GEORGIA URBAN ENERGY LTD

PARAVANI HYDROPOWER PROJECT

ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT REPORT
ENVIRONMENTAL AND SOCIAL ACTION PLAN

Prepared by SRF Gamma

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1. INTRODUCTION

Georgia Urban Energy (GUE) Ltd. has been assigned as the privileged investor for construction of the Paravani HPP and related transmission infrastructure in the framework of the agreement signed between the Georgian Government and the company. The project is being implemented in two stages:

- Construction of a hydropower plant (HPP) involving a weir on the Paravani River about 13 kilometres upstream of the confluence with the Mktvari River and a powerhouse on the right (south) bank of the Mtkvari River about 1.5 km upstream of the confluence. This part of the project is being implemented in two municipalities - Akhalkalaki (intake facilities) and Aspindza (hydropower station and substation) – in Georgia's Samtskhe-Javakheti region;
- Construction of a 32-kilometer transmission line connecting the HPP to the power distribution system at a new substation near Agara that will be constructed as part of another project. This part of the project is also is being implemented in two municipalities in the Samtskhe-Javakheti region: Aspindza (HPP site/substation and start of the transmission line) and Akhaltiskhe (end of transmission line).

As required by Georgian law, GUE evaluated the project's potential impacts on environmental and social aspects in Environmental and Social Impact Assessments, one for the hydropower plant and one for the transmission line. These ESIAs, together with a consideration of cumulative impacts, this report, and a Stakeholder Engagement Plan were also designed to meet the requirements of the European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC), each of which will provide financing for the project.

Before and during construction, and then throughout operation of the project, GUE will need to implement a series of actions to avoid, reduce, or otherwise control potential impacts identified in the ESIAs. These actions are summarized in this Environmental and Social Action Plan (ESAP). The ESAP will be part of the financing agreements between the lenders and GUE. The performance of the required actions will be reported annually by GUE and may be audited or otherwise evaluated by the lenders throughout construction and operation of the project.

The table below constitutes the ESAP. It identifies the required actions, the basis of the requirement, the timing of the action, and the criteria to be used for determining whether the required action has been successfully achieved. Implementation all of the actions is the responsibility of GUE. When other companies perform work under contract to GUE, GUE will be responsible for those contractors' compliance with the requirements of the ESAP. This is expected to be accomplished by inclusion of requirements in contracts and subcontracts, and by direct oversight and supervision by GUE as needed.

As agreed by the parties, this ESAP may be revised from time to time during project development. No changes will allow violations of Georgia law or of EBRD and IFC requirements for environmental and social performance.

Environmental and Social Action Plan Paravani Hydropower Project				
No.	*Issue/Action*	*Source of Requirement*	*Date to be complete*	*Measure of success*
0	Submit report on environmental, social, health and safety performance, including status of each ESAP element	EBRD, IFC	Each six months during construction, annually thereafter	Submission of performance report
1. Environmental and Social Planning				
1.1	Develop and implement an Environmental and Social Management System (ESMS)	EBRD PR 1 IFC PS 1	Develop key construction procedures (e.g. OHS, blasting, traffic management, waste management, monitoring, community liaison) prior to construction. Develop operations phase procedures prior to the start of operations.	- Development of construction management procedures - Development of an operational ESMS
1.2	Ensure that there is a qualified on-site Occupational Health and Safety representative at all times, with independent reporting lines to corporate management	EBRD PR 2 IFC PS 2	Throughout construction and operations	Construction OHS representative already appointed GUE to identify operations phase OHS representative prior to operations starting
1.3	Appoint a qualified Environmental manager to report directly to site manager, with independent reporting lines to corporate management	EBRD PR 1 IFC PS 1	Prior to construction	Designated person throughout construction and operation
1.4	Require all on-site contractors to retain qualified environmental and OHS managers for all activities for which they are responsible	EBRD ESP	Prior to contractor activities	Appropriate clauses in contracts Appointment of qualified personnel
1.5	Develop a waste management plan to guide management of all wastes to be generated during construction and operation	EBRD ESP EBRD PR 3	2011 (prior to initial EHS report)	Waste management in accordance with Georgia law and plan Annual data on waste generation and management

