

SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT

Reporting Period: January-June 2019

**GEORGIA: Sustainable Urban Transport Investment Program, Tranche 5
(SUTIP T5)
(FINANCED BY THE ASIAN DEVELOPMENT BANK)**

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ABBREVIATIONS

ADB	Asian Development Bank
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP	Environmental Management Plan
EPSM	Engineering Procurement and Construction Management
GoG	Government of Georgia
SUTIP	Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund of Georgia
MFF	Multi-tranche Financing Facility
MEPA	Ministry of Environmental Protection and Agriculture
MoRDI	Ministry of Regional Development & Infrastructure
SSEMP	Site-Specific Environmental Management Plan

1. INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Report (SAEMR) for the GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 5.
2. This report is the second Environmental Monitoring Report (EMR) of SUTIP/Tranche 5.

1.2 Headline Information

3. On 19 December 2017 - Sustainable Urban Transport Investment Program, Tranche 5 Loan agreement was signed between Georgia and Asian Development Bank. The Project Agreement was signed between ADB and Municipal Development Fund of Georgia (MDF), Tbilisi City Municipality (TCM) and Tbilisi Transport Company LLC (TTC). Under Tranche 5 ADB has agreed to lend to the Borrower from ADB's ordinary capital resources in an amount of twelve million Euros (€12 million).
4. The loan agreement was ratified by Parliament on 22 February 2018, upon which the government submitted the legal opinions showing that the Loan Agreement is legally binding upon the Borrower and that the Project Agreement is legally binding upon MDF, TCM and TTC.
5. Tranche 5 was approved on 7 December 2017 and declared effective on 8 March 2018. Tranche 5 is scheduled for completion by 18 July 2020.
6. Sustainable Urban Transport Investment Program – Tranche 5 (SUTIP T5) will improve living conditions in urban areas, through improved urban transport infrastructure and services, and comprises one subproject: Tbilisi Metro Rehabilitation.
7. The project will have the following components and outputs:
 - Component 1: Urban Transport Infrastructure Improvement
 - Output 1: Replacement of power transmission cabling in Tbilisi Metro, including 191,000 meters of low voltage lines (220-380v); and 137,000 meters of medium voltage lines (6-10kV)
 - Output 2: Rehabilitation of ventilation system in Tbilisi Metro, including the installation of 32 ventilation fans replacing missing and worn out equipment.
 - Component 2: Institutional Effectiveness
 - Output 3: Consulting services for the development of a Waste Management Plan for the operation and maintenance of Tbilisi Metro.
 - Component 3: Project Management Facility
 - Output 4: Consulting services for (a) supervision of works, (b) financial audit, and (c) safeguards oversight and monitoring.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

8. The Sustainable Urban Transport Investment Program (SUTIP) is financed by ADB under a multi tranche financing facility (MFF), and is aimed at promoting a sustainable,

integrated, socially affordable and cost-efficient urban transport system in cities of Georgia, to energize the economy and improve the quality of life of citizens. Projects involve rehabilitation and repair of existing infrastructure, provision of new facilities and capacity building.

The following projects are financed under Tranche 5:

1.1. Tbilisi Metro Rehabilitation project

- 9.** Tbilisi Metro opened in 1966 and became the fourth Metro system in the former Soviet Union. The Tbilisi metro system currently consists of 2 lines totaling 27.1 km of double-track and 23 stations.
 - The first line “Akhmeteli–Varketili Line” was opened on 1966, it serves 16 stations over 20.1 km.
 - The second line, called “Saburtalo Line” was opened on 1979, it serves 6 stations over 7 km (its extension is still in progress).
- 10.** 21 of 23 stations are below ground and 2 are at surface level. Among the underground stations, 17 are at deep level and 4 shallow. The underground structure is composed by twin tunnels interconnected by cross passages, rail crossings and stations. Despite the continued efforts of TTC to keep maintenance activities on track, major concerns have been identified regarding the current condition of key components such as cabling, escalators, ventilation system and water drainage pumps of the metro system. Aside from the Metro systems having been worn out for decades of under maintenance, it also has inadequate accessibility, weakness in the multimodality transfer with other public transport modes in interchanges stations, and low energy efficiency as compared to similar modern metro systems in the world.
- 11.** The objective of the project is rehabilitation, replacement, and upgrading of Tbilisi Metro installations, particularly: (i) replacement of power transmission cabling in Tbilisi Metro, i.e. 191,000 meters of low voltage lines (220-380v), and 137,000 meters of medium voltage lines (6-10kV); and (ii) rehabilitation of ventilation system in Tbilisi Metro, including the installation of 32 ventilation fans replacing missing and worn out equipment.
- 12.** The project has been designed to address the main priorities of the Tbilisi Metro Upgrade investment plan. These priorities are the result of a multicriteria analysis considering safety, technical, social, economic, operational and environmental factors. The proposed project will address mainly safety, reliability and efficiency concerns. The cables installed in the metro system will be specified to be flame retardant and not generate dense, obscuring smoke and toxic or corrosive gases. In addition, estimated energy savings of 670,000 KW/hour per year will be achieved, while the probability of service disruption due to power deficiencies will be reduced. New ventilation fans will improve air flow in metro tunnels providing better air quality and regulating temperature, and will serve to clear smoke from tunnels in case of fire. Estimated energy savings of 305,000 KW/hour per year will be achieved.

