

Environmental and Social Data Sheet

Overview

Project Name: NENSKRA HPP
Project Number: 2015-0670
Country: Georgia
Project Description: Construction and operation of a 280MW hydro-power scheme on the Nakra and Nenskra rivers in the Upper Svaneti region of Northwestern Georgia

EIA required: yes

Project included in Carbon Footprint Exercise¹: yes

Environmental and Social Assessment

The proposed Project is a 280 Megawatt (MW) HPP on the Nenskra River, located in the Svaneti District of Georgia. The project will contribute to address the increasing electricity demand by generating green energy covering up to 10% of the annual domestic consumption. During the winter period, the Project will provide 120MW firm capacity to the grid, contributing to i) mitigate the risk of electricity shortage, ii) reduce natural gas and electricity import and iii) replacing alternative fossil fuel-fired generation and thereby avoiding the release of significant amounts of carbon dioxide and other polluting emissions to the atmosphere.

The main project components comprise a 130-metre high rockfill dam creating a reservoir with a volume of 176 million cubic metres and occupying an area of 267 hectares. The Nakra River will be diverted to the main scheme through a c. 12-kilometre transfer tunnel, which requires the construction of a diversion weir, transfer tunnel portal and inlet channel in the Nakra valley. The powerhouse is situated c. 15 kilometres downstream from the Nenskra dam and reservoir water is conveyed to the powerhouse via a 15-kilometre headrace tunnel. The Nenskra facilities will be power-supplied with an approx. 18 kilometre long 35 kV electrical line between the powerhouse and the dam site and a 7 kilometre long 11 kV electrical line between the powerhouse and the valve chamber. The service line routes will follow the access road to the dam and the service road to the gate chamber while avoiding houses and other private assets.

Upgrading of the existing road along the Nenskra valley to the dam site is necessary to allow construction traffic to access the dam construction site, and this includes some road widening. Similar road upgrading is required in the Nakra valley. Additionally, a 7km 220kV transmission line running from the switchyard of the thitted to powerhouse to the Khudoni/Jvari substation will be constructed by the Georgian State Electrosystems ("GSE"). GSE will undertake a separate ESIA for the 220kV network connection consistent with the Lenders' standards.

The main construction period is currently planned to start in Q1/ Q2 2018. Some early works – including the road upgrading – were executed during the period from September 2015 to

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.

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September 2017. Power generation is planned to start in end of 2020 if the conditions are favourable.

Installation of the temporary construction camps, one at the dam site and one at the powerhouse site, are currently planned start in the Q4 2017. Work on the Nakra road upgrading is planned to start Q4 2017 or Q1 2018 and installation of the temporary construction camp at the Nakra diversion inlet site is planned to start Q3 2018.

A project site visit was undertaken in 2016 involving the proposed dam, diversion weir site, the transfer tunnel, access roads, main construction camp site, and the powerhouse. Site meetings were held with village representatives and community members of Nakra Village, pre-construction contractors and project representatives. Meetings were also held with Georgia's Ministry of Environmental Protection and Natural Resources, NGOs and relevant institutions to discuss the project's environmental and social impacts and related permitting and monitoring matters. EIB also took part, as an observer, in a number of stakeholder engagement and consultation meetings with affected communities and stakeholders carried out by the Promoter.

Environmental Assessment

The project is part of the Enguri Cascade system designed in the 1960's that comprises the operational 1,320MW Enguri HPP, 340MW Varnili HPP. The project is located around 30km away from the city of Mestia and the Upper Svaneti UNESCO World Heritage Site area established in 1996. The project is in the vicinity of the planned Upper Svaneti Natural Park, an area of high ecological value, with a number of endemic species of fauna and flora.

An Environmental and Social Impact Assessment (ESIA) for the Project was prepared, as required by Georgian legislation, by a national consulting firm based on field investigation undertaken in 2011 and 2014. Following the public hearing meetings held in May 2015, the environmental permit was awarded by the Georgian Environmental Authorities in October 2015.

However the scope of the national ESIA did not fully address Lenders' Environmental and Social Standards in particular as regards to requirements to cumulative impacts, livelihood restoration, dam safety, biodiversity, and stakeholder engagement. In fact, issues related to dam safety, land acquisition, loss of livelihood and inadequate compensation and stakeholder engagement as well as biodiversity were raised with the promoter as well as with the Lenders by project-affected communities and civil society organisations. Therefore, supplemental impact studies, reports and management plans were required. Substantial coordination among the Lenders was necessary to establish the scope of the supplemental information, to take into consideration the Environmental and Social policies and requirements of each Institution.

