# Non-Technical Executive Summary

Georgia: GrCF2 W2 E2 - Tbilisi Waste Treatment Project - Environmental and Social Assessment

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# 1. INTRODUCTION

The European Bank for Reconstruction and Development is considering providing financing to the Government of Georgia to invest in the construction of a waste treatment plant aiming at diverting waste sent to the sanitary landfill in Tbilisi.

Tbilservice Group Ltd. is responsible for solid waste management, street lighting, street cleaning and underpass maintenance services in Tbilisi. The Company intends to launch source separation of dry recyclables and biowaste in the city and needs to introduce post-sorting and additional waste treatment measures to enable both the recovery of recyclables and the diversion of waste from being landfilled.

The Project will help to set up the first waste treatment plant in Tbilisi, aiming at diverting waste sent to the sanitary landfill a mechanical-biological treatment ("MBT") plant. It is expected that the proposed Material Recovery Facility ("MRF") will enable Tbilisi to further sort and process dry recyclables that are going to be collected separately (i.e., metals, glass, plastic packaging, paper, and cardboard) and to prepare recyclables to be sold as secondary raw materials to companies. If feasible, the MBT plant will help to reduce waste quantities going to the landfill via biodegradation of mixed municipal waste and sorting out recyclables.

The main component of the project is the evaluation of technology for the construction of a mechanical and biological waste treatment plant (MBT).

The main goals for the realization of the project are:

- reduce waste quantities to the landfill by > 50% and extend the lifetime of the landfill to a maximum;
- significantly reduce emission potential (leachate and landfill gas) of waste to be disposed of;
- sort out recyclables to reach national recycling targets.

MBT consist of several processes:

- sorting and separation of waste;
- mechanical treatment;
- biological treatment (aerobic or anaerobic);
- waste disposal.

The expected effect from the implementation of this Project is that the organization of waste treatment and recycling in accordance with international standards and requirements will reduce the environmental load on the region's environment, increase the service life of the landfill and allow renewable waste not only to be buried but to be sorted and used in the future as raw materials. A modern drainage system will avoid the problem of the existing landfill with infiltration leaks and will also increase the level of production culture and protect both the employees of the enterprise itself and residents who suffer from the proximity to such an unsafe facility.

## 2. BACKGROUND

The current identified priority risks associated with:

1) The lack of separation of waste that can be reused as raw materials.
2) The lack of separation in city and residential areas leads to the fact that separation must be done directly at the landfill. In the absence of a modern sorting line, the process is carried out manually by people, which occurs under abnormal working conditions.
3) The facility also receives hazardous waste, which is temporarily stored and then transferred to certified companies for disposal; at the same time, the Company employees also expose themselves to health risks.
4) At the moment, at the existing landfill, there is a risk of soil and groundwater contamination due to a non-functioning drainage system and a non-functioning infiltration water treatment plant. Residents have repeatedly complained and contacted the local media about the problem of unpleasant odour and wind-blown waste from the landfill.
5) There is also a constant risk of fire at the landfill, when waste burns, hazardous substances can be released into the air, which is also dangerous for both the landfill workers themselves and residents. The impact may be long-lasting due to the problematic firefighting process at the landfill. And given the limited access to water locally, this can also pose a global threat.
6) Lack of implementation of integrative OHSSE system does not have possible operation in a future Project because at this moment Company does not have risk evaluation and so there are no lessons learned or analysis of root causes for waste management following international standards.

The main social risks are:

- Influence from operation of the current landfill on H&S of workers and neighbour residences.
- Working conditions of handling sorting waste including hazardous wastes.
- Social standards (ref. PR10) are not fully implemented and integrated into processes and are not reflected in documentation.

## 3. PROJECT INFORMATION

The Project will help set up the first-ever waste treatment plant in Tbilisi, aiming to divert waste sent to the sanitary landfill and potential mechanical-biological treatment plant. It is expected that the proposed MRF will enable Tbilisi to further sort and process dry recyclables that are going to be collected separately (i.e., metals, glass, plastic packaging, paper, and cardboard) and to prepare recyclables to be sold as secondary raw materials to companies. If feasible, an MBT plant will help to reduce waste quantities going to the landfill via biodegradation of mixed municipal waste and sorting out recyclables.

