Draft Environment and Social Compliance Audit – Part 1

Project Number: 47919
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GEO: Adjaristsqali Hydropower Project

Prepared by Mott MacDonald for Adjaristsqali Georgia LLC

Environmental & Social Compliance Report

Ajaristsqali Georgia HEPP

Prepared By: AGL LLC & Mott McDonald

ABBREVIATIONS

CEG – CLEAN ENERGY GROUP

AW – ADVANCED WORK

CP – CONSTRUCTION PHASE

AGL – AJARISTSQALI GEORGIA LLC

LU – LAND USER

LO – LAND OWNER

CSR – CORPORATE SOCIAL RESPONSIBILITY PROGRAM

CONTENTS

1. EXECUTIVE SUMMARY

Ajaristsqali Georgia (AGL) is a fast growing organisation in renewable power, namely hydropower. AGL is developing a cascade scheme in the Adjara region of south western Georgia with an aim to supply the region and selected parts of northern Turkey with a reliable power source (see details below).

AGL has completed minor Advanced Works (AW) for the construction of approach roads, concreting for slope stabilisation for the main construction phase.

AGL employed several private local contractors to carry out the construction activities. However, as described later in this document, AGL's international and local supervision staff managed and coordinated the works. AGL employed 63 local people across 4 works sites; these sites were managed and run by 3 international managers. The work areas were in Didachara, Tsablana, Chiruqistsqali and Akhaldaba areas respectively.

Environmental, Health & Safety audit system was established to record performance and ensure compliance with construction method statements and safety risk assessments. In part, the systems were set up based on British & EU HSE Standards; as a result of the findings from these audits training and hazard awareness sessions were conducted.

Although standards of HSE were raised during the minor advanced works and supervisors trained on hazard awareness and mitigation, the AW did sustain one accident that involved a tipper truck turning over due to a lack of concentration from the driver and excessive speed. The driver received minor bruising to shoulder and torso, the tipper truck was a removed of site and broken down for scrap metal. The AGL HSE Manager completed a full accident investigation and introduced appropriate and proportionate control measures to prevent reoccurrence.

To clear forest section for the construction of roads, permits and other permissions were sought from the regional and national governments to removed trees and carryout excavation works. All works undertaken during the Advanced Works and construction are subject to strict controls procedures documented in key documents such as:

- Environmental & Social Impact Assessment (ESIA)
- Construction, Environmental Management Plan
- Biodiversity Action Plan (BAP)
- Environmental Impact Assessment (EIA)
- Land Acquisition & Livelihood Restoration Framework (LALRF)
- Land Acquisition & Livelihood Restoration Plan (LALRP)

Note:

The above mentioned documents were supported by onsite social meetings with local village people and with more technical and environmental specification delivered to personnel carrying out the works.

2. PROJECT DESCRIPTION

- After a competitive tender, CEG were awarded a license to develop the hydropower potential of the Ajdjaristsqali River and its tributaries in the Autonomous Republic of Adjara, in South Western Georgia, close to the Turkish border. The Ajaristsqali hydropower project is expected to supply the Georgian and Turkish power systems with clean renewable energy. The project will also enable Georgia to use more of its energy resources to meet electricity demand during the winter. The project is expected to have an installed capacity of 175-400 MW. The final design will be based on the recommendations in the feasibility study. It is planned that up to 2 hydropower stations (Shuakhevi HPP and Koromkheti HPP) with an average annual production output of 500-1200 GWh. The Khertvisi Scheme will not be pursued by AGL and should not be considered when reading this report.
- The estimated construction cost is between $300-700 million. If developed as planned, the Adjaristsqali project will be one of the largest foreign direct investment projects in Georgia to date, and a main contributor to export earnings for the country. The aim is that the Adjaristsqali project will contribute to regional employment opportunities for local people as well as significant tax income to the municipalities in the region where the project will be developed.
- Approximately 15km of road were finally constructed along with another 2km of various sections widened to accommodate the CP. Local people from the affected villages were recruited and trained to complete the works. Photographs in the rear of this document highlight live works being undertaken by local people.
- AGL are formally training people from affected villages and have constructed and registered a training facility in the Shuakhevi Municipality to prepare people for potential employment on the Shuakhevi HEPP Scheme.

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3. LAND ACQUISITION

- The majority AW passed through state owned land although significant portions of road construction passed along the outer edges of LU / LO land. Georgia has formal law based on the acquisition of land; therefore, AGL measured the affected land in line with current market value and added 10%. The measured areas included the road construction for the AW and the affected land for the CP, often in presence of the LO & LU. Small section of grazing land were needed as the necessary road width construction width was, in some parts 15m, it must be noted that the vast majority of roads passed around LO & LU property and were directed through state owned land wherever possible. No cropland was taken as a result of the AW road construction and no persons were displaced as a result of AW & CP activities.

