



# Concept Environmental and Social Review Summary

## Concept Stage

### **(ESRS Concept Stage)**

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**BASIC INFORMATION**

**A. Basic Project Data**

Country	Region	Project ID	Parent Project ID (if any)
South Asia	SOUTH ASIA	P178722	
Project Name	Upper Arun Hydroelectric Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	9/4/2023	2/15/2024
Borrower(s)	Implementing Agency(ies)		
Ministry of Finance	Upper Arun Hydroelectric Limited (UAHEL), Upper Arun Hydroelectric Limited (UAHEL)		

Proposed Development Objective

The Series of Project (SOP) and Project Development Objective (PDO) is to increase renewable and sustainable electricity supply and regional electricity trade.

Financing (in USD Million)	Amount
<b>Total Project Cost</b>	<b>1710.00</b>

**B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?**

No

**C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]**

This Project will enable the development of the Upper Arun Hydropower Electric Project (UAHEP) on the Arun River in eastern Nepal, about 10 kilometers (km) south of Nepal’s border with China. The UAHEP is a peaking run-of-river plant with optimum capacity of 1,060 MW. A 23 km long access road will be constructed to connect the power plant site to the Koshi Highway. A 5.8 km long 400 kV double circuit transmission line will be constructed to evacuate the power generated by the UAHEP to the Integrated Nepal Power System in the Arun Hub at Haitar.



Nepali households and the private sector will benefit from UAHEP through access to improved quality and quantity of electricity supply. The communities in the Project area, aside from full compensation, will receive project benefits and contributions to local economic development. Aside from fulfilling Nepal's energy needs, the UAHEP has the potential of aiding the displacement of more expensive thermal power generation in India and Bangladesh and support the absorption of variable renewable energy (VRE) sources such as solar and wind. Being a renewable energy source, the UAHEP is expected to avoid 2.967 million tons of carbon dioxide/year. Climate co-benefits are estimated at 80-90 percent subject to further detailed assessment during Project preparation.

#### D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

The Upper Arun Hydroelectric Project (UAHEP) is located on the Arun River in the Bhotkhola and Makalu Rural municipalities of Sankhuwasabha District in Province 1, Nepal. The Arun River originates from China (90 percent of the catchment) and drains a portion of Nepal (10 percent of the catchment) before joining the Sapta Koshi River, which flows into India where it joins the Ganges River. The Project lies in a straight line about 200 km northeast of Kathmandu, the capital of Nepal, approximately 140 km north of Biratnagar, the provincial capital, and about 40 km north of the district capital at Khandbari. The project area is remote and presents accessibility challenges, with limited vehicular access, especially due to the ongoing construction of the Koshi Highway from Khandbari, along the west side of the Arun River, to the border with China. To enhance access, the Project will construct a bridge over the Arun River and an approximately 23 km access road, including a 2.0 km tunnel, to the headworks site. The project area lies in the highly geologically vulnerable Arun Valley, which has complex geohazards including high seismic activity, landslides, glacial lakes and sediment transport.

The project area is adjacent to Makalu Barun National Park (MBNP) buffer zone, which occupies the right bank of the Arun River. Most of the project facilities will be located on the left bank of the Arun River including the intake, the head race tunnel, and powerhouse. Only a part of the proposed reservoir falls within the MBNP buffer zone. The MBNP harbors diverse and healthy flora and fauna including threatened mammals and migratory species of avifauna. Critically endangered and/or endangered species—such as the red panda, Himalayan black bear, Chinese pangolin, black musk deer, mouse-eared myotis (bat), and golden mahseer (fish)—have been reported in the greater area. The golden mahseer was last reported more than 10 years ago downstream from the powerhouse. The water in the upper Arun River is cold and fast-flowing with a high sediment load. Such conditions support limited fish diversity, including the vulnerable common snow trout, which exhibits local migratory behavior.

The project area is inhabited mainly by indigenous groups, namely, Bhotes, Rais, Gurungs, Tamangs, Newars, and Sherpas, among others. These groups and communities are dependent on land and the surrounding natural resources for their livelihood, with agriculture as their primary economic activity. Other complementary economic activities include livestock and small-scale trade activities. Overall, there are 29 small villages or farmsteads located within the Project's direct area of influence, with an estimated population of 1,400 households. The population is culturally rich and practices customary and traditional rituals and ceremonies that are rooted in Tibetan Buddhism and nature-based Animism. Literacy and other skill levels are low, resulting in limited livelihood diversification. Most of the villages are located well above the Arun River, because of the steep and largely inaccessible gorge present along most of the river length. Some of the steep slopes are used to cultivate cardamom, the primary cash crop in the area. Downstream



from the confluence of the Arun and Barun rivers, the river valley widens sufficiently to allow for some small villages to be established near the river, including Barun Bazar, Adima, Chongrak, Kapase, Gola, and Hitar.

Adding to the UAHEP Project, five other hydropower projects have been proposed along the main stem of the river in the Arun valley and 32 on various tributaries. Arun III is at an advanced stage of construction. The project design takes into account key lessons learned from the World Bank’s previous engagements in Nepal’s energy sector (Arun III, Kabeli-A, Upper Trishuli-1), such as meaningful stakeholder engagement, cumulative impact assessment, effective grievance management, and managing the impacts on vulnerable groups.

