



European Bank for Reconstruction & Development

## **Non-Technical Summary**

**Tbilisi Metro Project and Tbilisi Bus Extension**

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## 1. INTRODUCTION

EBRD is considering provision of a sovereign loan of up to EUR 60 million to Georgia, for the benefit of the Tbilisi Transport Company Ltd (the “Company”), a municipal company which operates public buses, the metro system and cable cars in Tbilisi.

The loan proceeds will be used to finance the acquisition of approximately 40 modern metro cars (10 train sets) for the Company, to replace the existing outdated rolling stock. The metro system’s current condition creates major concerns. In spite of the continued efforts of the Company to keep maintenance activities on track, most components of the metro systems are worn out due to decades of under-investment. Out of 141 units of rolling stock, on average 35 per cent is over 41 years old and 65 per cent over 27 years. The average lifespan of existing metro cars is 35 years, thus the urgency of replacement is acute. The technical Due Diligence has been already undertaken by an independent technical consultant.

EBRD is also considering the second tranche of EUR 15 million under the existing loan agreement for the rehabilitation of bus depot. The Technical Due diligence is underway and will be finalized soon.

The proposed investments will improve the reliability, safety and efficiency of public transport. Compared to private vehicle travel, the electric powered metro will reduce transport GHG and air pollution emissions in Tbilisi, particularly due to the fact that electricity in Georgia is mostly produced from renewable sources. The Project is embedded into the City’s plans for development of sustainable mobility in Tbilisi, including related policies and active modes (walking and cycling), through the Sustainable Urban Mobility Plan (“SUMP”)

This Non-Technical Summary (NTS) provides a description of the project and describes the potential benefits and impacts associated with its construction and operation. It also describes how these will be mitigated and managed through all phases of the project’s development. In addition, it provides a summary of the public consultation activities and the approach to future stakeholder engagement.

The NTS has been prepared for the potential financing of the Project by the European Bank for Reconstruction and Development (EBRD)

## 2. PROJECT DESCRIPTION

The Projects are part of a broader programme aiming to assist the City in reforming its management of public transport by financing the renewal of bus and metro systems, and network restructuring.

The project includes two parts:

- I. Finance the acquisition of approximately 40 modern metro cars (10 train sets) for the Tbilisi Transport Company (TTC), to replace the existing outdated rolling stock. 79 of the fleet of 192 cars (41%) is over 40 years old. By 2030 it is very likely that the majority of this older part of the fleet will become unserviceable due to the unaffordable cost of ongoing repairs and increasing difficulty in obtain correct quality of spares. Maintenance costs normally increase rapidly from about year 32 to 40 and thereafter rolling stock becomes significantly difficult to keep serviceable.

This new modern metro cars are going to be placed in Gldani depot. The Gldani depot is by far the larger with 14 rail tracks. It serves the Red line’s fleet of 33 trains (132 cars). There is already the Metro Tbilisi Rolling Stock Technical Specification (21.11.2019) which describes design criteria, general train concept, operation conditions, technical data, mechanical, electrical and pneumatical parts.



Map 1. Location of Metro depot Gldani



Photo 1. Metro Gldani

- II. EBRD is also considering the second tranche of EUR 15 million under the existing loan agreement for the rehabilitation of bus depot. Bus depot №1 is considered to be reconstructed. Project documentation for reconstruction is already developed.



Map 2. Location of Bus Depot 1



Photo 2. Bus depot 1

### 3. BACKGROUND

Tbilisi Transport Company (formerly Tbilisi Metro Ltd) is 100% owned by Tbilisi City Hall, has been operating since 1966 when the first subway to Didube - Rustaveli was opened. In 2009, according to the decision of the Tbilisi City Hall, the company was given ownership of municipal buses and related real estate in the form of three car parks. In 2012 the company joined Tbilisi Railway Infrastructure and the newly constructed Rike-Narikala Railway. In 2018, the company joined Tbilisi's parking system with up to 32'000 parking spaces.

The company employs up to 6'492 people who work continuously to provide high-quality transport services to travelers and city guests alike and to make their journey as safe and comfortable as possible.

Bank has been supporting TTC with a number of TCs (Health and Safety Management System TTC Corporate Development Programme (CDP) and Stakeholders Participation Programme (SPP), Gender, Traffic Safety), review of existing corporate EHS management systems was mostly based on the analysis and desktop review of the available documentation and reports.