- As a result of the MM feasibility study and Biodiversity Action Plan (BAP) & Critical Habitat Assessment (CHA) works, it was noted that no critical habitat areas were recorded and therefore not recorded. The minor sections of grazing land that was temporarily taken as a result of the AW were offset by movement of migrating cattle to others areas. The number of cattle ranged between 4 & 15 per herd. Larger sections of grazing land were required for the CP; AGL has produced and implemented a Land Acquisition & Livelihood Restoration Plan (LALRP) and a Land Acquisition & Land Rehabilitation Framework (LALRF) to deal with compensation in monetary terms and what land will be available after construction has been completed. A key feature of the LALRF is to cultivate land no longer needed by the CP back into a state whereby animals and grazing cattle may make use of it. Both documents mentioned above also go into significant detail for compensation methods and techniques involved for trees producing fruit and nuts and the quantities of money involved in the compensation transfer. Both documents were submitted to ADB, IFC & the EBRD on the 5th June 2013.

4. SOCIAL COMPLIANCE

- For work communication in the wider community, AGL employed a team of respected local people to assist in communication of targets and aims of the advanced works and main construction as a whole. This was achieved by conducting regular talks in the affected villages of the construction phase works and villages affected downstream of the Project.

- A Socio Economic Study was conducted by MM in late 2012 to get a thorough understanding of numbers of people in the affected areas of the Project including, but not limited to: sex, age, living areas and employment status. Some of the key other goals of the study were to understand the financial, literacy levels within the communities; AGL, through its CSR Program are fully supportive of cultivating an increased academic level through training and a better control of financial management once small shops and businesses start to accrue monetary wealth due to the CP. AGL has already organised monetary control workshops and has built a successful training Centre for local people in the Shuakhevi Municipality with a view to providing trained people to the Project. Another example of the Project CSR duties will be to construct village / community center's to assist AGL with communication during the CP, these centers in the affected villages would be handed over to the Municipality for future use by the community as they see fit after the completion of the CP. Various other options being considered as part of the CSR is the inclusion of a road traffic safety NGO and medical provision and assistance for persons in the valley with ailments such as poor vision or the further improvement of community roads to safer passage for public vehicles.

- Comment boxes have been positioned in each Municipality building to allow communities to make their views or complaints known anonymously if required. AGL, through its workplace supervisors and management, have frequent communication with local government personnel in Batumi and at mayor level in the affected valleys to ensure that issues with AW activities are address appropriately and to answer any questions on the main CP activities. A common question form all affected valleys was in relation to employment. In line with CEG's license to construct the Project, AGL is duty bound to train up to 600 people from the affected villages over an 18-month period. The mentioned training centre above was, and is, being managed by AGL but run on a day-to-day basis by Khobuleti College teachers that are training selected men and women for the Project.

  All successful students receive a Certificate of Education that meets the requirements set out by Georgian State Law, further increasing their chances of employment with contractors which has a positive impact on the social and financial standing of each family gaining reward through work. (The student selection process can be obtained from AGL if necessary).

AGL's land, social and environmental team undertook regular meetings in the affected villages to advise them on Project status and ongoing AW. These regular gave people in the affected villages an opportunity to express their concerns and ask questions on key topics such as employment, boreholes and geology.

5. ADVANCED WORKS

- To allow the main construction phase to start, AGL undertook advanced works that comprised of road construction from public highways that link up with planned Contractors, Owner's Engineer and Owner's camps where applicable, in line with ADB's Safeguard Policy Statement (2009) and AGL Health, safety & Environmental risk assessments.

- To carry out these works, AGL employed local contractors and personnel, supervised them and trained them with international management in basic site safety and significant site hazards such as works at height and moving plant. These works took approximately 8 months to complete. In conjunction with these advanced works AGL undertook a second stage of Ground Investigation (GI) works to prove the geology for the dam, powerhouse and spoil storage areas at all work location i.e. Tsablana, Pachkha, Akhaldaba, Didachara & Chiruqistsqali; these areas were selected after a thorough feasibility by the United Kingdom based firm, Mott McDonald (MM) from summer 2011 to spring 2012. The Geological Report and the Feasibility Study are readily available upon request. An description of works carried out in the areas is as follows:

