PS Moglicë Extension

Pumped-Storage Hydropower Project

Profound ESIA Procedure (DCM No. 686/2015)

Phase I – Notification

Information on the Project-Environment interaction

May 2024

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1 INTRODUCTION

Statkraft AS ("SK") and Devoll Hydropower Sh.A ("DHP") are co-concessionaires to the Concession Agreement entered into with the Ministry of Infrastructure and Energy of Albania ("MIE") on 19.12.2008, relating to the design, financing, construction, ownership, operation, maintenance and transfer of the Devoll River Hydropower Project in the Republic of Albania, as amended through the 1st, 2nd, 3rd and 4th Supplements (the "**Concession Agreement**"), approed through Law no. 10083, dated 23.02.2009, as amended. Under the 4th Supplement to the Concession Agreement, approved through Law no. 83/2023, dated 02.11.2023[1], DHP received the right to construct the PS Moglice Extension within 10 (ten) years after the Effective Date of the 4th Supplement, if DHP, in its sole discretion, elects to construct the PS Moglice Extension. Such construction must be done in accordance with good industry practice.

PS Moglice Extension is defined by the Concession Agreement as a Plant consisting of a pumping storage facility to be constructed near Moglice Plant and linked to the Moglice reservoir in the Devoll River Valley, as described in Annex A, including all necessary civil works and all electro-mechanical installations, including but not limited to turbines, generators, powerhouse ancillary equipment, transformers, switchyard equipment and the transmission line to the agreed point of delivery of electricity to the Grid. The installed capacity will be approx. 1200 MW +/- 35% (up to 1620 MW), subject to the final design.

Under Annex A of the Concession Agreement, the PS Moglice Extension will be located near the existing HPP Moglice Reservoir and will utilize the water in said reservoir. The head is created by establishing an upper reservoir in the hills above the Moglice reservoir, (the "PS Moglice Extension Upper Reservoir"). The PS Moglice Extension will pump the water from the HPP Moglice Reservoir to the PS Moglice Extension Upper Reservoir and will generate energy when the water flows back again into the HPP Moglice Reservoir. PS Moglica Extension Upper Reservoir will be created by constructing dams, designed mainly for daily storage of water, of approx. up to 20 million m^3 live storage. The waterways and the powerhouse are located under the ground.

PS Moglice Extension is a further optimisation of the existing hydrological resources in the Moglice reservoir, and can become an important energy storage solution for the future energy system of the region, while at the same time having limited additional environmental and social impacts. The development of the project is closely linked to the future development of the energy market (deployment of increased renewables such as solar and wind in Albania, the Western Balkans and the wider region), as well as the strengthening of the regional transmission system with increased capacities.

This Report is prepared in the frame of the ESIA Notification process, based on the Albanian legal requirements. This report is structured and contain the information as required from Decision of Ministerial Council (DCM) No.686 (29.07.2015) "*Approval of rules, responsibilities and timeframe of the environmental impact assessment procedure*" as amended. In the frame of the Feasibility Study for PS Moglice Extension it is planned to be conducted an extended Environmental Impact Assessment for the project.

This Report is prepared by EMA Consulting Shpk (NIPT: L12010003V, License No. LN 3752-09-2011/2), Environmental Expert Klodian Aliu (Certificate No. 294 – date 10.12.2014). Attached to this report are presented copies of the respective licenses / certifications of the authors of the report.

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[1] Law no. 83/2023, dated 02.11.2023: https://qbz.gov.al/eli/fz/2023/174/accfbaa6-0b46-447b-b96c-2410c1bc70f6

2 SHORT DESCRIPTION OF THE VEGETATION IN THE PROJECT AREA (INCLUDING RECENT PHOTOS)

The project area is mainly a forest area with patches of natural grasslands along the forest. In this aspect two main forest areas with its specific vegetative association dominate the project area: mixed deciduous and conifers forest and xero-thermophilus formations, both combined with patches of open grasslands. Some plots of land within the proposed project areas are bare land that has been agricultural land in the past years, actually the surface is occupied by herbs like gramineous species. The main vegetation typologies in the project area are prescribed in the following paragraphs.

2.1 Mixed deciduous and coniferous forests

Mixed deciduous and coniferous forests are found in a significant part of the project area. These formations unusually extent from 350 to 1200 meters above sea level (asl). The most typical species of this formations include black pine *(Pinus nigra)* and oak species such as; Turkey oak (*Quercus cerris), Italian oak (Quercus frainetto), Pubescent oak (Quercus pubescens), Macedonian oak (Quercus trojana)* and *Sesille oak (Quercus petraea).*

Other species present in this formations include; Manna ash *(Fraxinus ornus)* and Junuperus species, as prickly juniper *(Juniperus oxycedrus*) and common juniper *(J.communis)* and rarely can be observed individuals of maple *(Accer campestre).* In the upper levels of the forests young individuals of European beech (*Fagus sylvatica)* can be observed.