Given the timing of the due diligence and the project schedule, the supplemental information focused both on impacts from construction and operation (specifically hydrology, water quality and erosion impacts), including environmental health and (dam) safety impacts, biodiversity, labour conditions, and security as well as social impacts (compensation for loss of livelihood, social investment programmes), consultation, and adequate consideration of vulnerable groups within the affected communities. The principal requirement for the EIB is the establishment of an Environmental, Social, Health and Safety (ESHS) Management System to be followed by the Project at all times including by the EPC Contractor and subcontractors, during the construction and operation phases. The Management System includes a number

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of plans developed to address any outstanding residual risk and ensure compliance with the project standards and commitments (captured in the Environmental and Social Management Plan (ESMP) and the Environmental and Social Action Plan (ESAP)). The Promoter contracted a reputable international consulting company to carry out the additional assessments and studies. The supplemental information was disclosed for consultation to the public and affected communities and was reviewed by the Lenders, the Lender's E&S consultants together with the Panel of Experts.

Internal and third party monitoring is being undertaken on the implementation of the ESIA and ESMP commitments.

Environmental, Social Health and Safety Management System: As per the ESAP and the ESMP, key construction phase Environmental and Social Management System procedures, such as Occupational, Health and Safety (OHS) implementation plan, Hydrology and water quality management plan, waste management plan, blasting procedures, emergency preparedness and response procedures, etc. will be and have been developed prior to the commencement of the main construction works. Operation phase ESMS procedures will be developed prior to the commencement of HPP operations.

The Promoter shall, prior to the commissioning of the Project, develop a Project integrated Management System certified ISO 9001, ISO 14001 and ASHAS 18001 covering all Project aspects for the operation phase.

An OHS site representative will be appointed by the EPC contractor as part its obligations. In addition, E&S consultant will be appointed to oversee the implementation of the ESAP. The EPC contractor will be required to retain qualified environmental and/or OHS personnel to oversee ESMP implementation and key requirements will be built into the construction contracts. The Promoter's OHS and E&S representatives will monitor site activities against the ESMP and ESAP requirements. The Promoter has appointed a reputable consultancy to undertake quarterly E&S monitoring and reporting during the construction phase and annual monitoring during the first 2 years of operation, in order to provide assurance that agreed ESAP performance levels are met.

Dam safety: An independent Panel of Experts has been appointed to the dam safety related aspect of the detailed design and to advise the promoter on critical aspects of the power scheme until operation starts. Based on the last basic design available, the Panel of Experts has assessed the Nenskra hydropower project against "Good International Practice" relating to all matters of dam safety and the safe design and construction and efficient operation and maintenance of the project components. In March 2017, they found the project design is suitable for the site conditions and addresses adequately the landslides, avalanches and flood risks as identified. Contributing a number of recommendations, the Panel of Experts concluded that the final basic design meets international good practice. Nevertheless, taking into consideration the challenging site conditions, a robust dam safety monitoring plan will be put in place subject to Bank's positive review. The PoE is expected to meet at least twice a year, but the frequency of site visits will be adjusted depending on the actual design and work progress.

Biodiversity: Despite its proximity to the planned Upper Svaneti Protected Area, a candidate Emerald Site under the Bern Convention and the construction of a large reservoir, the Nenskra hydropower scheme has a limited environmental impact. However, in November 2016, the Georgian Ministry of Environment has redefined the boundaries of the candidate Emerald site and the project now finds itself adjacent to the site. The Bern Convention Committee has yet to agree to the changes and is in the process of reviewing the new site

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definition and rationale for the change. The Lenders required that the Promoter, nevertheless carry out an appropriate assessment to investigate any impacts of the Project on the conservation status of the qualifying features of the Emerald site (as some of these species may range into the project area) in line with the standards and content of the Appropriate Assessment under the EU Habitats Directive. The assessment, which took into account in-combination effects with other projects on ecological receptors, concluded that there will be no significant impacts. Nevertheless, the decision of the Committee may require an addendum to the ESIA, thereby delaying project construction.

Protection and endemism for species and habitats have been determined against the Bern, IRCN, CITES, Birds and Habitats Directives criteria. As a result of the Project there will be impacts on habitat loss. The total area of habitats potentially to be effected will be 861 ha. During the construction phase, approximately 314 ha of permanent forestry and scrub loss will occur. To compensate for this loss, the implementation of a Nenskra/Nakra watershed based Reforestation Management Plan is planned. The plan aims to restore and manage a greater area of forest, than that which will be lost. For temporarily lost habitats a Revegetation and Management Plan will be implemented to enable targeted planting and management to restore areas, to similar habitats to those pre-construction. For mammal and bird species no significant impacts were predicted taking into account the identified mitigation. Only two red list/Annex 1 species of bird were recorded within the Project area and which may also breed there: woodlark and red-backed shrike. Both species are regarded as being common and widespread in the region. Monitoring for brown bear will also be undertaken: population estimates will be based on DNA analysis of brown bear dung. Monitoring for otter presence will also be undertaken at the same time as the fish/invertebrate surveys.