1.2. Tbilisi Transport Company Waste Management Plan

- 13.** The purpose is to develop a Waste Management Plan for Tbilisi Transport Company (TTC). The preparation of a Waste Management Plan is a key in achieving sustainable waste management towards improved urban environment in Tbilisi. The primary purpose assignment is to provide an outline of waste streams and corresponding treatment options in the form of a waste management plan for the operation for all type of public transport under TTC, including Tbilisi Metro, buses and cable cars.
- 14.** The main objective of this assignment is to provide a framework for the following:
 - (i) Effective management of wastes during the operation of TTC;
 - (ii) Compliance with local and national waste policy and contribute in achieving local/national targets in waste management;

- (iii) Identification of waste characteristics, estimation of quantity, and provision of waste collection and treatment options that are adequate and sufficient for managing the identified waste streams;
- (iv) Development of a system for monitoring and reporting waste generation;
- (v) Identification of requirements to strengthen capacity of TTC and EAs in implementing the Waste Management Plan.

2.2 Project Contracts and Management

15. The Implementing Agencies for the Tbilisi Metro Rehabilitation project are the Municipal Development Fund of Georgia (MDF), the Tbilisi City Municipality (TCM) and the Tbilisi Transport Company LLC (TTC). MDF shall procure all items of expenditures to be financed out of the proceeds of the Loan in accordance with the provisions of the Loan Agreement. Coordination and approval of TCM will be requested for all strategic aspects of the project. Review and approval of the TTC will be sought for main technical decisions.
16. The works will be executed under the Procurement of Plant - Design, Supply, and Installation - Single-Stage: One-Envelope Bidding Procedure, to be procured under the ADB's International Competitive Bidding procedures. The construction period for the Contract will be 18 months.
17. The Tbilisi Metro Upgrade Study was prepared by French Consulting Company "Systra" under financing of the Cities Development Initiative for Asia (CDIA) in August 2017. The Study was financed by ADB. The Report includes top priority investments described in the study's investment plan. Technical specifications and bidding documents were prepared by Systra in January 2018. The draft bidding documents revised by MDF and reviewed by ADB.
18. Ministry of Environmental Protection and Agriculture of Georgia (MEPA). MEPA has the overall responsibility for protection of environment in Georgia. The Department of Permits of MEPA is responsible for reviewing EIAs and for issuance of the Environmental Permits. MEPA is the main state body pursuing state policy in the sphere of environment. Their functions for regulating economic or development activities with regard to environmental protection include:
 - Issuing permits for project development (Environmental Decision)
 - Setting emission limits and issuing surface water intake and discharge consents
 - Responding to incidents and complaint

Table 1: List of contracts under Tranche 5

Contract #	Sub-project Title	Employer	Contractor	Contract Signature date	Contract Final Date	Environmental Staff under T6 of SUTIP
Contract No: SUTIP5-IC-01-2018	Waste Management Specialist	MDF	Individual Consultant – Ms. Medea Chachkhiani	10-Dec-18	10-Jun-2019	Ms. Medea Chachkhiani Tel: +995 577 498 512 E-mail: medeachachkhiani@gmail.com
P42414-SUTIP-ICB-1.01Lot 1	Design, Supply and Installation of Cables and Accessory Equipment (Lot 1, 2)	MDF	JV: Dogus Insaat ve Ticaret A.S. (Turkey) and Elsitel Elektromekani k Insaat Proje Ticaret Ve Sanayi A.S.	21 Dec 2018	540 days from the effective days	

Contract #	Sub-project Title	Employer	Contractor	Contract Signature date	Contract Final Date	Environmental Staff under T6 of SUTIP
			(Turkey, JV Member) (Dogus-Elsitel JV)			
Contract #	SC for T5	Employer	Consultant	Contract Sign. date	Contract Final Date	
SUTIP5/C/QCBS/01-2017	Construction Management and Supervision of the Tbilisi Metro Rehabilitation	MDF	JV of ILF Beratende Ingenieure AG (Lead. Switzerland) and ILF Consulting Engineers Austria GMBH Branch in Georgia (JV Partner, Austria)	5 Oct 2018		Giorgi Gurgenzidze Giorgi.Gurgenzidze@ilf.com Dato Girgvliani