The project included an assessment of the following components:

- MSW Polygon;
- CWV disposal site;
- Transfer station;

And

- technical evaluation of three scenarios of technology for the proposed MBT plant;
- present OHSSE management system which is present in operating enterprise.

Currently, the Company has conducted EIA for the previous stage of the Project and implementing an assessment report from technical consultancy on future activities.

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

P-positive impact; N-negative impact

| Environmental factors | Impacts description | P | N | Impact mitigation measures |
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| Land use planning and changes | All work will be carried out within the boundaries of existing networks and structures, and additional areas will not be used. | P | | Soil excavation must be carried out with minimal losses, and after completion of the work, the soil must be returned. |
| Climate | The main impact on the climate is emissions from construction machinery and equipment delivery trucks. The impact will be short-term and insignificant. | | N | Use only properly functioning construction machinery that is subject to regular technical inspections. |
| Climate | Indirect positive impact. The installed equipment will lead to a decrease in electricity consumption, which, in turn, will decrease the load on the energy system and decrease air emissions (including greenhouse gases) from energy companies. New drainage system and covering system of polygon take possibility working without odour. | P | | |
| Water resources | There is no impact because there is not any contact with surface or underground water. | P | | |
| Nature conservation | There is no any impact | P | | |
| Impact on air | During construction work, there will be increased air pollution from freight transport and dust on the roads and adjacent areas. | | N | • Dust reduction on surrounding roads and the construction site (e. g. by watering roads).<br>• Use only properly functioning construction machinery that is subject to regular technical inspections.<br>• Compliance with the schedule of construction works to meet the terms of construction.<br>• Speed limits for construction machinery while moving the village roads and within the construction site.<br>• Cover raw material with tarpaulin during transportation and in the site storage area. |

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| Traffic, noise, and vibration | Increase in noise pollution from machinery and trucks during repair work | | N | • Comply with schedules of working time during noise works on the construction site.<br>• Limitations of works performed and materials delivery by the daytime.<br>• Choose construction equipment and trucks with low noise emissions.<br>• Use only properly functioning construction machinery that is subject to regular technical inspections. |
| Waste management | Increased amount of waste during construction work. | | N | • Develop a waste management plan for the construction works.<br>• Use a separate waste collection practice.<br>• Designate a specially organized place with hard ground for construction waste storage or use trays.<br>• To conclude, agreements with specialized enterprises of waste processing/disposal/placement. |
| Road safety | During the construction, the traffic on the road adjacent to the landfill will be increased. This will entail an increase in noise and dust levels on the territory due to the intensive use of roads. The risk of accidents will increase, too. Though, these impacts will be short-term. | | N | • Develop traffic plan and provide additional safety instructions for staff.<br>• Coordinate and cooperate with road services in case there is a need to implement additional road safety measures.<br>• Inform community on possible traffic impacts during the Project construction. |
| Associated infrastructure impacts | Installing new equipment will be based on the contractor`s regime and workflow. | | N | • Develop and agree on a plan for equipment installation.<br>• Effectively organize construction work and tightly control construction plans and simultaneous work of contractors. |
| Cumulative impacts | New technology will bring positive environmental and social effect and will lead to establishing work according to international standards. | P | | |
| Induced (indirectly consequential) impacts | Modern technology will make it possible to work without odours, leakages, and other negative impacts comparing to the current state of landfill. | | N | • Assess the risks associated with construction and develop measures to reduce these risks.<br>• Develop a detailed plan to manage these risks. Coordinate all inconveniences with the public.<br>• Develop a project Environmental Impact Assessment (EIA) during the construction and operation of future equipment. |