### 4. PROCESS

Technical specification for new metro cars is already developed by TTC. Technical Due Diligence (TBILISI METRO TRAINS. DUE DILIGENCE STUDY: TECHNICAL Metro trains procurement. 23.01.2020) is already provided for the Project. TTC is currently in process of tender for metro cars' supplier. Generally, electric trains are designed with relatively high levels of electrical energy efficiency. Electric trains produce no emissions at the point of use and are therefore the cleanest and most environmentally friendly form of mass passenger transport.

The reconstruction project for metro depot №1 is developed. It includes modernization of buildings, service center, new bus washing station, fuel station, water treatment and water supply system, fire safety equipment and fire fighting system, security system, electrical supply, air filtering system for emission sources, special area for waste segregation, medical room.



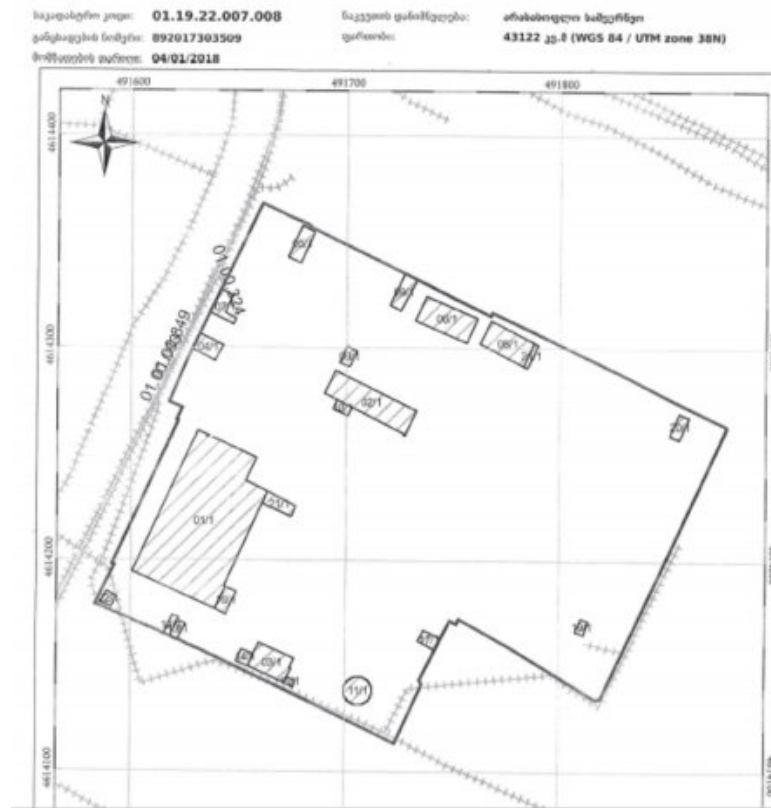
Picture 1. Visualization of bus depot rehabilitation



## 5. ENVIRONMENTAL BENEFITS, ADVERSE IMPACTS AND MITIGATION MEASURES

### *Land use planning and changes*

No changes are expected from project activities. Bus depot reconstruction will not affect the size of land plot which is currently used for bus depot.



Scheme 1. Bus depot №1

### *Land contamination*

The possible contamination of the site is related to future construction wastes, as well as the waste produced by future bus fleets operation. Ground analyses were performed by the Company to mitigate any negative impacts on natural resources.

Tbilisy Transport Company has company's Waste Management Plan which should be followed during and after reconstruction.

The waste on site must be removed under a Waste Management Plan using a legitimate and reputable waste contractor, to an appropriate facility. In addition, any waste generated during construction must also be disposed of under a waste management plan by a reputable waste contractor, to an appropriate facility. Waste disposal contractors are already identified by the Company.

Mitigation during the construction phase should include implementing best practice during construction works and the operational phase. Upon application of the mitigation measures the magnitude of any residual impacts both in the construction and operational phase are medium.

### *Water resources, impacts and management measures*

The project will use a relatively low level of water, mainly for washing of buses.

It is planned to install Christwash system for bus cleaning purpose. The advantage of such system is big recycling ratio. Up to 85% of water will be reused. Where possible water consumption should be minimised, and where appropriate non-potable water should be used.

All the works are supposed to be according to Law of Georgia on water (No 936–IS; dated 16/10/1997).

#### ***Habitats, ecology (flora and fauna) and nature conservation, impacts and management measures***

Generally, there are no designated conservation areas on the site of the proposed project.

#### ***Air quality, impacts and management measures***

The impact of the proposed project has been assessed both during the possible construction phase and during the operational phase for both air quality and climate. Monitoring measures should be provided both for reconstruction and operation phases.

