Green City Action Plan Tbilisi 2017 – 2030 Chapter Transport

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Dr Vladislav Bízek Key Expert: EU Acquis and Environment Enforcement, WECOOP











This project is implemented by the consortium led by Stantec, with ELLE (Estonian, Latvian & Lithuanian Environment), ACTED, and KommunalKredit Public Consulting as the consortium partners.

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Introduction

GCAP Tbilisi 2017 - 2030 has been prepared under the support by EBRD (through the trust fund of the Czech Republic) by the Czech company EMPRESS (ENVIROS) and adopted by the Tbilisi authorities in 2017.



EBRD methodology has been applied.





GCAP Tbilisi – scope

GCAP Tbilisi covers 8 sectors

- Transport
- Buildings
- Industry
- Energy
- Water
- Solid Waste
- Land use + Biodiversity
- Resilience





GCAP – Transport system in Tbilisi

The city transport system of Tbilisi is an interactive combination of the following elements:

- Road vehicle fleet (buses, minibuses, light and heavy duty vehicles, private cars);
- Transport infrastructure (roads, metro, cable railways, bicycle paths, walking areas);
- Transport management/organisation (including parking policy);
- Passenger expectations and experience.

High share of air pollution in the City comes from transport, with diesel-powered vehicles being a major contributor, (most of buses and all mini-buses and taxis use diesel).

There were around 400,000 cars registered in Tbilisi of which 74% were over 15 years old.





GCAP – Transport in Tbilisi – Indicators - Pressure

Source of pressure	Indicator	Status	Trend
Energy efficiency and type of energy used	Average age of vehicle fleet (total)		No visible trend
	Average age of vehicle fleet (private cars)		No visible trend
	Average age of vehicle fleet (buses)		Positive - decrease
	Average age of vehicle fleet (minibuses)		Negative - increase
	Percentage of diesel cars in total vehicle fleet		Positive - decrease
	Fuel standards for light passenger and commercial vehicles		Positive - increase
	Share of total passenger cars run by electric, hybrid fuel cell, LPG, CNG energy (total and by type)		Positive - increase
Choice of transport mode	Transport modal share in commuting (cars, motorcycles, taxi, bus, metro, tram, bicycle, pedestrian)		Negative– increase of private cars
	Transport modal share in total trips		Negative –increase of private cars
	Motorisation rate		Negative - increase
	Average number of vehicles (cars and motorbikes) per household		Negative - increase
	Kilometres of road dedicated exclusively to public transit per 100 000 population		Positive - increase
	Kilometres of bicycle path per 100 000 population		Positive - increase
	Share of population having access to public transport within 15 min by foot		Stable
	Frequency of bus service		Stable
Road congestion	Average travel speed on primary thoroughfares during peak hours		Stable
	Travel speed of bus service on major thoroughfares		Stable
Resilience of transport	Interruption of public transport systems in case of disaster		Stable
systems	Efficiency of transport emergency systems in case of disaster		Stable





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GCAP – Transport in Tbilisi – Indicators – Response

Item	Indicator	ОК	Improvement needed	Not existing	Comments
Energy efficiency and type of energy used in transport	High polluting vehicles are regul ated / Energy efficient vehicles ar e incentivised through fiscal instr uments				The State is promoting the import of newer vehi cles, hybrids and electric vehicles through custo ms fees in force introduced on Jan 1 2017. Custo ms excise on hybrid cars is halved compared to t hat of ICVs. From 2018 all vehicles will subject to mandatory technical inspection. All of these a ctions will start to improve this indicator.
Choice of transport modes	Extension and improvement of p ublic and non-motorized transpor t is planned and supported throug h investment in place				Construction of a new metro station is ongoing; TTC has already started replacement of the curre nt bus fleet with more energy efficient buses for public transportation. In Tbilisi all mini-buses (marshutka) were replaced with new ones a few y ears ago.
	Public and non-motorised transp ort is promoted through Informati on and awareness campaigns				There is no such information and awareness enh ancing campaign in Tbilisi
Congestion	Traffic demand is managed (cong estion charges, smart technologie s)				Uniform parking fees. No smart technologies or any other TDM tools used. No congestion chargi ng
Resilience of transport systems	Public transport emergency mana gement (in publicly and/or privat ely run networks) is planned and tested				TTC claim that extra buses available are availabl e to cover emergencies.