Tsablana

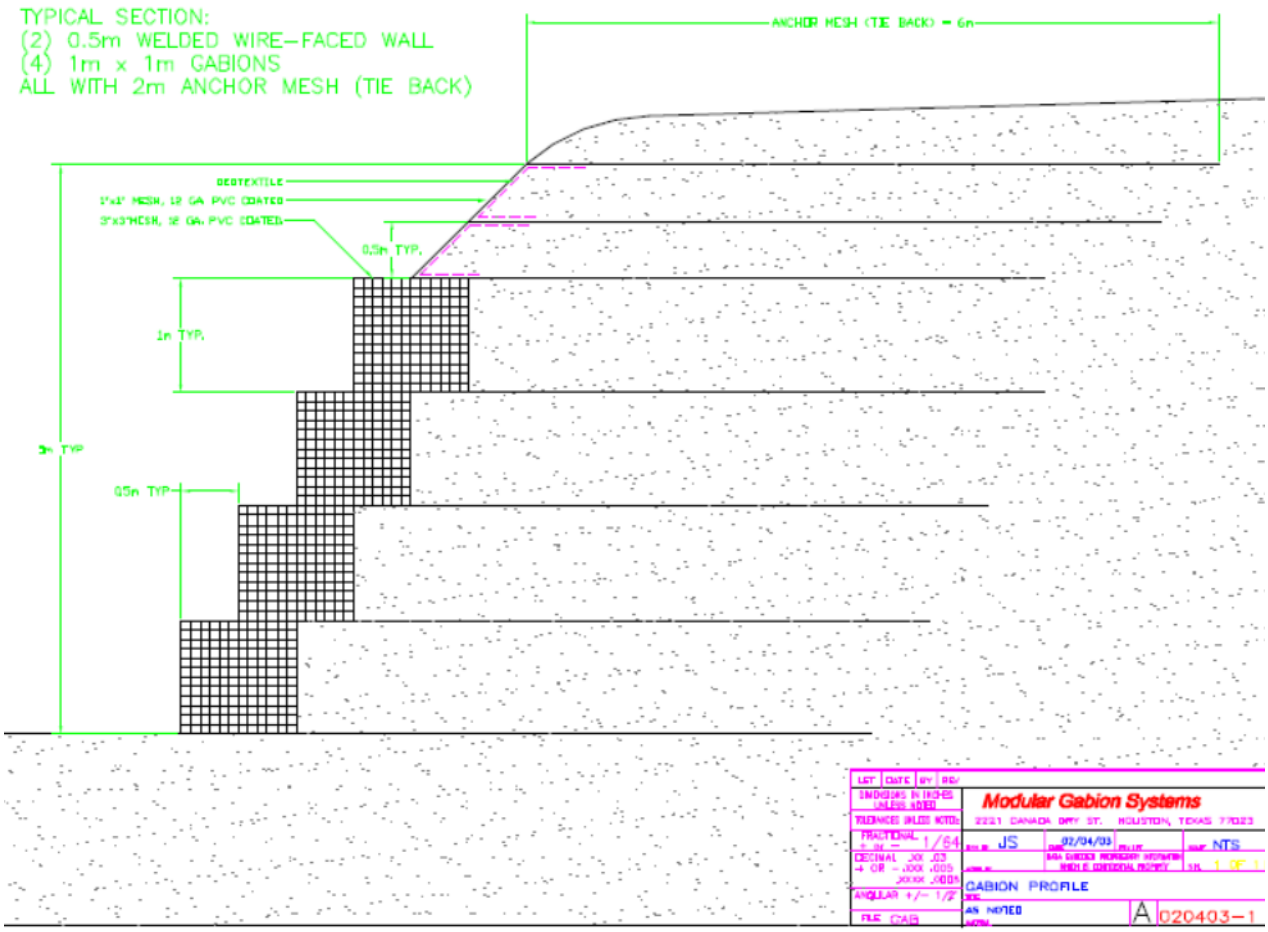
A short road section was constructed in a river bed area using suitable transported material that was tipped, rolled then compacted in 450mm layers up to a height of 1.350m. This road section was 700m long and will be used by the Contractor to gain access from public road to the Dam site location.

Pachkha

7km of was constructed by shallow excavation and backfilling techniques from the public road section in Pachkha up to the Pachkha Adit location. One 230m section or road passed by 5 rural cottages. The road required the purchasing of a strip of land 3m wide from 2 of the land LU's. These 5 LU's were compensated as per the LALRP and employed to construct the necessary Gabion Baskets for slope protection. A total

of 17 local people were trained and employed by AGL to complete the works in Pachkha. No crop land was taken as a result of the road construction. The drawing below is a typical example of the type of gabion Wall used on the AW to stabilize slopes and edges created as a result of the AW. The 230m x 3m section of land lost due to road construction can be reclaimed and put back to grazing land after the Project works are complete.