2.3 Project Activities During Current Reporting Period

- **Tbilisi Metro Rehabilitation project**

19. The purpose of the **Lot 1** Contract is the dismantling and recycling of the existing cables networks, design, supply, loading, transportation, unloading, installation and tests / Pre-Commissioning of new cable networks and accessory equipment for Tbilisi metro network. It includes Traction Power (TP), Medium Voltages (MV) and Low Voltage (LV) cable networks. Lot 1 covers the following cables networks and accessory equipment:

- The Low Voltage (LV) cable network mainly consisting in "lighting & auxiliary power" sub-network is dedicated to the power supply of the metro facilities such as stations, tunnel, ancillary buildings, depot equipment, etc.
- This sub-network consists of feeder cables, lighting & power substations (LPS), low voltage cabinets and backup power supplies.
- The Medium Voltage (MV) cable network mainly consists in of 6-10kV cables to be replaced.

20. The geographical scope and limits of Lot 1 covers the cable networks and accessory equipment of:

- All tunnels and underground station platforms of the first line "Akhmeteli-Varketili Line" or "Line 1"
- All tunnels and underground station platforms of the second line "Saburtalo Line" or "Line 2"
- The Medium Voltage connection between Tbilisi Metro and the City energy provider Network.
- The 825V positive Traction Power cable interface limits are all the connection between the rectifier panel and the motorised disconnectors switches DS installed along tracks as well as jumpers.

- e. The 825V negative Traction Power cable interface limits are all the connection between the rectifier panel and traction return. All equipotential bonding between connections of track rails along tunnel shall be replaced.

21. The Contractor has submitted and the Project Manager approved the designs for all the sections. Important submissions have been made for the review and approval of: i) cables and cable manufacturer, ii) lighting and emergency lighting panels, iii) cable fixing, support and earthing device manufacturer. The approval of the cables specifications and cable manufacturer is completed. Information on the lighting and emergency lighting panels is under review. Cable fixing, support and earthing device manufacturer is approved by the TTC and the Project Manager. Approval of the earthing strip configuration is still outstanding. Storage area has been allocated by the TTC subject to the handover to the Contractor.

22. The purpose of the **Lot 2** Contract is the dismantling of existing 28 ventilators and accessory equipment, design, supply, loading, transport, unloading, installation and tests / Pre-Commissioning of 32 new ventilators for Tbilisi metro network.

The Contractor prepared some internal management plans in line with Georgian Legislation requirements and the Projects Environmental Code of Practice and these were reviewed and approved internally through the Engineer and MDF - Project Management Plan has been submitted and approved.

- Quality Plan has been submitted and approved.

- Work Health and Safety Management Plan has been submitted and approved.

- Accelerated Program of Performance for the LOT2 could not be provided by the Contractor due to the reason related with the manufacturing period that could not be decreased. The Contractor stated that the completion is intended to be made on 30.05.2019 with the normal Program of Performance leaving safety margins for the contingencies as well.

- Environmental and Waste Management Plan is partially approved. Only outstanding item remains related to the ownership of waste materials, such as the medium voltage, low voltage and traction power cables with insulation and protection cover.

- The Contractor has provided the insurance policies as required.

- **Tbilisi Transport Company Waste Management Plan**

23. The MDF prepared the TOR and submitted it to the ADB on 30 June 2018 for no objection. The contract with individual consultant to prepare a Waste Management Plan for Tbilisi Transport Company was signed on December 10, 2018. Duration of the contract is six months, but it has been prolonged until September 2019. TTC has already submitted the WMP to the Ministry of Environmental Protection and Agriculture and it has been under review.

2.4 Description of Any Changes to Project Design

N/A

2.5 Description of Any Changes to Agreed Construction methods

N/A

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

N/A

4. RESULTS OF ENVIRONMENTAL MONITORING – N/A

5. FUNCTIONING OF THE SEMP

- 24.** The contractor has to follow the requirements enshrined in the Environmental Code of Practice (ECP), which is integral part of the contract signed between MDF and the contractor. The objective of the ECP preparation is to address less significant environmental impacts and all general construction related impacts of the proposed projects implementation. The ECPs prepared for Metro Rehabilitation Project covers the following issues: Waste Management; Fuels and Hazardous Goods Management; Waste Resource Management; Air Quality Management; Noise and Vibration Management; Road Transports and Road Traffic Management; Construction Camo Management; Community and Worker's Health and Safety.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

Not yet applicable.

6.2 Opportunities for Improvement

Not yet applicable.

7. SUMMARY AND RECOMMENDATIONS

7.1 Summary

- 25.** As presented in this report, Tranche-5 of this Investment Program is being implemented in compliance with the ADB Safeguards Policy Statement, 2009 and National Legislation.
- 26.** Necessary instructions have been given to the Contractor by MDF and TTC.

7.2 Recommendations

- 27.** The following activities are recommended for the next reporting period:
- Arranging site visits for the next reporting period.