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GCAP Tbilisi – Problem Tree Analysis - Air





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GCAP – Problem Tree Analysis – Climate Change Mitigation







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GCAP – Priority Setting - Transport

Measure	Level of Priority		
"Umbrella priority": Preparation and adoption of the Tbilisi Sustainable Urban Mobility Pla	an		
Replacement of existing obsolete buses by new CNG vehicles together with optimisation of the new fleet in accordance with the local demand for transport	High		
Bus Network Restructuring: Development and implementation of bus and minibus network restructuring, introduction of network hierarchy and possible bus rapid transit corridors, bus lanes and priority for bus at selected junctions.	High		
Reduction of the number of minibuses and replacement with new buses.	High		
Traffic management optimisation (making full use of the functionalities of the intelligent transport system already in place) to reduce traffic bottlenecks	High		
Development of a surface transit network taking into account the existing bus routes, and including bus rapid transit corridors, cable propelled transit and tramway transport options.	High		
Increase attractiveness of public transport	High		
Extension of road network	Medium		
Regulation of taxi transport	Medium		
Extension of cable car lines and introduction of tramway lines	Medium		
Introduction of cycle lanes & walking routes	Medium		
Upgrade and refurbishment plan for existing metro lines, rolling stock and stations	Medium		



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GCAP – Vision and Strategic Objectives

Vision

• To Develop a Sustainable City Mobility System

Strategic objectives

- A Sustainable Urban Mobility Plan (SUMP) which represents an "umbrella" for the implementation of strategic objectives 2, 3 and 4
- 2. Public road vehicle fleet with low levels of emissions and noise and high levels of safety
- 3. An optimised transport infrastructure network with prioritisation of public transport on roads
- 4. An optimised City traffic management system including all achievable features of an Intelligent Transport System





GCAP – Measures in Transport Sector

GCAP Tbilisi includes 6 measures to be implemented in the transport sector:

- Development of Sustainable Urban Mobility Plan
- Bus Fleet Renewal (low/zero emission buses)
- Bus Network Restructuring
- Surface Transport Network Feasibility Studies
- Development of Traffic Management System
- Regulation of Taxis





GCAP – Measure Description and Assessment – SUMP - 1

Sector:	Transport					
Green City Measure:	Sustainable Urban Mobility Plan (SUMP)					
Category of Measure:	Soft measures					
Description of measur e and main items:	Develop a comprehensive sustainable urban mobility plan (SUMP), based on do-nothing, moderate and transformative scenarios, quantification of benefits, impact and economic viability (for proposed scenario, measures and subprojects), investment plan and financing sources and mechanisms (funding of SUMP to be defined).					
	plan.					
	Economic returns for investors: 0 (Not applicable)					
Expected economic	• Economic Growth: 0 (Not applicable)					
benefits	• Job creation/Employment: 0 (Not applicable)					
	Economic inclusion: 0 (Not applicable)					
	Impact: $3 = high 2 = medium 1 = low 0 = none$					
Expected social benefits	Public health: 2 (Reduction of harmful emissions into the air)					
	• Access to basic services: 3 (Better access to transport services, better quality of transport services)					
	• Safety: 2 (Higher safety of transport)					
	• Gender equality: 0 (Not applicable)					
	Green behaviour and awareness: 3 (Supports environmental awareness)					
	Community involvement: 3 (Support by citizens can be expected					