These forest areas include also open areas grasslands with scattered shrub species of; almond leave (*Pyrus amygdaliformis),* common myrtle (*Myrtus communis),* Cornel *(Cornus mass)* and European hornbeam *(Carpinus orientalis).* The current use of this areas include firewood cuttings and grazing activities. This type of forest is located in a part of the area planned for the water storage reservoir.

Figure 2-1 Images of young pine trees with of oak species (Source: Consultant, April 2024)

Figure 2-2 Natural grassland patches in the planned storage reservoir area (Source: Consultant, April 2024)

2.2 Transitional forest and shrub area (stable xero-thermophilous formations with Buxus sempervirens)

This evergreen formation is very widespread in southeast regions of Albania and is often developed over ultrabasic rock bedrock. These areas are dominated by the shrub species of European box (*Buxus sempervirens*) and the prickly Juniper (*Juniperus oxycedrus*).

The formation covers a large parts of the slopes starting from the Devolli river banks and upwards until the mixed deciduous and coniferous formations appear, aftterwards the buxus associaitons starts becoming rarer and gradually disappears. Other common perennial species observed in this areas include rock alyssum (*Odontarrhena muralis* (Waldst. & Kit.)), the wood spurge Euphorbia amygdaloides, scented grass, *(Chrysopogon gryllus)*, Yellow oat-grass *(Trisetum flavescens)*, etc. This type of vegetaiton represents advanced stages of degraded mixed oak forests.

This type of vegetation is considered one of the most degraded formations in Albania and within the study area. This forest areas have been degraded due to human activity of the settlements in the area (firewood, food for animals and grazing).

Figure 2-3 European box (Buxus) vegetation associations with junipers. (Source: Consultant, April 2024)

Figure 2-4 Open grassland (partly used for agriculture and fruit trees) close to Gjinikasi village. (Source: Consultant, April 2024)

3 INFORMATION ON THE WATER BODIES PRESENT WITHIN AND NEXT TO THE PROJECT AREA

The main water body in the project area, which is also the planned hydrological source for power generation in the proposed project is the existing Moglice HPP reservoir.

In the project area and its vicinity are present a small network of water bodies, mainly superficial streams and less groundwater sources. The main water sources (superficial) in the project area and its vicinity include: a) Devolli river; b) River of Tele c) Stream of Burime and the Creek of Bodeja. Apart the Devolli river that is a steady flow river the others are significantly affected from seasonal climate conditions by even drying out totally in summer time period.

The Devolli river flows north of the proposes project area meanwhile the small river of Tele (as named in ASIG platform) flows in the west of the project area. The planed PS Moglice Extension Upper Reservoir area drains into catchments of two small water streams, respectively; Stream of Burime flowing north of the proposed upper reservoir site and Bodeja Creek flowing west of the area where the upper reservoir is planned. None of these water bodies will be captured or used from the proposed project. The project activities will use water from the existing Moglica HPP reservoir (Devolli river water) by pumping it upward to the planned upper reservoir and after releasing it again for electricity generation. Adequate protection measures will be implemented to protect the Stream of Burime and the Creek of Bodeja that will continue to flow free in its original bed and will not be used or captured for the HPP use. Meanwhile the river of Tele is not intersected or exposed to none of the project activities.

