1.4, 1.5, 2.1, 2.2
5	Public authorities	Data input Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions	Survey, events	providing input for Actions List- cap. 4.2-ADA 2.5
6	Business	Data input Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions	Survey, events (working groups discussions)- funds needed for RES implementation, policy update on environmental issues decarbonization objective for all activities performed by the City (public transport, etc.), funds for RES solution implementation	sharing know-how on EU financed projects, indicating potential source of finance for GCAP actions
7	Banking	Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions within Survey	Survey, participation in events	sharing know-how on EU financed projects, indicating potential source of finance for GCAP actions. Offering support for providing loans for GCAP actions
8	Civil society	Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions within Survey	Survey, events (working groups discussions) Public transport, traffic jams, bike corridors, green spaces, smart charging system within public transport, open spaces for cultural and academic events, funds needed for RES solution implementation.	providing input for Actions List- cap. 4.2-TAR 1.2. 1.3
9	Culture	Consultative	Feed-back on environmental challenges, strategic objectives and shortlist of actions within Survey	Survey, participation in events	
10	Mass media	Communication	Public information	Taking over press releases/articles distributed by the City Hall before GCAP events (local newspaper Curierul de Iași)	Local publication Curierul de Iași, June 23, 2022 – press article regarding GCAP project and stakeholder event Local television-TV Life, June 23, 2022 – interview with Mayor Mihai Chirica, during stakeholder event break Local publication, Curierul de Iași, November 17th, 2022- announcement of the event

GREEN CITY ACTION PLAN FOR IASI, ROMANIA

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