All the works are supposed to be according to Law of Georgia on air protection.

#### ***Traffic, noise and vibration; impacts and management measures. Raw material sourcing and transportation, including borrow pits.***

Reconstruction activities will have insignificant impact on local communities as the depot is situated within the industrial, less populated area of the city. The proposed project will have positive impact on the municipal transportation system of Tbilisi.

#### ***Road safety impacts and management measures.***

TTC is currently in process of ISO 39001 implementation - Road Traffic Safety (RTS) Management System. Moreover, all the transportation activities will be in accordance with Law of Georgia on Roads (N1830-RS).

#### ***Associated infrastructure impacts and management measures.***

The proposed project will have significant positive impact on the infrastructure bus depot.

#### ***Cumulative impacts. Induced (indirectly consequential) impacts.***

The detailed assessments of cumulative impacts as well as induced impacts supposed for performing after the project design documentation finalizing.

#### ***Occupational health and safety issues; including explosives safety***

TTC has corporate health and safety management system and currently is focusing on **ISO 45001 implementation** in bus depot №2 which has better infrastructure and conditions vs bus depot 1 and bus depot 3. The building conditions and infrastructure in the depots 1 and 3 are critical and therefore have significant impact on H&S risks.

The key area of finding relates to the fire safety, hazardous works risk management, obsolesces management standards, gaps in basic H&S programs and leak of HSE behavior focused trainings for employees. It's highly recommended further develop health safety management system in line with ISO 45001 and best available practices, implement OHS management system in metro Gldani depot and bus depot 1 after the reconstruction activities.

#### ***Disruption, health and safety during construction***

Periodical audit process of construction activities by HSE specialists from TTC is recommended to provide.



### ***Consistency with policy, law and other plans.***

The proposed project activities will be implemented according to the existing Georgian legislation and developed corporate management system.

Georgia is currently not a Part to the UNECE's Espoo Convention on the Environmental Impact Assessment (EIA) in a Transboundary Context and its Protocol on Strategic Environmental Assessment (SEA). The country signed, but has not ratified the SEA Protocol

### ***Environmental management plans, mitigation measures and compensatory measures.***

The Projects overall are considered to have a relatively low potential impact on the environment. Considering the positive aspect of infrastructure development, all of the impacts in general are considered of low overall significance.

TTC has already developed environment management system and is in process of **ISO 14001 certification**.

With appropriate mitigation measures the Project can be developed in accordance with EBRD PRs.

## **6. SOCIAL BENEFITS, ADVERSE IMPACTS AND MITIGATION MEASURES**

### ***Socio-economic impacts; including gender and management measures (considering gender specificities and needs).***

The issue of gender equality is important for the visited sites. There is very low percent of women on the top level of the municipal companies all over the country. At the moment 1374 women are working in TTC. Only 22 women are drivers of the buses (out of 1300).

A significant impact on raising the level of employing women makes an Equality Policy of Tbilisi Transport Company (signed in 2019). Since 2017 TTC has made tremendous progress in promoting and putting in practice an Equal Opportunities Strategy. On November 19<sup>th</sup>, 2019 TTC organized a Forum supported by UN-Women organization to raise awareness of female employees in transport sector among the country. TTC was the only one company represented on the Forum with such a high level of developed equal and gender politics and strategy.

### ***Impacts on businesses and employment. Impacts to existing infrastructure and public services. Local traffic and access impacts***

The most important social benefit of the project is the improvement of transportation service for citizens and H&S conditions for employees of TTC.

### ***Land acquisition and resettlement***

Generally, the Project will have low impact on land use and settlement patterns.

### ***Public road safety; including health and safety mitigation in the design.***

There are no special issues related to road safety.

### ***Cultural heritage, impacts and management measures***

No impacts on objects of cultural heritage are expected to have in place.

### ***Social management plans, mitigation measures and compensatory measures***

Environment and Social Management Plan is already developed and followed by TTC. Based on the foregoing, the Project's potential adverse future environmental and social impacts this project is Category B project. Category B projects require an Environmental Analysis to assess any potential future environmental impacts associated with the proposed project, identify potential environmental

improvement opportunities, and recommend any measures needed to prevent, minimise, and mitigate adverse impacts. TTC should continue to implement an ESMS proportionate to the impacts and risks in accordance with PR and monitor and report on the project's compliance with the PRs.

### ***Community health impact and mitigation measures against COVID-19***

The major risk consists of gathering of workers, bringing the workers from different side of city/country, work in close spaces (while reconstructing buildings), lack of disinfection materials. Therefore, to use all preventive measures is mandatory in order to significantly decrease possibility of infecting.