Illustrative example of AW slope protection.



Akhaldaba

In Akhaldaba 4.2km of road was excavated. One 900m section passed along side and through 12 LU's grazing land which also contained approximately 45 apple trees. The apple trees were avoided as much as possible and the 11m wide road directed around the outside of the grazing land. The road required the removal of 9 apple trees that were compensated as per the agreements in the LALRF & LALRP; the pertinent standards from these documents were also applied to the loss of grazing land for road construction.

The land lost can be reclaimed after approximately 2yrs when the tunnel excavation works for the Akhaldaba Adit are complete. The trees lost will be replanted by the LU but both trees and grazing land have the potential to be reclaimed and reinitiated.

Didachara

200m of shallow excavation was required to construct the road section to the proposed adit. A small bridge was built to allow access of small rear loading truck to remove the blasted material from the work face to the external tipping area. The bridge was constructed by forming the foundations, installation of steel reinforcement, erection of subsequent formwork and pouring of concrete. A bridge decking with hand rails already installed for edge protection was then lifted in place and secured. The excavated material will then be placed and compacted as the project Spoil Disposal Plan.

No trees, crop or grazing land was lost due to road or bridge construction in the Didachara work area.

Chiruqistsqali

No AW was performed at this location.

In Didachara and Tsablana, the closest human dwellings were in excess of 1.2km and as a result experienced little of no disturbance in relation to site traffic, noise or dust. At Pachkha and lower Akhaldaba, the main impacts were dust and noise. Dust was controlled by the use on a mobile water bowser when the temperature dried out the public road. Consultation with the local people in lower Akhaldaba and Pachkha concluded that operations requiring loud machinery such as concrete saws and pneumatic equipment would only be used after 9am. Mobile site plant was also isolated immediately after use to further reduce noise levels. Out the 12 affected residents in lower Akhaldaba, and 5 in Pachkha, only 3 able bodied men from each affected house was not employed on road construction as it passed their respective properties.

The other work areas of Chiruqistsqali and upper Akhaldaba had no impacts on residents or other private dwellings. The upper Akhaldaba sections were 2.4km from the nearest houses; the minor noise being generated and low dust levels presented a negligible impact risk to people. During the AW, the CP works undertaken at Chiruqistsqali was non-

intrusive engineering surveys to establish actual height of ground conditions and 5 boreholes in the river bed and Weir location to confirm rock depth, type, quality.

6. GRIEVANCE MECHANISM

Through public consultations, the community members and local people were informed that they have a right to file complaints and/or queries on any aspect of project implementation, land acquisition compensation, or on any other CP related grievance. An open door policy will be maintained to all persons from the following:

- Representatives of affected persons or the affected persons directly
- Representatives of the local governments or administrations
- Workers
- Project students
- Members of the public with CP related questions or concerns

Grievances were, and will be filed at the main site offices in Batumi and Shuakhevi and the complaints boxes in the municipality buildings in the valley. Complaints and grievances will be dealt with in terms of severity, disruption and likelihood of harm.

7. FINDINGS

From the 6th – 10th May 2013 the ADB, including the IFC & EBRD conducted a weeklong assessment of AGL's social and environmental preparedness; involving field visits and a comprehensive meeting based assessment and review.

The Lender's met several mayors from the affected Municipalities along with community leaders and received concerns and statements from members of the public. All potential Lenders put many questions to AGL it is worth noting that no serious issues or concerns were raised, however, AGL can expect an ADB Gap Analysis report should any discrepancies be found during the final review process.

As a result of the advanced works from September 2012 to February 2013 and the week-long audit conducted by the Lender's in May 2013, minor concerns were raised about the geology of the proposed work areas but more stress was placed on employment in the Project and the AGL training centre in Shuakhevi. To help combat this uncertainty AGL is stepping up its information campaign during June, July & August to ensure people in the

affected villages and wider Municipalities are fully aware of proceedings. AGL were, and are keen to point out that unemployment rates are approximately 85% in some villages in the valleys areas and the Project only has a fraction of places to fill.

8. SUMMARY

All local persons employed on the AW were done so under proper contract with AGL. All employment contracts were written in line with relevant sections of the Georgian Labor Code, however, it is worth noting that Georgian labor Law does not meet the standards set out in ILO and in part goes against certain EU standards such as Working Time Directives and employee rights. AGL, throughout its advanced works adhered to the Georgian Labor Laws but wherever possible adopted the more flexible approached of the EU to achieve its goals e.g. all employees were 18yrs or above and suitable for the task being assigned to them.