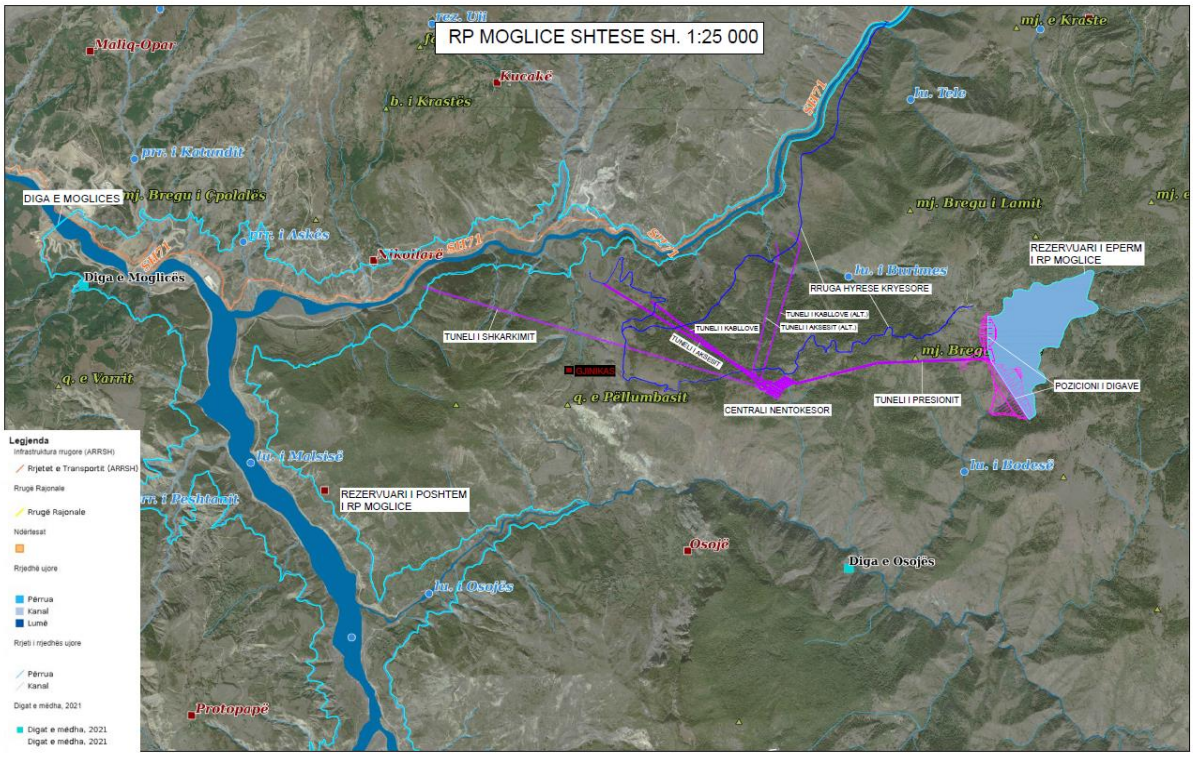

Figure 3-1 Water sources in the project area: Source (Consultant)

4 IDENTIFICATION OF THE POSSIBLE IMPACTS TO THE ENVIRONMENT (BIODIVERSITY, SOIL, WATER, AIR)

In the following table are provided the identified potential impacts expected to occur from the development of the proposed project as assessed in this Pre-Feasibility phase. Such impacts are still in identification phase and will be further elaborated and assessed during the Profound ESIA[2] process. It has to be noted that the proposed pumped-storage hydropower scheme is not a typical one that includes interruption of any natural flow or deviation of the water but it is a consolidated technology by utilizing water from existing Moglice HPP reservoir, which is already reserved for hydropower generation.

Table 4-1 Potential identified impacts from the proposed HPP

Construction phase		
Receptor		**Impact description**
Terrestrial habitats and biodiversity	Habitat fragmentation	Loss and fragmentation of forest habitats due to construction of the project components, mainly the dams, upper reservoir, and excavation disposal sites. Access road to the planned storage reservoir and some construction sites are currently existing some are standard for rural areas and some segments as forest tracks, anyhow some short segments are necessary to be open and others existing require reconstruction and improvements.
	Habitat loss for some terrestrial species	Reduction of natural habitat will also affect some plant species and terrestrial fauna species in the project area. In this respect some of fauna species will leave the area of works and relocated in nearby habitats. More details will be provided to the full ESIA report.
	Fauna disturbance and injury	Disturbance of mammals and birds, particularly during the breeding season. During excavation, transport and other operations any accidental killing or injury of burrowing small mammals (nests in grasslands areas) or reptiles may occur. More details will be provided to the full ESIA report.
Soil	Soil contamination	During the construction operations as consequence of any incidental vehicle breakdown or lack of regular maintenances, minor contamination of the soil with oil of lubricants may occur (due to leakages). This will be a localized impact that can be avoided and managed with adequate mitigation measures.
	Soil erosion	Erosion along the excavated areas and slopes may occur during excavation process and especially during heavy rainy periods.

[2] The project investor will develop an ESIA process and report in line with International Finance Corporation and best practice. The ESIA report is planned to comply with Albanian standards and applicable EU standards as well.