There is no specific OHS standard covering COVID-19. However, some requirements may apply to preventing occupational exposure to COVID-19. Among the most relevant are:

- using gloves, eye and face protection, and respiratory protection.
- when respirators are necessary to protect workers, employer must provide a comprehensive number of respirators for protection
- employer shall furnish to each worker “employment and a place of employment, which are free from recognized hazards that are causing or are likely to cause death or serious physical harm.”

There are also number of general recommendations that shall be implemented during the pandemic.

#### Social distancing

Effective way to slow the spread of COVID-19 is making a conscious effort to keep a physical distance between each other. Social distancing is proven to be one of the most effective ways to reduce the spread of illness during an outbreak. Major measures:

- avoiding non-essential gatherings;
- avoiding common greetings, such as handshakes;
- avoiding crowded places;
- limiting contact with people at higher risk like older adults and those in poor health;
- keeping a distance of at least 2 arms-length (approximately 2 metres) from others.

#### Hygiene

Proper hygiene can help reduce the risk of infection or spreading infection to others:

- wash hands often with soap and water for at least 20 seconds, especially after using the washroom and when preparing food;
- use alcohol-based hand sanitizer if soap and water are not available;
- avoiding touching eyes, nose, or mouth with unwashed hands;
- clean the following high-touch surfaces frequently with regular household cleaners or diluted bleach (1 part bleach to 9 parts water): toilets, phones, electronics, door handles.

#### Wearing masks

For healthy individual, the use of a mask is not recommended for preventing the spread of COVID-19. Wearing a mask when person not ill may give a false sense of security. There is a potential risk of infection with improper mask use and disposal. They also need to be changed frequently. However, it can be a recommendation to wear a mask if person experiencing symptoms of COVID-19 while seeking or waiting for care. In this instance, masks are an appropriate part of infection prevention and control measures.

Employer shall implement the next steps to promote mitigation measures against COVID-19:

- actively encourage sick employees to stay home or separate sick employees if it was noticed at the workplaces;

- review human resources policies to make sure that policies and practices are consistent with public health recommendations and are consistent with existing state workplace laws;
- explore whether possible to establish policies and practices, such as flexible worksites (e.g., telecommuting) and flexible work hours (e.g., staggered shifts), to increase the physical distance among employees and between employees and others if state and local health authorities recommend the use of social distancing strategies;
- identify essential business functions, essential jobs or roles, and critical elements within supply chains (e.g., raw materials, suppliers, subcontractor services/products, and logistics) required to maintain business operations;
- set up authorities, triggers, and procedures for activating and terminating the company's infectious disease outbreak response plan, altering business operations (e.g., possibly changing or closing operations in affected areas), and transferring business knowledge to key employees;
- plan to minimize exposure between employees and also between employees and the public, if public health officials call for social distancing;
- establish a process to communicate information to employees and business partners on Companies infectious disease outbreak response plans and latest COVID-19 information. Anticipate employee fear, anxiety, rumors, and misinformation, and plan communications accordingly.

## 7. MONITORING OF IMPACTS

There will be a need in fully implementing the requirements of the Environmental and Social Action Plan (ESAP), developed for this Project. This includes a requirement to monitor the implementation of the ESAP and monitor ESHS performance.

### **Monitoring during construction stage should include:**

#### **1) Air quality monitoring and pollution prevention**

Monitoring inspections should control:

- technical conditions of the vehicles and construction machinery, control of exhaust gases;
- storage and transportation of bulk materials by a construction Contractor;
- limit use of roads in populated areas;
- protection for the optimal speed of the traffic (especially on earth roads);
- possibility to shut engines or working with a minimum rotation when they are not used and ensure proper maintenance of the all machinery;
- covering properly the vehicles while transporting materials from which dust is expected to be easily spread and provide special pavement or watering in the storage areas for such materials from which dust is expected to be easily spread.

#### **2) Water quality**

Monitoring inspection should include control of:

- contaminated water discharge during the earth works;
- discharging vehicles or equipment for wash down waters;
- proper management of contaminated wastewater generated from construction sites, management of storm waters;
- storage and transportation of liquid materials by a construction Contractor;
- removal of all potential pollutants after the completion of works.

#### **3) Chemical usage and hazardous materials monitoring**

- ensure to check MSDS before purchasing materials for construction activities;

- check PPE for work with chemicals according to recommended in MSDS;
- preventive measures from soil contamination and compliance to rules of storage-usage of fuel and lubricants;
- provide the required by national legislation and international regulations measures for safe handling and storing the hazardous materials.