The Nenskra dam will prevent downstream migration of fish from the upper part of the valley to the lower Nenskra River, as no fish pass is proposed for the Nenskra dam. This is because the available technical solutions are considered to be inefficient for a 130 m high structure, with fluctuating reservoir levels. Since no suitable spawning areas were identified downstream of the dam on the Nenskra river itself, the altered migration pattern could reduce the brown trout population over time, post construction, in the Nenskra River downstream of the dam, as the only available spawning areas would be within the tributaries flowing in to this stretch of the Nenskra. However, the fish impact assessment found that the change in river levels and flow velocity which will occur as a result of the dam could be of benefit to fish populations in some sections of the river. Overall impact is therefore considered low to moderate.

A River Channel Maintenance/Habitat Enhancement Management Plan will be implemented which will include ongoing monitoring through the construction and operational phases of the project to assess the population levels of brown trout and invertebrate population so as to inform the need for remedial action if required.

A Critical Habitat Assessment has been performed, in line with Lenders' requirements to identify areas of high biodiversity value and which would be sensitive to the proposed development. The assessment has been based on the primary data collected during the field biodiversity surveys. Priority Biodiversity Features and Natural Habitats were also assessed. No critical habitats were assessed to be present within the Project-affected area (dam and reservoir, powerhouse and penstock, Nakra water intake), as the habitats present were considered to be modified through logging and stock grazing. While emblematic species such as brown bear, lynx and wolf are present in the Project area, none of the habitats present were considered to be critical for the conservation status of these species as it was considered that habitats outside the Project area, (especially those upstream of the proposed impoundment area) provided more natural, less disturbed areas, with sufficient food availability for these species.

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Cumulative Impact Assessment: Upon Lenders' request, the Promoter prepared a cumulative impact assessment within the area of influence of the Enguri catchment and identified the E&S impacts and risks associated with the Project in the context of existing², planned and reasonable predictable developments. With regards to cumulative impacts on biodiversity and ecosystems, the methodology was based on the concept of Valued Ecosystem Components. No significant impacts have been predicted on terrestrial ecosystems and biodiversity as there is no spatial overlap of the affected areas of the different projects. However in the reach upstream from the Nakra weir, cumulative impacts will be significant on fish habitat and population. It is essential that coordination with Nakra 1 to 3 HPPs and the Government of Georgia is assured so that a suitable ecological flow is guaranteed and that the appropriate fish passes are in-built in to the Nakra HPPs. On a watershed scale, the overall loss of resources was assessed as not significant however coordination with other projects with regards to the ecological flow is essential.

Cultural Heritage: A field study by a cultural heritage specialist was conducted and concluded that the project, including transmission line, would not have any significant impact on cultural heritage. In the unexpected event that earthworks uncover archaeological artefacts, a Chance Find procedure will be implemented such that constructive activities are temporarily halted whilst a qualified archaeologist is consulted.

EIB Carbon Footprint Exercise

Based on the hydropower scheme's average generation figure of 1,219 GWh per annum, the emissions savings are estimated at 582,000 tonnes of CO₂ equivalent per year.

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

Involuntary Resettlement and Livelihood Restoration: All the settlements and people potentially affected directly by the Project are located in the Nenskra and Nakra River valleys. The Project is constructed on land plots subject to landownership controversies and where local activities such as pasture and logging many be affected. A Land Acquisition and Livelihood Restoration Plan (LALRP) covers Project components for which the design is sufficiently advanced for land acquisition requirements to have been defined. This encompasses (i) the site of the dam and reservoir area, (ii) the powerhouse area, (iii) the Nakra diversion weir area; (iv) the operator's village, and (v) the Nenskra access road upgrading works. The principles and procedures adopted by the LALRP will also be applied to the land acquisition required for components which are not defined at this time, namely (i) the upgrading of the Nakra road, (ii) the spoil disposal areas at the powerhouse, (iii) the construction of the 35 kV electric service line between the powerhouse and the dam site and (iv) the 110 kV power supply line from the Khudoni Substation to the Powerhouse which is needed during construction.