Water quality	Runoff process	Excavated soils and debris may be wiped out from rainwater, this may lead to slide or sludge runoff to downstream areas. Contamination of the water streams from excavated debris (soil, rocks) may increase the solids and turbidity of the water, if debris are not managed properly in the site (water/rain erosion etc) or during any transport operation (crossing the river). Such impacts include, contamination (solids/turbidity) from runoff of muds and soil at the excavation areas. More exposed to this impact is the water quality of Moglice HPP reservoir, Devolli river and the Creeks of Burime and Bodese.
	Contamination	During any river crossing minor contamination (from any incident of lack of vehicle maintenance) of the water from spilling/leakage of the oil and lubricants of the vehicle may occur (if machinery and vehicles are not maintained and operated properly). Such risk is not identified from groundwater sources due to geological structures of the area with limited groundwater sources.
Air	Gases and dust	Use of construction vehicles is associated with air pollution emissions from the vehicle engines but also dust during the transport operations. Construction vehicles and transportation equipment emits exhaust gases emissions containing carbon oxides (CO_x), nitrogen oxides (NO_x), hydrocarbons (HC) and other particles (PM) that have a negative impact on air quality. Such impact is expected to be very localized and mainly relevant for the site workers as human settlements are very limited in the project site and impact area. The main human settlement relevant for this assessment is Gurshqipe (Gjinkas and Popçisht). No significant impact in the air quality is expected to occur, this also due to the fact that area is rural and free of any major pollution source (absorption capacity is high).
	Noises & vibrations	The main human settlements along the transport route (Popcisht, Kucake) and Gjinikas may be temporarily affected from the noises released during the construction operations. Such impact will be limited for transport operations and more present in construction sites. The noisy operations will be managed properly. More details (quantitative data) will be provided in the Full ESIA report.
Operational phase		
Aquatic biodiversity	Aquatic species (reservoir and river)	Frequent and rapid changes of large volume of water between lower and upper reservoirs can have negative effect on the aquatic biodiversity, especially on the lower reservoir. The pumped water from Moglice reservoir may transport small aquatic species that can be damaged from the pumping forces. The regular process of water pumping will be associated with injury, killing and disturbances to aquatic species (fish and macroinvertebrates species) present in the Moglice reservoir and connected with upper stream of Devolli river.

5 SHORT DATA ON POSSIBLE EMISSIONS INTO THE ENVIRONMENT INCLUDING WASTEWATER, GASES, DUST, NOISE, VIBRATION, AND GENERATED WASTE

Wastewater: This includes grey water which represents all domestic wastewater except that generated from the toilets and black water which represents all domestic wastewater generated from toilets. A worker camp is planned to be constructed for the accommodation of the construction workers. The camp should be equipped with necessary wastewater collection and treatment system. Wastewater will be generated aslo during the construction activities, tunel openings, drillings, contrete production etc. This wastewater will be handeled in site according the specific standarts for the environemtal management of the construction sites.

Gases: Exhaust pipe emissions ((NO_X, CO_2 PM, HC etc.) will be released from the construction machineries. A considerable number of machineries is expected to be mobilized and used for excavations, transport and concrete works during the construction phase of the project.

Dust: Construction activities will potentially generate dust from activities such as ground clearing and earthworks, including trenching, levelling, quarry operations, network construction and reinstatement works. The major dust sources is expected to be from movement of vehicles over unpaved routes located far from the villages, if no surface treatment with asphalt is not applied to the project roads. Under normal meteorological conditions, dust impacts would be limited to within several hundred meters of the project site.

Noise & vibrations: The site preparation activities such as earth moving, site excavation, quarry operations, transportation of equipment and materials to and from the sites will contribute to the generation of noise. However, noise exceedances from the construction vehicles, machinery and equipment is expected to be limited to the construction sites and period. Vibrations will occur mainly in the construction sites and strongly depend on the construction technology and operations (quarries, drillings, transport mainly). Should quarries with blasting activities be planned within 1,000 meters from sensitive environmental and social uses (protected areas or residential areas), specialized studies in relation to modeling of noise and vibrations should be undertaken.

Waste generation: Waste will be generated during the construction process. Such waste includes packing materials, debris from excavations, excess concrete (some clean-up for site waste). Hazardous waste may be generated such as; used oils and, in general, the waste produced in the maintenance operations of the machinery used in the work, unused paintings, oil polluted rags, filters etc. A waste management system based on waste hierarchy approach should be established before starting the construction operations. The waste should be handled in compliance with applicable legal provisions, permits and applicable good practices to prevent risks, environmental and social impacts associated with inadequate disposal of that waste. Waste Management Plans (WMP) should be prepared and implemented during all phases of the project. During the construction phase, the implementation Contractors should comply with all the waste handling requirements based on the approve plans. DHP has already consolidated an Environmental and Social Management System and has developed the necessary capacities to manage the waste related to its operations.

6 DURATION OF THE IDENTIFIED IMPACTS (TIMING)

The following criteria are applied to provide some initial and preliminary characteristic of each identified impacts.