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| | | | | • Ensure that a general contractor develop and follow a construction management plan in accordance with international requirements,<br>• Develop a stakeholder engagement plan. |
| Occupational health and safety issues including explosives safety | Risk of emergencies and accidents during repair and construction work. | | N | • Adhere strictly to the OHS legislation at the construction site.<br>• Develop and implement the construction management plan, including the OHS plan for the construction stage.<br>• Control the supply of PPE, its availability, and proper use.<br>• Training on OHS for all workers, including training on risks and hazards associated with their work.<br>• Supervision over contractor`s compliance with the rules indicated in OHS plan, including regular reporting.<br>• Maintenance of the incident statistics registry (preconditions for incidents, injuries, emergencies, etc., including the total number of contractors working hours).<br>• Compliance of working conditions and labour standards with national requirements and EBRD PR 2. |
| Impact on community health and safety | Increase in noise and odour pollution and dust during repair work at the present polygon and dust and noise pollution during equipment installation and construction work. The increased traffic will entail an increased risk of accidents. | | N | • Develop and implement the traffic management plan, including consideration of delivery routes, other road users (vehicles and pedestrians), speed limits at and outside the site, and warning signs.<br>• Minimize dust generation on roads by watering.<br>• Comply with working time schedules during construction works. |
| Consistency with policy, law, and other plans | The Project is consistent with national legislation, though it is recommended to apply international standards following EBRD PRs, ESP, QHSE management system. | P | | |

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

| Social factors | Impacts description | P | N | Impact mitigation measures |
|---|---|---|---|---|
| Socio-economic impacts; including gender and management measures (considering gender specificities and needs) | During the implementation of the Project there will be equal employment opportunities for both men and women. New workplaces will be created before and during the Project. | P | | |
| Impacts on businesses and employment | Local residents will be involved during construction and repair work. Employment of the local population will help temporarily displaced residents solve their social problems. | P | | |
| Impacts to existing infrastructure and public services | Impact on a traffic of surrounding of residence and people.<br>Many construction workers living in working area region. It`s additional benefits for neighbouring business for providing a rent and attract money to their businesses. | P | N | Make a risk assessment of repair work and inform stakeholders to develop a safe road plan and agree on alternative routes. During work, provide proper fencing and lighting to open pits, reduce road closures to a minimum time, and monitor contractors for compliance with labour protection and safety. |
| Local traffic and access impacts | Changing transport routes will create additional difficulties for residents and public life, complicating the ability to get to work and for children to go to school. | | N | Make a risk assessment of traffic increase during construction. Provide proper fencing and lighting to open pits, reduce road closures to a minimum time, and monitor contractors for compliance with labour protection and safety. |
| Land acquisition and resettlement (cross-reference any resettlement report that is being developed) | n/a<br>The Project will be implemented within the designated areas of the existing enterprise. | | | |
| Contractor management, including the siting and management of worker camps, | The placement of construction camps will increase the need for their maintenance, additional territories for their placement, organization of municipal waste collection, organization of water consumption and sanitation, and supply of drinking water and food. | | N | During the signing of contracts, all factors of contractor control, responsibility for the organization of their work, and accommodation will have to be considered and included. |
| Community impacts (confirm that no Roma are known to utilise the land and/or corridor route) | n/a | | | |
| Local employment and Procurement Impacts | Contracting organizations can hire local organizations for subcontracting, thereby giving | P | | |

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| | work to many companies and local businesses, employing the local population. | | | |
| Impacts on the local economy | The Project will increase tax payments to the local budget. | P | | |
| Labour issues and standards | The Project does not require an additional workforce except for the construction phase. Involving construction workers will positively impact the local population. | P | | |
| Public road safety; including health and safety mitigation in the design | During the construction, the traffic on the road adjacent to the landfill will be increased. This will entail an increase in noise and dust levels on the territory due to the intensive use of roads. The risk of accidents will increase, too. Though, these impacts will be short-term. | | N | • Develop and implement the traffic management plan, including consideration of delivery routes, other road users (vehicles and pedestrians), speed limits at and outside the site, and warning signs.<br>• Minimize dust generation on roads by watering.<br>• Comply with working time schedules during construction works. |
| Social management plans, mitigation measures and compensatory measures | Direct positive impact. A complete Project implementation of both short and long-term investments will largely have positive side effects to workers condition if and only if active measures are taken. Otherwise, the waste utility will continue along already set organizational culture that does not fully use the potential of workers or ensure their rights.<br>The Project may have positive effects on salaries and benefits for the staff employed at the facility. | P | | |
| Cultural heritage, impacts and management measures | No impacts are expected. | | | |

## 6. MONITORING OF IMPACTS

Environmental monitoring aims to check the implementation and effectiveness of mitigation measures. The following table contains the measures to mitigate E&S impacts during the Project construction phase.