GCAP – Measure Description and Assessment – SUMP - 2

Expected environmental benefits	Impact: 3 = high 2 = medium 1 = low 0 = none					
	• Air quality: 2 (Reduction of emissions of particulate matter (PM ₁₀ , PM _{2.5}), benzo(a)pyrene and SO ₂)					
	• Water quality: 0					
	• Soil quality: 0					
	• Biodiversity: 0					
	• Water use: 0					
	• Energy use: 2 (Higher efficiency of transport)					
	• Land use: 0					
	• Material use: 0					
	• Climate change mitigation: 2 (Moderate reduction of CO_2 and CH_4 emissions)					
	Climate change adaptation: 2 (Increased resilience of city transport system					
Estimated implementation cost:	€200,000 (OPEX)					
Potential source of Funding	International donors and Funds (technical assistance)					
Statement of the City:	Relevant and priority measure for the city,					
Implementation timescale	2-3 years					
	1 easy, 2 medium, 3 difficult					
Difficulty of Implementation	• Political 1					
Difficulty of Implementation	• Financial 2					
	• Social 1					
Competent Authority:	City Department					
	• SUMP should be based on existing Tbilisi Sustainable Urban Transport Strategy 2015 - 2030					
Notes & Comments	• ToR for SUMP is necessary as a first step					





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GCAP – Measures in Transport Sector - timing

Green City	Mid-term Targets		Timescale						
Measures	(2025)	Implementing Body	2018	2019	2020	2021	2022	2023	Potential Funding Sources
Development of Sustainable Urban Mobility Plan (SUMP)	SUMP implemented	City Hall (Transport Office); Tbilisi Transport Company							City Budget; International Donors (Technical Assistance)
Bus Fleet Renewal	A bus fleet of low emission bus es is in place. The number of minibuses is reduced to be replaced by additional buses	City Hall (Transport Office); Tbilisi Transport Company							EBRD loan; Other International Donors
Bus Network Restructuring	Existing bus routes restructured to prioritise buses	City Hall (Transport Office); Tbilisi Transport Company							City Budget
Traffic Management System	A traffic management system is in place. Optimised parking policy implemented	City Hall (Transport Office)							City Budget; International Donors
Surface Transport Network Feasibility Studies	Feasibility studies for new cable -ways, extended Metro and tram system completed	City Hall (Transport Office)							City Budget; International Donors (Technical Assistance)
Regulation of Taxis	Regulatory framework for taxis is in place	City Hall (Transport Office); Taxi Operators							City Budget



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Tbilisi - Plans of Public Transport Development Compliant with GCAP

- New buses: 143 new CNG Man Euro 6
- 100 new buses in next years
- Metro expansion to TSU
- Bus network restructuring project by Mott Macdonald: BRT and LRT
- Public Transport Restructuring EBRD
- Cable cars as public transport
- Pedestrian Master Plan
- Gradually restricting parking on sidewalks



Transport in Tbilisi – recent developments compliant with GCAP

- In 2021, 180 Isuzu 8-meters long buses (EURO 6) and 300 Ford minibuses purchased
- In 2022 the City Hall plans to purchase additional 200 units of 18-meters long buses
- Introduction of bus lanes is in progress; they have been already set up on several streets and avenues (for example, on Rustaveli Avenue)
- In 2020, EBRD has approved a EUR 75 million loan for Tbilisi metro modernization
- Restoration of former cable car line (closed down 30 years ago)
- Hourly paid parking has started in Tbilisi, with varying fees per zone
- In 2020, Chavchavadze Avenue was unveiled as Tbilisi's first shared and pedestrian friendly avenue.





GCAP – More information

GCAP Tbilisi (English): <u>https://tbilisi.gov.ge/page/green-city?lang=en</u> EBRD Green Cities: <u>https://www.ebrdgreencities.com/</u>





Thank you!

Office 15 5 Dostyk street Z05H9M3 Nur-Sultan, Kazakhstan www.wecoop.eu info@wecoop.eu





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