Table 6-1 Definition of impact criteria

Criteria	Definition
Impact duration	**Short term** - Effects that persist for a limited period only, such as those which would cease once a particular activity has finished or which may disappear in short time (within 3 years) due to natural recovery of the environment.
	Medium term - Impact is expected to last in the medium term (between 3 and 6 years).
	Long term -Effects that result from an irreversible change to the baseline environment or which persist for the entire project lifetime.

Table 6-2 Duration of identified impacts

Construction phase			
Receptor	**Impact**	**Explanation**	**Impact duration**
Terrestrial habitats and biodiversity	Habitat fragmentation	Loss and fragmentation of forest habitats due to construction of the project components, mainly the dams, upper reservoir, and excavation disposal sites. Access road to the planned storage reservoir and some construction sites are currently existing some are standard for rural areas and some segments as forest tracks, anyhow some short segments are necessary to be open and others existing require reconstruction and improvements.	Long term
	Habitat loss for some terrestrial species	Reduction of natural habitat will also affect some plant species and terrestrial fauna species in the project area. In this respect some of fauna species will leave the area of works and relocated in nearby habitats. More details will be provided to the full ESIA report.	Long term
	Fauna disturbance and injury	Disturbance of mammals and birds, particularly during the breeding season. During excavation, transport and other operations any accidental killing or injury of burrowing small mammals (nests in grasslands areas) or reptiles may occur. More details will be provided to the full ESIA report.	Medium term
Soil	Soil contamination	During the construction operations as consequence of any incidental vehicle breakdown or lack of regular maintenances, minor contamination of the soil with oil of lubricants may occur (due to leakages). This will be a localized impact that can be avoided and managed with adequate mitigation measures.	Short term
	Soil erosion	Erosion along the excavated areas and slopes may occur during excavation process and especially during heavy rainy periods.	Short term

Water quality	Runoff process	Excavated soils and debris may be wiped out from rainwater, this may lead to slide or sludge runoff to downstream areas. Contamination of the water streams from excavated debris (soil, rocks) may increase the solids and turbidity of the water, if debris are not managed properly in the site (water/rain erosion etc) or during any transport operation (crossing the river). Such impacts include, contamination (solids/turbidity) from runoff of muds and soil at the excavation areas. More exposed to this impact is the water quality of Moglice HPP reservoir, Devolli river and the Creeks of Burime and Bodese.	Short term
	Contamination	During any river crossing minor contamination (from any incident of lack of vehicle maintenance) of the water from spilling/leakage of the oil and lubricants of the vehicle may occur (if machinery and vehicles are not maintained and operated properly). Such risk is not identified from groundwater sources due to geological structures of the area with limited groundwater sources.	Short term
Air	Gases and dust	Use of construction vehicles is associated with air pollution emissions from the vehicle engines but also dust during the transport operations. Construction vehicles and transportation equipment emits exhaust gases emissions containing carbon oxides (COx), nitrogen oxides (NOx), hydrocarbons (HC) and other particles (PM) that have a negative impact on air quality. Such impact is expected to be very localized and mainly relevant for the site workers as human settlements are very limited in the project site and impact area. The main human settlement relevant for this assessment is Gurshqipe (Gjinkas and Popçisht). No significant impact in the air quality is expected to occur, this also due to the fact that area is rural and free of any major pollution source (absorption capacity is high).	Medium term
	Noises & vibrations	The main human settlements along the transport route (Popcisht, Kucake) and Gjinikas may be temporarily affected from the noises released during the construction operations. Such impact will be limited for transport operations and more present in construction sites. The noisy operations will be managed properly. More details (quantitative data) will be provided in the Full ESIA report.	Medium term
Operation phase			
Receptor		**Impact description**	**Impact duration**

Aquatic biodiversity	Aquatic species (reservoir and river)	Frequent and rapid changes of large volume of water between lower and upper reservoirs can have negative effect on the aquatic biodiversity, especially on the lower reservoir. The pumped water from Moglice reservoir may transport small aquatic species that can be damaged from the pumping forces. The regular process of water pumping will be associated with injury, killing and disturbances to aquatic species (fish and macroinvertebrates species) present in the Moglice reservoir and connected with upper stream of Devolli river.	Long term

7 SPATIAL EXTENSION OF THE NEGATIVE IMPACTS (DISTANCE OF IMPACT EFFECTS FROM THE PROJECT SITE)

The project area is a mountain remote area with small scattered villages. These villages are largely abandoned during the recent decades and therefore currently include low population. The most exposed to the project operations is the village of Gurshqipe (Popçisht and Gjinikas) in Moglica administrative unit, located circa 300m from the construction operations areas.