Due to its international management, AGL adopted many different forms and types of mitigation for site hazards. 70% of people employed on the road construction for the AW were familiar with site hazards and known control measures. Onsite training was required to demonstrate how to wear essential site items such Personal protective Equipment and the importance of site demarcation to keep members of the public away from live site activities and operating plant and equipment. For example purposes only, below are examples of the type of information relayed top personnel working on the AW phase.

1.7 Noise

Applicability

This section addresses impacts of noise beyond the property boundary of the facilities. Worker exposure to noise is covered in Section 2.0 on Occupational Health and Safety.

Prevention and Control

Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception.[52] The preferred method for controlling noise from stationary sources is to implement noise control measures at source.[53] Methods for prevention and control of sources of noise emissions depend on the source and proximity of receptors. Noise reduction options that should be considered include:

- Selecting equipment with lower sound power levels
- Installing silencers for fans
- Installing suitable mufflers on engine exhausts and compressor components
- Installing acoustic enclosures for equipment casing radiating noise
- Improving the acoustic performance of constructed buildings, apply sound insulation
- Installing acoustic barriers without gaps and with a continuous minimum surface density of 10 kg/m^2 in order to minimize the transmission of sound through the barrier. Barriers should be located as close to the source or to the receptor location to be effective
- Installing vibration isolation for mechanical equipment
- Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas
- Re-locating noise sources to less sensitive areas to take advantage of distance and shielding
- Siting permanent facilities away from community areas if possible
- Taking advantage of the natural topography as a noise buffer during facility design
- Reducing project traffic routing through community areas wherever possible
- Planning flight routes, timing and altitude for aircraft (airplane and helicopter) flying over community areas
- Developing a mechanism to record and respond to complaints

Noise Level Guidelines

Noise impacts should not exceed the levels presented in Table 1.7.1, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

[52] A point of reception or receptor may be defined as any point on the premises occupied by persons where extraneous noise and/or vibration are received. Examples of receptor locations may include: permanent or seasonal residences; hotels / motels; schools and daycares; hospitals and nursing homes; places of worship; and parks and campgrounds.

[53] At the design stage of a project, equipment manufacturers should provide design or construction specifications in the form of *"Insertion Loss Performance"* for silencers and mufflers, and *"Transmission Loss Performance"* for acoustic enclosures and upgraded building construction.

1.0 Environmental

1.1 Air Emissions and Ambient Air Quality

Applicability and Approach

This guideline applies to facilities or projects that generate emissions to air at any stage of the project life-cycle. It complements the industry-specific emissions guidance presented in the Industry Sector Environmental, Health, and Safety (EHS) Guidelines by providing information about common techniques for emissions management that may be applied to a range of industry sectors. This guideline provides an approach to the management of significant sources of emissions, including specific guidance for assessment and monitoring of impacts. It is also intended to provide additional information on approaches to emissions management in projects located in areas of poor air quality, where it may be necessary to establish project-specific emissions standards.

Emissions of air pollutants can occur from a wide variety of activities during the construction, operation, and decommissioning phases of a project. These activities can be categorized based on the spatial characteristic of the source including point sources, fugitive sources, and mobile sources and, further, by process, such as combustion, materials storage, or other industry sector-specific processes.

Where possible, facilities and projects should avoid, minimize, and control adverse impacts to human health, safety, and the environment from emissions to air. Where this is not possible, the generation and release of emissions of any type should be managed through a combination of:

- Energy use efficiency
- Process modification
- Selection of fuels or other materials, the processing of which may result in less polluting emissions
- Application of emissions control techniques

The selected prevention and control techniques may include one or more methods of treatment depending on:

- Regulatory requirements
- Significance of the source
- Location of the emitting facility relative to other sources
- Location of sensitive receptors
- Existing ambient air quality, and potential for degradation of the airshed from a proposed project
- Technical feasibility and cost effectiveness of the available options for prevention, control, and release of emissions

9. PHOTOGRAPHS

Photograph 1.

During the AW, local schools and teachers were informed of the works and children advised of construction related hazards. AGL management also had regular communication with the parents to ensure free flowing information exchange in the community.

Photograph 2.

Evidence of local personnel constructing a retaining wall in Pachkha as part of slope stabilisation. All personnel were fully equipped with personal protective and shown how to use it.

Photograph 3.

Below shows AGL managers and supervisors on site in Akhaldaba discussing a suitable route of shallow road excavation to avoid grazing land fruit trees.

Photograph 4.

Shows road excavation in Akhaldaba being conducted uder the supervision of two banksmen. This photograph also illusrtrates that routes were selected away from populated area to further minimise impact to the communities and grazing land.