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No.	*Issue/Action*	*Source of Requirement*	*Date to be complete*	*Measure of success*
1.6	Appoint an independent EHS Consultancy to undertake periodic external monitoring of key EHS issues as outlined in this ESAP and the ESIA documentation.	EBRD PR 1 IFC PS 1	Appoint: prior to first disbursement Monitor: every 6 months during construction and annually for the first 2 years of operations; any additional monitoring requirements to be based on monitoring outcomes	External EHS monitoring reports
2. Labour and working conditions				
2.1	Develop/update HR Policy and Procedures/ Manual in English and Georgian to fully comply with national law and EBRD and IFC requirements (Georgian Law to take precedence if there are any conflicts with lender requirements).	Georgia labour law EBRD PR 2 IFC PS 2	Within 3 months after commitment of funds.	- Submission of HR Policy and Procedures to the representative of the lenders for review - Include in annual EHS report data on workers, including dismissals and new hires, collective bargaining developments, status of medical checks, etc.
2.2	Make the policy and procedures/manual (2.1 above) or a detailed summary available to employees in their languages			Availability of materials for workers in their languages
2.3	Develop and implement an occupational health and safety (OHS) plan to guide all activities on the project site(s) during all phases of activities. Requirements to include (but not be limited to): - Job- and task-specific hazard analysis and controls for GUE activities - PPE provided, use of PPE required, and enforced - Safety training for all personnel in their language - Review of contractors OHS plans, to meet same standards as GUE plan - Oversight of contractor OHS implementation, including mandatory reporting	BAT EBRD PR 2 IFC PS 2	GUE plan: prior to first disbursement Contractor plan: prior to contractor activities on-site	- Submission of GUE plan by independent OHS professional to lenders for review and approval.. Submission of contractor OHS plan(s) and approval by GUE OHS manager - Annual report on OHS issues, including accident statistics and training (by GUE and contractor workforces)

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2.4	On annual basis, review and update OHS plan as needed, and require contractor updates	BAT	Annually	- Updated OHS plan as needed - Annual report
2.5	Develop a formal grievance mechanism for employees and contractors and disseminate information about its uses to the workforce (in the language of the worker)	EBRD PR 2	Prior to first disbursement	- Submission (with first EHS report under item 0) for review and approval by lenders of grievance procedure - Annual report to include information on worker grievances.
2.6	Develop and implement a contractor management plan and procedures to ensure contractors' compliance with lender and Georgian labour requirements	EBRD PR 2 IFC PS 2	Throughout construction and operation	Contractor compliance
2.7	Develop and maintain construction camps that are appropriate for their locations and that meet the requirements of Georgian law and EBRD PR2	Georgia law EBRD PR 2	At all times construction camps are occupied	- Compliance - Annual reports of incidence
3. Pollution prevention and abatement				
3.1	Develop and implement erosion control plan to cover all site operations (may be developed by contractor(s), but must be reviewed and approved by GUE and implemented by all contractors). Review and revise as needed	EBRD PR 3 IFC PS 3 Best practice	Plan: prior to construction Implement: throughout construction and operation	Approval by EHS manager
3.2	Isolate fuel storage tank away from traffic	EBRD PR 3 IFC PS 3 Best practice	Prior to first disbursement and throughout construction	Placement of tank(s) away from traffic in isolated area
3.3	Provide impermeable containment sufficient to hold at least the total volume of fuel stored in tanks			Containment of all spills at fueling and storage areas
3.4	Conduct fueling operations and use chemicals/solvents only over prepared impermeable surfaces		As long as fuel and other chemicals/solvents are stored and used on-site	No off-site fueling or oil/chemical handling
3.5	Prepare for cleanup of small spills (fuel, etc.), including (but not limited to): - Cleanup kits (absorbent materials, etc.) carried in all vehicles and equipment at all times - Training for drivers and equipment operators, and others who use fuel, oil, other hazardous materials - Inspect all vehicles and equipment for leaks before use near or in water	EBRD PR 3 IFC PS 3 Best practice	Prior to construction	- Provision of cleanup kits - Training records for drivers and operators - Immediate cleanup of all spills with no residual contamination

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3.6	Store tunneling and other spoil only in prepared designated areas approved by authorities and protected from erosion (to be specified in erosion control plan)	EBRD PR 3 IFC PS 3 Best practice	Prior to spoil generation	- 100% of topsoil salvaged and stored in contained piles/locations - Maximum beneficial use of spoil - Annual report on spoil use and storage
3.7	To the maximum extent possible, use or allow others to use spoil			
3.8	For spoil that cannot be used at all or for some extended period of time, provide other permanent erosion control protection (to be specified in erosion control plan)		For all spoil piles not being used within a 30-day period	
3.9	Maintain vehicles, motors and emergency generators to manufacturers' specifications to minimize emissions	EBRD PR 3 Best practice	Throughout construction	
3.10	Control dust emissions in dry periods by using water or other dust suppression devices			
3.11	Implement monitoring program in the tailrace of the turbines after the power house and up to the Mktvari River as required by Georgian authorities	EBRD PR 3 IFC PS 3 Best practice	As required by permit	Annual monitoring report
3.12	Contain all sanitary wastes from all sites, provide appropriate treatment prior to permitted discharge		Throughout construction and operation	Annual report
4. Community Health and Safety				
4.1	Develop and implement procedures to protect public health and safety, to include (but not be limited to): - Traffic management plan for all drivers and equipment operators (speed limits, training, etc.) - Public notice of blasting operations near areas open to the public - Security to prevent unauthorized access to project sites, with appropriate training for guards. - Notice to local authorities and nearby residents during construction of transmission line and then during operations - Hazard signs/ notices on power pylons/poles	EBRD PR 4 Best practice	Prior to the commencement of major construction works Throughout construction and maintenance operations	- Submission of traffic plan to EBRD with first EHS report, after commitment of funds - Annual report on traffic management, security, other activities, including any incidents
4.2	Establish and enforce appropriate rules to control behavior of workers who live in construction camps to avoid disruption of communities	Georgia law EBRD PR 2 IFC PS 2	Establish: before occupation of camp Enforce: throughout construction	- Annual report on rules and enforcement actions