Figure 7-1 Gjinikasi village (Source: Consultant, April 2024)

Other settlements that may be affected from transport operations include Kucake and Osojë. These villages are located in considerable distance (over 2.5 km) from the construction sites anyhow will be temporary impacted from transport operations, stone quarry operations (noises). The settlements of the Voskopoja Administrative Unit (Municipality of Korca) are in considerable distance (over 2 km) from any construction/operation site and not exposed to the expected environmental impacts of the proposed project.

More details for social impacts will be provided in the Full ESIA report as well.

8 POSSIBILITY TO REINSTATE THE IMPACTED AREAS IN THE ORIGINAL CONDITIONS (AFTER ACTIVITY ENDS) INCLUDING APPROXIMATE RESTORATION COSTS

The restoration and rehabilitation of the impacted areas is one of the principles and standards of DHP. So far such actions have been implemented in already constructed HPP of Banja and Moglica as well. In this respect the proposed project will development different environmental management instruments including restoration plan. All impacted site for temporary use (during construction phase) should be reinstated and rehabilitated. Some key actions to this process include:

- Identify and map all sites and areas with restatement objective, these sites include; temporary roads, parking areas, accommodation camps, warehouses and construction yards etc.;
- Develop specific reinstatement actions for each site, including earthworks, topsoil placement, and planting of trees;

All the reinstatement actions will be defined in a specific Restoration Plan. Depending on the final configuration of the plant and related facilities during the Feasibility phase, also the rehabilitation requirements shall be identified. At this stage, it is too early to quantify the expected restoration costs, notwithstanding they can be expected to range between 500,000 to 1,000,000 Euro. The cost of restoration actions will be known and detailed only when finalizing the Restoration Plan. The plan will be consulted with the national and local authorities with roles in forests and biodiversity management. DHP should allocate necessary financial resources to this process as well.

9 MITIGATION MEASURES FOR THE IDENTIFIED NEGATIVE IMPACTS

The project will develop a specific Environmental and Social Management Plan (ESMP) based on the national requirements and international best practice including the International Finance Corporations (IFC) Performance Standards and Hydropower Sustainability Guidelines on Good International Industry Practice. The ESMP will include and consolidate specific mitigation measures for the identified negative impacts including an actions and reporting system as well. In the following table are provided some preliminary principle mitigation actions for the project impacts. This information may be considered a guiding framework as these mitigations will be further detailed and elaborated in the ESIA/ESMP process and document. DHP has already established an experienced ESMS system managing the Banja and Moglica HPP operations.

Table 9-1 Indicative guiding mitigation measures for the identified impacts

Construction phase			
Receptor		**Impact description**	**Key mitigation measures**
Terrestrial habitats and biodiversity	Habitat fragmentation	Loss and fragmentation of forest habitats due to construction of the project components, mainly the dams, upper reservoir, and excavation disposal sites. Access road to the planned storage reservoir and some construction sites are currently existing some are standard for rural areas and some segments as forest tracks, anyhow some short segments are necessary to be open and others existing require reconstruction and improvements.	• Plan and mark the construction site to limit the operations only within the construction site and not affect additional areas; • Clearing of vegetation to be limited to that which is strictly necessary • Prepare and enforce Construction Site Management Plan to avoid and minimize the excavation works outside the construction site from all contractors and subcontractors engaged in construction activities. • Perform daily site supervision procedures to ensure that impacts on habitats are minimized and managed. • Develop a specific biodiversity study (During full ESIA) and a Biodiversity Management Plan with specific rules for protection of biodiversity and habitats; • Prepare and implement Restoration Plan in the disposal sites, stone quarries and all impacted areas of the construction phase. Regularly monitor the anticipated impacts in biodiversity and biodiversity status in the project area.
	Habitat loss for some terrestrial species	Reduction of natural habitat will also affect some plant species and terrestrial fauna species in the project area. In this respect some of fauna species will leave the area of works and relocated in nearby habitats. More details will be provided to the full ESIA report.	
	Fauna disturbance and injury	Disturbance of mammals and birds, particularly during the breeding season. During excavation, transport and other operations any accidental killing or injury of burrowing small mammals (nests in grasslands areas) or reptiles may occur. More details will be provided to the full ESIA report.	
Soil	Soil contamination	During the construction operations as consequence of any incidental vehicle breakdown or lack of regular maintenances, minor contamination of the soil with oil of lubricants may occur (due to leakages). This will be a localized impact that can be avoided and managed with adequate mitigation measures.	• Strip off topsoil and store separately • Minimize excavation and backfill periods • Prevent structures causing run-off soil erosion and apply soil stabilization measures, where required; • Restrict servicing of vehicles to designated areas;