#### **4) Waste management**

Monitoring inspection should include control of:

- collection and removal after completion of construction works, all kind of wastes (including hazardous wastes) from the area;
- management of municipal and other solid wastes (contaminated wipes used for equipment cleaning, dirty work gloves)
- compliance with the restriction for onsite waste incineration by a construction Contractor;
- removal of hazardous wastes for further management by the licensed contractor.

#### **5) Noise / vibration**

- Monitoring inspection should include hours of operations (in order to exclude noisy works in proximity to residential areas during night hours).

#### **6) OHS**

- provide monitoring according to Construction and Environment Management Plan;
- follow risk assessment and permit to work process for high dangerous works, provide periodical check of compliance;
- periodical safety walks and behavior observation visits from site management team (unsafe conditions and unsafe behavior registration, check of necessary PPE , etc.).

#### **7) Socio-economic and cultural issues including community safety**

- for better control over construction subcontractors' EHS performance it is recommended to apply the same Health and Safety requirements for contractors as for own staff;
- since there is always a possibility for revealing of archaeological items during the excavation works the personnel dealing with excavation should be instructed on monitoring of the soil in pits and extracted spoil for presence of archaeological items;
- develop monitoring frequency by OHS TTC specialist (ones or twice a month audit the construction activities);
- record complaints and relevant response to them.

### **Monitoring during operation phase**

#### **1) Climatic conditions**

Emissions of GHG should be monitored and reported once a year. The EBRD's Methodology for Assessment of Greenhouse Gas Emissions can be used for accounting of the emissions.

#### **2) Surface and ground water quality**

Municipality should monitor the quality of storm water (subject to discharge to rivers) after the onsite treatment on a regular basis. The frequency and scope of sampling will be defined in the course of development of Discharge Specification

#### **3) Air quality**

The quality of air should be monitored by TTC. The scope and frequency of sampling will be defined in the course of development of background documents for obtaining a permit for emissions for the

depot. The air quality monitoring for the extension is applicable to the emission sources that are outside of the project scope.

#### 4) Socio-economic and cultural issues

Client should spread its OHS monitoring system to the bus depot №1 and metro Gldani. Standard transportation KPI's should be developed and measured in order to meet the transportation demands in an optimal way.

### 8. STAKEHOLDER ENGAGEMENT PLAN (SEP)

A Stakeholder Engagement Plan (SEP) has been developed with the objective of identifying key stakeholders and ensuring that, where relevant, they are informed in a timely manner of the potential impacts of project. The SEP also identifies a formal grievance mechanism to be used by stakeholders (internal and external) for dealing with complaints, concerns, queries and comments. If activities change or new activities relating to stakeholder engagement commence, the SEP will be brought up to date. It will also be reviewed periodically during project implementation and updated as necessary. The SEP includes the following:

- Public consultations and information disclosure requirements;
- Identification of stakeholders and other affected parties;
- Overview of previous engagement activities;
- Stakeholder Engagement Programme (SEP) including methods of engagement and resources;
- Grievance mechanism with a template for provision of comments/complaints.

Stakeholders could be individuals and organisations that may be directly or indirectly affected by the project either in a positive or negative way, who wish to express their views.

All general comments, queries and grievances can be submitted to the TTC staff member provisionally appointed to be the CLO, through contact details as shown below:

- Name: Tamaz Robakidze
- Company: TTC
- Postal Address: [Placeholder: TBC by TTC]
- E-mail address: [TRobakidze@metro.ge](mailto:TRobakidze@metro.ge)
- Dedicated Grievance Telephone Number: personal +995 577 788 008; hotline number: +995 32293 44 44
- Website: [www.ttc.com.ge](http://www.ttc.com.ge)
- Facebook page: <https://www.facebook.com/ttc.com.ge/>

## 9. FURTHER INFORMATION

Contact information for this project is provided below:

TTC

Grigol (Gia) Khutsurauli - Director of Metropolitan and Cableways  
Exploitation Issues

David Gdelidze – Head of Transport Safety

Tamar Machavariani - Donor Organization Relation Manager

Nia Tkeshelashvili - Specialist of Donor Organization Relation

Sopo Razmadze - Project Manager

David Gogoladze - Head of Gldani Depot

Yuri Matureli – Chief engineer, Gldani Depot

Mikhael Tatunashvili - Head of Bus Depot #1

Zurab Iezhashvili - Deputy Head of Bus Depot #1

Zurab Sisvadze - Chief engineer of Bus Depot #1