Luxembourg, 21st July 2015

Environmental and Social Data Sheet

Overview

Project Name:	Yerevan solid waste project
Project Number:	2015 0017
Country:	Armenia
Project Description:	The project comprises the construction of a sanitary landfill in Yerevan, the capital city of Armenia, closure of the existing landfill and implementation of components aimed at diversion of waste from the landfill.

EIA required: yes

Project included in Carbon Footprint Exercise[1]: yes

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

The project will improve the municipal solid waste management system in Yerevan, the capital of Armenia, through the construction of the first two cells and supporting infrastructure of a new sanitary landfill that will serve the city of Yerevan with a population of ca. 1,100,000 inhabitants and surrounding four regions with a population of ca. 770,000.

As required in the Armenian Law on Environmental Impact Assessment and Expertise, adopted on 21.06.2014, an Environmental and Social Impact Assessment (ESIA) has been carried out for the new landfill and for closure of the old landfill.

According to the available EIA documentation, the project is expected to bring an overall positive impact on environment, public health and climate by minimising the adverse impacts from waste disposal in the current unsanitary landfill that will be closed and rehabilitated once the new landfill becomes operational. A landfill gas capture system implemented at the existing landfill to collect the accumulating landfill gas will be expanded and optimised to reduce the emissions of landfill gas, which is a powerful greenhouse gas. If justified, the collected landfill gas, which now is flared, will be used to generate electricity.

Today there is no formal separate collection of recyclable materials in Yerevan and informal recycling is limited. The project will therefore support developments of systems and facilities that will introduce formal recycling, thereby increasing the life of the landfill and improve resource efficiency.

The landfill construction works may result in limited, localised, short-term adverse environmental impacts that can be mitigated by adhering to good practices.

Potential adverse environmental impacts during the operation phase comprise primarily soil and water pollution, greenhouse gas emissions and management of mineral resources, which will be mitigated through appropriate design and operational procedures.

In terms of the key expected adverse social impact, the closure of the existing landfill will affect persons involved in the informal collection of secondary materials on the existing landfill site. To mitigate any negative impacts on their livelihoods, a livelihood restoration plan will

[1] Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO2e/year absolute (gross) or 20,000 tons CO2e/year relative (net) – both increases and savings.

therefore be developed and implemented. The project is not expected to result in any physical resettlement.

The project will be co-financed with the European Bank for Reconstruction and Development (EBRD) and the individual schemes will comply with the EBRD's Performance Requirements as well as the EIB Environmental and Social Standards.

The promoters' capacity to manage the project implementation and subsequent operation as well as to effectively implement environmental and social management plans and other agreed mitigation measures will be strengthened by EBRD Technical Assistance.

The Borrower shall not commit any EIB funds against waste diversion schemes that require an EIA or biodiversity assessment according to national law or the EU EIA Directive without, prior to commitment, receiving the consent from the competent authority, and the Non-Technical Summary of the EIA having been made available to the public.

For project components for which the competent authority does not require an EIA, the Bank shall receive a copy of the decision by the competent authority indicating the basis for it, as well as evidence of public disclosure of this decision.

The Borrower shall ensure that the promoter implements, to the satisfaction of the Bank, the environmental and social management plan, the livelihood restoration plan and the stakeholder engagement plan.

The project is acceptable for Bank financing.

Environmental and Social Assessment

Environmental Assessment

The project, if located inside the EU, would fall under Annex II of the EU Environmental Impact Assessment (EIA) Directive (2011/92/EC). According to the Republic of Armenia Law on Environmental Impact Assessment and Expertise, adopted on 21.06.2014, Article 14 states that landfills or waste processing in areas with more than 20 000 inhabitants it is mandatory to carry out an ESIA. The examination is carried out in two stages, a first preliminary examination, and a detailed examination of the final documents which will be carried out after submission of the final ESIA.

An environmental and social impact assessment (ESIA) that covers both the new landfill and the closure of the existing landfill has been carried out by consultants funded by the EBRD. The study identified the following potential impacts and mitigating measures.