	Soil erosion	Erosion along the excavated areas and slopes may occur during excavation process and especially during heavy rainy periods.	• Prepare and implement a soil excavation management plan with specific rules to handle safely the excavated topsoil and store it for later use in backfilling and restoration works.
Water quality	Runoff process	Excavated soils and debris may be wiped out from rainwater, this may lead to slide or sludge runoff to downstream areas. Contamination of the water streams from excavated debris (soil, rocks) may increase the solids and turbidity of the water, if debris are not managed properly in the site (water/rain erosion etc) or during any transport operation (crossing the river). Such impacts include, contamination (solids/turbidity) from runoff of muds and soil at the excavation areas. More exposed to this impact is the water quality of Moglice HPP reservoir, Devolli river and the Creeks of Burime and Bodese.	• Erosion and storm control measures should be defined prior starting the construction phase. The excavations should be planned and managed in efficient approach, preferably to occur not in heavy rainy season. • Excavated topsoil should be disposed and managed to be reused in backfilling and restoration activities. The site to preserve the topsoil and or disposal the excavation materials (from tunnels etc) should be determined prior starting the excavating operations. Such potential sites are already identified in this initial phase and provided at first part of this report. • All excavation sites should be marked and strictly supervised during the excavation process. Implement structural control measures as sediment trapping/embracement or channel excavation in low areas/downslopes/side slopes of confining the construction sites. • Excavated materials and eroding materials should be stored away from the drainages paths to prevent runoffs of such materials. All excavations, topsoil and debris should be stockpiled in stable manner from runoff process.
	Contamination	During any river crossing minor contamination (from any incident of lack of vehicle maintenance) of the water from spilling/leakage of the oil and lubricants of the vehicle may occur (if machinery and vehicles are not maintained and operated properly). Such risk is not identified from groundwater sources due to geological structures of the area with limited groundwater sources.	• Implement vehicle inspection rules and enforce maintenance to prevent spills and leakages of any pollution liquid (lubricants) from construction and transport machineries. • Prepare and implement Spillage Control and Management Procedures, ensure necessary site logistic to clean up any contamination in the construction sites.

Air	Gases and dust	Use of construction vehicles is associated with air pollution emissions from the vehicle engines but also dust during the transport operations. Construction vehicles and transportation equipment emits exhaust gases emissions containing carbon oxides (COx), nitrogen oxides (NOx), hydrocarbons (HC) and other particles (PM) that have a negative impact on air quality. Such impact is expected to be very localized and mainly relevant for the site workers as human settlements are very limited in the project site and impact area. The main human settlement relevant for this assessment is Gurshqipe (Gjinkas and Popçisht). No significant impact in the air quality is expected to occur, this also due to the fact that area is rural and free of any major pollution source (absorption capacity is high).	• Review, understand and allocate the necessary resources to implement the ESIA and ESMP mitigation actions (in respect to air and noises impacts); • Provide training to the workers related with activities with air and noise emissions (drivers, excavations manoeuvres etc) • Prepare and implement a Traffic Management Plan, that optimizes the air impacting operations in such way to avoid as much impacts (efficient use of the time and machineries when working in areas close to the community). • Ensure that air polluting materials to be covered during transport and in site (debris and excavated soil) so to prevent the wind blow up and dispersion into the air. • Ensure that vehicles and machineries are well maintained and equipped with functional exhaust systems (when required inspect certificate of emissions and vehicle maintenance documents and exhaust system). Transport trucks shall be cleaned from muds when existing the construction site and driving in the paved roads. • Liaise with local community members expose to air and noise impacts, inform them for the impact period, mitigation actions and improve mitigation measures as reasonably advised from local community. Optimise the transport and construction operations. • Perform supervision and monitoring actions for the implementation of the air and noise mitigation measures. • Implementing euro emission standards on motor vehicles is one of the efforts to prevent air pollution in the atmosphere. Therefore, it is necessary to control vehicle emissions by using more environmentally friendly means of transportation. All construction vehicles shall be certified as required from Albanian legislation to comply with exhaust emissions. The fuel supplier shall be licensed and provide fuel within Albanian quality norms.
	Noises & vibrations	The main human settlements along the transport route (Popcisht, Kucake) and Gjinikas may be temporarily affected from the noises released during the construction operations. Such impact will be limited for transport operations and more present in construction sites. The noisy operations will be managed properly. More details (quantitative data) will be provided in the Full ESIA report.	