Physical resettlement was avoided by changing the design and location of various project facilities. People affected by land take will only be affected by economic resettlement, i.e. loss

² The CIA is important because of the potential cumulative impacts with other HPPs in the Enguri catchment. The Enguri dam-reservoir which has a footprint of 1,350 hectares is situated downstream of the Nenskra Project. Another important HPP scheme – the Khudoni HPP (construction has started), which would occupy an area of 530 hectares – is planned upstream of the Enguri reservoir and downstream from the Nenskra HPP.

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of land, crops, trees, or structures. For those project components currently covered in the LALRP, a total of 86 households, representing 387 individuals, are affected.

The number of households significantly impacted, i.e. will lose more than 10% of income producing assets, is twenty-nine (29), representing 146 people. This is the number for land acquisition included in the LALRP. It is not expected that the number of significantly impacted people will change significantly when the LALRP is updated to include currently non-appraised areas as these components are linear infrastructure and like the Nenskra road will not have any significant impact on individual households. These components will be defined in close consultation with the communities and with a clear objective to avoid any physical displacement and to minimise any adverse effects on livelihoods and the updated LALRP will be submitted to the Bank for review.

Full replacement cost has been required by the lenders as the underlying principle of compensation for property losses when in-kind compensation (i.e. land for land) was not possible. For this project it was decided to offer in-cash compensation partly due to the preference of the affected people and due to a lack of suitable alternative land plots in both the Nenskra and Nakra valleys. Almost all potential arable land plots are already in use, while remaining land is mostly non-productive. Purchase of land plots from non-affected families was seen as transferring land access from one family to another. In addition to the compensation, the promoter, through the Community Investment Programme will be supporting local people through community development initiatives.

Information meetings regarding resettlement policy, principles and eligibility for compensation has been provided to affected communities on several occasions since 2015 during the census process, public information meetings, socio-economic surveys and the on-going dialogue and negotiations on the loss of pasture land. The LALRP was disclosed locally in the two valleys and on the web in March 2017. Regular and transparent communication process has been established by the Promoter with the affected communities. A Social Officer, a Community Investment Officer, a Land acquisition and compensation Manager are permanently based at the Project information office in Chuberi village. Two Community Liaison Officers, employed from the 2 valleys have been closely working with the communities since December 2015.

Grievance Redress Mechanism: A two tiers grievance redress system has been established by the promoter to solve affected people grievances. The first tier will be a project level review of the complaint, and the definition of a solution to the complainant. If the complainant refuses the proposed solution, the grievance is escalated to the Grievance Resolution Committee (GRC), constituted as the second level grievance redress mechanism. This body, composed of representatives of the administrative officers, representative of the Project and two community members (one male, one female) will be established for each valley. The GRC will meet on a weekly or a fortnightly basis. All grievance received will be logged by the Promoter.

Indigenous Peoples: The Supplementary social impact assessment confirms that there are no indigenous people's communities in the project location that will be impacted by the Project and which would trigger EIB's or the other Lenders' Standards and requirements on indigenous peoples.

Labour and Working Conditions: The project will require a peak workforce of about 1,100 workers for construction. To ensure maximum local benefits are achieved through the construction phase, and to minimise the influx of workers from outside the region, the Project will aim to recruit 100% of the unskilled workers from the Nenskra and Nakra valleys. If insufficient numbers of workers are available locally, the recruitment will be extended to the nearest villages in the Mestia Municipality and the Svaneti region as secondary catchment

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areas. This process will be managed through a Local Recruitment and Procurement Plan. Processes and procedures with respect to labour management will be in alignment with national, Lenders and International Labour Organisation requirements. Monitoring of the supply chain will allow to enhance local indirect business opportunity where and when possible.

All workers coming from others part of Georgia will be accommodated in working camps. During operation, the hydropower facilities will employ between 50 to 100 staff on site. Most jobs would be skilled positions. Unskilled labour positions would be limited to guard keeping and operators' village maintenance. During the main construction period, the Promoter will provide training for local unskilled employees in order to raise skill levels of employees to maximize the number of local workers employed during operation.

Public Consultation and Stakeholder Engagement

Stakeholder engagement activities during the ESIA development and national disclosure included village-level meetings and public hearing in the valleys and in the Municipality of Mestia. As part of the Supplementary E&S Studies, a Stakeholder Engagement Plan (SEP), aligned with international standards was prepared and revised to reflect public participation and disclosure requirements keeping in mind approaches needed to ensure the engagement of groups susceptible to exclusion (such as women, the disabled and the elderly). The SEP was prepared keeping in mind approaches needed to ensure the engagement

As a result the Project carried out engagement activities as part of the ongoing additional E&S studies so as to inform the respective assessments. These studies were then presented and focused meetings with communities and stakeholders on their concerns were carried out under the guidance of the Lenders' E&S consultants and the POE. To ensure sustainability of the community engagement processes, international experts have been working closely with the Promoter in planning and implementation of the consultations.