Impact on flora and fauna: The site for construction of the new landfill involves mostly dry herbal grasslands. In order to improve the amenity of the area during the operation phase an alley of trees is foreseen to be planted to shield the landfill site. The impact on flora and fauna from clearance of the area is expected to be insignificant. Nevertheless, both compensation and mitigation measures will be taken for flora and a guiding system will be established for reptiles.

Landscape impact: The existing landfill will be closed and the area rehabilitated in a way so that it can be integrated within the existing landscape, and the cover will be vegetated.

The closest specially protected nature area (Erebouni Reserve) is located 6-7 km from the site and will not be affected by the project.

Noise and vibration: The noise and vibration from waste trucks on the access road, in particular from old and poorly maintained trucks, has been identified as one of the key anticipated impacts. To mitigate this, workers will be equipped with ear protection and other adequate gear. The situation is expected to improve when the two newly contracted collection contractors in Yerevan have started their operations with improved trucks. Landfill equipment with low noise output will minimise noise impact during operation.

Accidents: The risk of accidents between waste trucks and pedestrians along the Nubarashen road is considered to be high due to poorly maintained vehicles, excessive speed and dangerous curves. Speed bumps and the installation of street lights is foreseen to reduce the risk of accidents.

Air quality: High levels of air pollution are already present in the Yerevan region. Waste disposed on the existing landfill often catches fire due to the generation and emissions of landfill gas, and windblown litter is transported around the site. Closure and rehabilitation of the existing landfill will eliminate these nuisances through the application of a proper cover and expansion and optimisation of the existing landfill gas collection system. Mitigation of adverse impacts during the construction period will be achieved through sprinkling of water on roads, tyre washing and covering the loads of trucks.

Water and groundwater quality: The existing landfill has given rise to leachate discharges in the valley downstream of the existing landfill. Contaminated soils along the existing leachate streams are foreseen to be excavated and removed from the site. The new landfill will be equipped with a low permeability bottom lining system and leachate collection system to minimise the discharge of leachate. The existing landfill will be provided with a top cover that after vegetation will reduce the infiltration of precipitation. A leachate collection trench will be constructed downstream of the existing landfill to collect the diminishing amounts of leachate generated in the existing landfill.

EIB Carbon Footprint Exercise

The estimated annual absolute (gross) greenhouse gas emission from the new landfill, which will be equipped with a landfill gas collection system with energy recovery, receiving 400kt/yr of waste in a standard year of operation has been calculated at 87 kt/yr CO2e/yr. Estimated emissions savings are 140kt/yr CO2e/yr). In the baseline calculations, it has been considered that part of the existing landfill is equipped with a landfill gas collection system with flaring of the collected gas.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Social Assessment, where applicable

There are informal waste pickers that retrieve recyclable materials from the waste disposed on the existing landfill. Closure of this landfill and introduction of state of the art operational methods on the new landfill will impact the waste pickers and their families, in total ca. 200 people, that can no longer continue with their current activities on the landfill. A livelihood restoration plan will be prepared for the waste pickers that likely will involve employment in the new waste operations resulting from this project.

Public Consultation and Stakeholder Engagement, where required

A public consultation meeting was held on 28th October 2014, in which the project was presented to the stakeholders, questions were responded to, and their concerns included and addressed in the ESIA. A summary of the meeting was made public by the Department for Information and Public Relations of the Municipality of Yerevan. A Stakeholder Engagement Plan prepared by the ESIA consultants, outlines further public consultation steps and measures, including a disclosure plan and grievance mechanism. The ESIA will be available for the public at least 120 days in the neighbouring districts Nubarashen and Erebuni and during the duration of the project implementation. The ESIA will also be published on the EIB and EBRD web sites.

Other Environmental and Social Aspects

The promoters' capacity to manage the project implementation and subsequent operation as well as to effectively implement environmental and social management plans and other agreed mitigation measures is in general believed to be acceptable, but will nevertheless be strengthened by EBRD Technical Assistance.