			• Consider alternatives for usage of electrified ropeways for transport of construction materials, instead of traditional transport though fossil fuel machineries. • Consider viable alternatives for maximum use electrified equipment and machineries in project implementation works and electrical vehicles for transport purposes.
Operational phase			
Aquatic biodiversity	Aquatic species (reservoir and river)	Frequent and rapid changes of large volume of water between lower and upper reservoirs can have negative effect on the aquatic biodiversity, especially on the lower reservoir. The pumped water from Moglice reservoir may transport small aquatic species that can be damaged from the pumping forces. The regular process of water pumping will be associated with injury, killing and disturbances to aquatic species (fish and macroinvertebrates species) present in the Moglice reservoir and connected with upper stream of Devolli river.	• Perform specific biodiversity study and develop adequate mitigation measures for protection of species risked from the pumping process. • Monitor the biodiversity status and impacts of the proposed project in the biodiversity and habitats. • Implementation of a long term biomonitoring program is a crucial part of the environmental management system already in place at the current HPPs as well. • Implement biodiversity protection actions as recommended from monitoring results.

10 POSSIBLE TRANS- BOUNDARY IMPACTS (IF RELEVANT TO THE PROJECT)

The proposed project is planned to be developed and implemented in the south-eastern part of Albania, far from the national borders. Its construction and operations activities currently do not include any operation that may cause any long range trans-boundary impacts.

ANNEX 1 – ENVIRONMENTAL LICENSE

REPUBLIKA E SHQIPËRISË
MINISTRIA E ZHVILLIMIT EKONOMIK, TREGTISË DHE SIPËRMARRJES

QKB
Qendra Kombëtare e Biznesit
National Business Center

Numri serial: **LN-3752-09-2011/2**

LICENCË

Subjekti: EMA Consulting

Adresa: Tirane, TIRANE, Tirane, TIRANE, Rruga e Kavajës, Pallati BAJA-BAD, Apartamenti Nr. 31

Kodi: III.2.A

Kod tjetër:

Data e lëshimit: 08/11/2013

Afati i vlefshmërisë: Pa afat

Emërtimi përshkrues i veprimtarisë

Veprimtaritë e ekspertizës lidhur me ndikimin në mjedis.

Kategoria

Shërbime ekspertize dhe/ose profesionale lidhur me ndikimin në mjedis

Kufizime specifike

Licenca ushtrohet sipas kufizimeve në legjislacionin në fuqi

Nënkategoria

Veprimtaritë e ekspertizës lidhur me ndikimin në mjedis

Detyrime specifike

Licenca ushtrohet sipas detyrimeve në legjislacionin në fuqi

Veprimtari specifike

Vendi i kryerjes së veprimtarisë

Qarku: Tirane, **Rrethi:** TIRANE, **B/K:** Tirane, **Q/F:** TIRANE,
Adresa: Rruga e Kavajës, Pallati BAJA-BAD, Apartamenti Nr. 31

Specialiteti

Nënshkrimi i sportelit:

REPUBLIKA E SHQIPËRISË MINISTRIA E ZHVILLIMIT EKONOMIK TREGTISË DHE SIPËRMARRJES QKB QENDRA KOMBËTARE E BIZNESIT

Ky dokument mbetet pronë e Qendrës Kombëtare të Biznesit dhe duhet të kthehet në rast se ka ndryshim të ndonjë detaji ose ndërpritet detyrimi ligjor për të qenë person i tatueshëm.

ANNEX 2 – ENVIRONMENTAL CERTIFICATE

REPUBLIKA E SHQIPËRISË
MINISTRIA E MJEDISIT

Nr. 11691 Prot. Tiranë, më 10.12.2014

Nr. identifikues **294**

ÇERTIFIKATË

Në mbështetje të Vendimit të Këshillit të Ministrave Nr. 122, datë 17.02.2011 Për një ndryshim në Vendimin Nr. 1124, datë 30.7.2008, të Këshillit të Ministrave, "Për miratimin e rregullave, të procedurave dhe kritereve për pajisjen me certifikatën e specialistit, për vlerësimin e ndikimit në mjedis dhe auditimin mjedisor":

Z. KLODIAN ALIU

Çertifikohet për hartimin e raporteve të vlerësimit të ndikimit në mjedis, për të kryer auditimin mjedisor, për hartimin e ekspertizave për probleme mjedisore dhe thirrjen si ekspert për të vlerësuar një raport të vlerësimit të ndikimit në mjedis ose rezultatet e një auditimi.

MINISTRI

Lefter KOKA

REPUBLIKA E SHQIPËRISË MINISTRIA E MJEDISIT TIRANË