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4.3	Maximize hiring of local workers and managers, to the extent labour with required expertise and qualifications are available	EBRD PR 2	During construction and operation	- Inclusion in EHS report data on numbers of local, Georgian, and foreign workers and management
5. Land acquisition and compensation				
5.1	Complete, disclose and implement "the land acquisition and compensation plan" agreed upon by the lenders, in accordance with Georgian, EBRD and IFC requirements	Georgia law EBRD PR 5 IFC PS 5	Disclose at least 60 days prior to construction of the transmission line	- Acquisition of rights to all land needed, by buying the land for the towers and right of way for the footprint of conductors. - Full compliance with Georgia law - Inclusion in EHS reports to EBRD the status of land acquisition and compensation
6. Biodiversity and natural resources conservation				
6.1	Develop and implement a downstream flow monitoring programme to ensure minimum biological flow is maintained downstream of the Paravani Weir	Georgia permits EBRD PR 6 IFC PS 6 Recovery plan (item 6.4)	Develop: prior to dam/weir closure Implement: after dam/weir closure	- Maintain minimum flow rates - Include in annual reports data on flow rates
6.2	Prepare a detailed baseline for fish and aquatic habitat and water quality in the Paravani River from the upstream end of the reservoir to the convergence point with Mtkvari River.	EBRD PR 6 IFC PS 6 Best practice Also part of potential cumulative impact mitigation	Prepare prior to first disbursement Implement prior to any in-stream work, including construction of weir	- Submission of monitoring plan to lenders - Summary report on baseline fish populations and aquatic ecosystem
6.3	Prepare and implement a robust multi-taxa aquatic monitoring programme to measure changes attributable to the project in fish and other aquatic life and water quality in the Paravani, from at the upstream end of the reservoir to the convergence point with Mtkvari River		Plan: prior to plant commissioning Implement: as required by plan throughout construction and 2 years of operations	- Submission of monitoring programme to lenders e - Annual report on fish populations and ecosystem health, including changes from previous monitoring results

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6.4	If fish populations decline or ecosystem health decreases significantly downstream of the Paravani weir up to the convergence point with Mtkvari River, due to reasons attributable to the project, develop -via an adaptive management approach - potential mitigation and offset measures, including any needed changes in project operations		If monitoring results show adverse downstream changes	- Development and implementation of a recovery plan - Recovery of fish populations and ecosystem health
6.5	Commission a review of fish passage design to ensure it will allow sufficient upstream & downstream fish movement at all times with minimum risk of mortality	EBRD PR 6 IFC PS 6 Best practice	Prior to first disbursement	- Construction of fish passage adequate to allow upstream and downstream movement by fish
6.6	Avoid weir construction and other in-stream work during fish spawning periods		Throughout in-stream construction	- No adverse effect on fish spawning
6.7	Do not use herbicides to control vegetation on transmission line corridor	Best practice	Throughout operation	- Manual control of vegetation
6.8	Salvage and store topsoil prior to disturbing new land	Best practice	Before disturbing new land	- No loss of topsoil
6.9	Monitor bird mortality along transmission line corridor. In case of excessive mortality, develop and implement bird protection plan)	EBRD PR 6 IFC PS 6 Best practice	First two years of operation: once during each year's spring and fall migration season Thereafter: during routine maintenance	Include monitoring and bird mortality data in annual reports.
7. Cultural heritage				
7.1	Develop and implement a chance find procedure and ensure foremen and others are trained in its use	EBRD PR8 IFC PS 8	Prior to disturbance of new land	Submission for review to lenders
8. Disclosure and stakeholder engagement				
8.1	Implement the agreed SEP, including regular (at a minimum annual) feedback to local stakeholders on the implementation of agreed environmental and social mitigation measures related to impacts that could affect them. Keep records of any grievances raised and associated responses provided.	EBRD PR 10 IFC PS 1	Throughout construction and operation	Submission of annual report on stakeholder engagement and resolution of grievances to lenders.