The SEP is aligned with an internal online Stakeholder Information System for tracking ongoing engagement, grievances and issues of stakeholder interest. In line with the SEP commitments, the project has committed to disclosing summary of grievances and correction measures to affected communities, along with providing timely information to relevant stakeholders on updated project documents, including LALRP and the Community Investment Programme.

Other Environmental and Social Aspects

Capacity of the Promoter: The initial capacity of the Promoter to carry out the additional assessment and its capacity to implement stakeholder engagement was low. Therefore the Lenders required that the Promoter contract international consultants with the required expertise to assist in completing all the necessary E&S assessments including the SEP. The review of the assessments and studies and the monitoring of the stakeholder engagement were carried out not only by the Lenders but also by the Lenders' E&S advisors and by the PoE.

The promoter is required to ensure that the ESHS management team is adequately staffed with appropriately qualified and experienced staff to meet the E&S requirements of the project. The promoter will be required to formalise the ESHS system through the development

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of a certified project integrated management system in line with international certification standards.

Community Investment Programme: In addition of employment during construction and - to a lesser extent -during operation, upgrading of local roads and payment of taxes, a Community Investment Programme will also offer an important additional avenue for enhancing positive impacts and socioeconomic benefits. This programme is closely linked to the LALRP The Community Investment Programme is being developed through a participatory assessment of community needs and will be implemented with the participation of local authorities as a benefit sharing mechanism . Some of the investments relate to community health (upgrade of clinic, medical equipment, and ambulances), education (rehabilitation of schools, kindergarten and vocational training), upgrade village internal roads, agricultural development and water supply.

Gender Inclusion: In terms of project impacts, it is expected that the proposed operation will translate into positive impacts for women as they disproportionately carry the responsibility for household related work and are vulnerable to costly and unreliable electricity supply. To that effect, women's questions and complaints related to impacts of the project are encouraged and will be monitored. In addition, noting gender disparities in employment and in an effort to minimise this gap, the project will encourage the recruitment of women through targeted communication and advertisement of job opportunities. This will be done by using local communication channels to disseminate recruitment information and targeting areas where women can access information. Despite these efforts, the impact of those efforts will remain modest.

Disclosure: All the ESIA related documents including the Supplementary Information package which included the additional assessments and studies required for the Project to meet Lenders Standards as well as the ESMP and the ESAP were disclosed to the Public in March 2017 on EIB's website as well as the Promoter's website. The full set of documents is also available locally at the Nenskra Information Centres in Chuberi and Nakra villages.

Conclusions and Recommendations

Disbursement conditions:

- Submit to the Bank the Nature Declaration Form detailing the Appropriate Assessment and its conclusions on the Candidate Emerald Site Svaneti I.
- The Promoter shall contract, to the Bank's satisfaction, an AFRD expert as part of the Panel of Experts during design, construction and at least the first three years of operation.

Undertakings

- Following the consultation meetings with affected communities on the supplementary E&S assessments, the promoter shall revise and update the ESMP and associated plans accordingly and to the satisfaction of the Bank.
- Submit to the satisfaction of the Bank the key E&S plans and assessments as detailed in the ESMP.
- Update the ESMP and associated plan as required as the project progresses or due to any changes before operation starts.

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- Six months before operations start, develop an ESMP for operations and develop a Project Integrated Management System
- The Promoter shall implement the Project in line with the requirements spelled out in the ESAP.
- The promoter shall appoint the required E&S experts in order to effectively implement the ESMP and the actions under the ESAP.
- The Promoter shall ensure that that the ESHS management team is adequately staffed with appropriately qualified and experienced staff to meet the E&S requirements of the project.
- The Promoter shall ensure that the EPC contractor has the resources and staff in place in a timely manner so as to be able to implement its obligations under the ESAP and the ESMP.

With the above-mentioned conditions and the implementation of the ESAP, the Project is acceptable for EIB financing in E&S terms. A comprehensive monitoring programme, will be put in place to ensure that the studies and assessments especially in relation to climate change, landslides, land clearance and livelihood restoration as well as the implementation of the mitigation and compensation measure contained in the ESMP and agreed to by the Promoter are in line with the Bank's E&S Standards and requirements.

PJ/SQM/ECSO 15.10.15