**Impact during construction works**

| Environmental and social factors | Impact minimization measures | Monitoring and control of impact mitigation | Frequency of monitoring |
|---|---|---|---|
| Impact on climate and climate change | ○ Use only properly functioning construction machinery that is subject to regular technical inspections. | ○ Checking the presence of documents confirming the regular technical inspection of construction machinery and vehicles.<br>○ Regular visual checks of bulk materials storage practices and road watering.<br>○ Control of construction works schedules. | ○ Technical vehicles inspection – following the legislation requirements.<br>○ Materials storage and road watering – on an ongoing basis, once a week during the entire construction period, or upon receipt of complaints from local inhabitants.<br>○ Work schedule – daily. |
| Impact on air | ○ Dust reduction on surrounding roads and the construction site (e. g. by watering roads).<br>○ Use only properly functioning construction machinery that is subject to regular technical inspections.<br>○ Compliance with the schedule of construction works to meet the terms of construction.<br>○ Speed limits for construction machinery while moving the village roads and within the construction site.<br>○ Cover raw material with tarpaulin during transportation and in the site storage area. | | |
| Environmental noise | ○ Comply with schedules of working time during noise works at the construction site.<br>○ Limitations of works performed and materials delivery by the daytime.<br>○ Choose construction equipment and trucks with low noise emissions.<br>○ Use only properly functioning construction machinery that is subject to regular technical inspections. | ○ Control of construction work schedules to prevent the works at night hours.<br>○ Checking the presence of documents confirming the regular technical inspection of construction machinery and vehicles. | ○ Technical vehicles inspection – in accordance with the legislation requirements.<br>○ Work schedule – daily. |

| Environmental and social factors | Impact minimization measures | Monitoring and control of impact mitigation | Frequency of monitoring |
|---|---|---|---|
| Waste management | ○ Develop a waste management plan for the construction works.<br>○ Use a separate waste collection practice.<br>○ Designate a specially organized place with hard ground for construction waste storage or use trays.<br>○ To conclude agreements with specialized enterprises for waste processing/disposal/placement. | ○ Regular inspections of waste management plan implementation.<br>○ Regular inspections of places of temporary storage of waste at the construction site.<br>○ Keeping records on the transfer of waste to specialized enterprises. | ○ Checks regularly (monthly) during the entire period of construction. |
| Impact on workers occupational health and safety | ○ Adhere strictly to the OHS legislation at the construction site.<br>○ Develop and implement the construction management plan, including the OHS plan for the construction stage.<br>○ Control the supply of personal protective equipment (PPE), its availability, and proper use.<br>○ Training on OHS for all workers, including training on risks and hazards associated with their particular work.<br>○ Supervision over compliance by the contractor with the rules of the OHS plan, including reporting.<br>○ Maintenance of the incident statistics registry (preconditions for incidents, injuries, emergencies, etc., including the total number of hours contractors work).<br>○ Compliance of working conditions and labour standards with national requirements and EBRD Performance Requirement 2. | ○ Verifying the existence of the construction management plan, including the OHS plan and traffic management plan.<br>○ Constant control of using personal protective equipment.<br>○ Inspection of working conditions of construction workers.<br>○ Verification of the existence of reports on conducted training.<br>○ Inspection of keeping registers of incidents.<br>○ Supervision over compliance by the contractor with the rules of the OHS plan, including reporting. | ○ On a daily basis during the entire period of construction. |
| Impact on community health and safety | ○ Develop and implement the traffic management plan, including consideration of delivery routes, other road users (vehicles and pedestrians), speed limits at and outside the site, and warning signs. | ○ Verification of the existence of constant control of performing traffic management plan. | ○ Regularly during the entire period of construction. |

| Environmental and social factors | Impact minimization measures | Monitoring and control of impact mitigation | Frequency of monitoring |
|---|---|---|---|
| | ○ Minimize dust generation on roads by watering.<br>○ Comply with working time schedules during construction works. | ○ Control of work time schedules during construction works.<br>○ Control of measures to prevent dust generation. | |
| Impact on social and economic conditions | ○ Where possible, engage local workers and suppliers in the construction phase and further operation.<br>○ Inform the parties concerned about temporary inconveniences related to construction works. | ○ Control of informing the public, if and when necessary. | ○ Before construction works start and regularly (as needed). |