**D. 2. Borrower’s Institutional Capacity**

Upper Arun Hydroelectric Limited (UAHEL), the Project promoter, owner, and operator, a subsidiary of the Nepal Electricity Authority (NEA), is the project implementing agency. For a project of this size and complexity, the UAHEL and the NEA (the majority owner of UAHEL and national utility of Nepal) will require substantial technical assistance and support to address capacity constraints (expertise, numbers, capability) to ensure the appropriate level of environmental and social (E&S) risk mitigation.

In line with good international industry practice (GIIP) and proportional to the level of risk, as well as the capacity constraints, the NEA and UAHEL have engaged an international consulting firm—Environmental Resources Management (ERM)—to conduct the E&S assessments and prepare plans to meet the World Bank’s requirements. In addition, a free, prior, and informed consent (FPIC) process has been commissioned and is being facilitated by the Nepal Federation of Indigenous Nationalities (NEFIN), a local organization with representation of major indigenous groups in Nepal. The NEA has also engaged an Environmental and Social Panel of Experts (ESPOE), as well as a Dam Safety Panel of Experts (DSPOE), to provide independent technical advice during project preparation and implementation.

The World Bank has been working closely with the NEA and UAHEL to develop a comprehensive institutional and staffing plan, including for E&S risk management. The NEA and UAHEL are committed to setting up a fully staffed and qualified E&S unit based on the recommendations of the capacity assessment conducted by the World Bank and Asian Development Bank (ADB). The NEA will also hire a skilled and competent owner’s engineer to support the UAHEL and NEA during project preparation and implementation. The E&S staffing and strengthening of UAHEL will be supported by the Project as one of the key activities and will be recorded in the Environmental and Social Commitment Plan (ESCP).

**II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS**

**A. Environmental and Social Risk Classification (ESRC)**

High

**Environmental Risk Rating**

High

The Project is favorable from an E&S perspective, compared to other hydropower plants of a similar size, due to its low ratios of hectares flooded (0.02 per MW of installed capacity) and people physically displaced (0.10 per MW of installed capacity). Despite this, the environmental risk of the Project is rated “High” due to the scale of civil works and the inherent risks and impacts of the Project, including: (i) significant generation of spoil/muck from the construction of the dam and rock cutting from the exploratory adits, headrace tunnel, desander tunnels, pressure shaft, underground powerhouse, tailrace tunnel, access road and its tunnel, quarry and proposed borrow areas,

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which could pollute waterways and the surrounding environment and impact on communities; (ii) large vehicular traffic, including heavily loaded trucks that will move through remote villages, which will generate significant dust, noise, and vibration impacts, and could cause traffic-related accidents and pose health and safety risks; (iii) the sensitive location of the Project adjacent to the MBNP, a key biodiversity area, and its potential risks and impacts on the park and its terrestrial and aquatic biodiversity; (iv) the relative remoteness and mountainous terrain of the Project area, and its high level of seismic hazards and unstable slopes, leading to serious concerns regarding soil erosion, landslides, glacial lake outburst floods (GLOFs), and high sediment loads in the Arun River; (v) operational risks related to seismic hazards and impacts on aquatic biodiversity and downstream communities from hydropeaking and reduced river flow; and (vii) cumulative impacts on valued environmental and social components (VECs), which are important attributes in risk assessment, due to the development of multiple hydropower plants in the main stem of the Arun River and its tributaries, as well as other development interventions in the project area.

**Social Risk Rating**

High

The social risk is rated “High”, as the Project is expected to induce land acquisition, which would lead to the physical and economic displacement of indigenous groups and other communities. Much of the land to be acquired is customarily held and used by these groups for multiple purposes. ESS7 requires the consent of indigenous groups in the Project area. Other social concerns include restrictions on or controlled access to forests and natural resources, and potentially increased exploitation/competition for resources from an influx of laborers into the area, the degradation of long-held customs and cultural heritage, the relocation or modification of cultural heritage sites, and the potential breakdown of traditional social networks and support systems. Project-induced labor influx may also impact on the social fabric and strain local infrastructure and resources. This labor influx, along with project-induced opportunistic migration into the area, may: (i) overwhelm local communities, which are mostly remote, rural, and indigenous; (ii) expose the population and laborers to the risk of communicable diseases, including HIV/AIDS and COVID-19; and (iii) lead to increased demand for social services, cost of living, and strain on environmentally sensitive areas. Unmitigated construction-induced landslides, blasting and tunneling, and increased traffic in the project area could lead to health and safety risks for workers and local communities. The remoteness of the area may pose challenges to enforcing mitigation measures. Other social risks and impacts to the health and safety of local communities relate to: (i) the use of security personnel, (ii) sudden and rapid changes in water levels downstream of the powerhouse during peaking operations; (iii) the sexual harassment, exploitation, and abuse of local women and girls (see next section). Any impacts of the Project will affect vulnerable households disproportionately, suggesting the need for specialized transitional hardship support systems for vulnerable and poor households. Other critical issues to be assessed and managed with utmost care are related to the transmission-line right-of-way easement, as well as to the possibility to use instruments for sharing benefits to support the development of the local communities.

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**B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered**

**B.1. General Assessment**

**ESS1 Assessment and Management of Environmental and Social Risks and Impacts**

**Overview of the relevance of the Standard for the Project:**

The ESS1 standard is relevant to the Project. A project of this type and scale—in a sensitive location, in a remote area of Nepal that is inhabited by indigenous people, and within the buffer zone of a national park (MBNP)—is expected to have significant adverse E&S risks and impacts, some of which may be irreversible. The Project’s potential risks and



impacts include terrestrial, riparian, and aquatic habitat fragmentation and biodiversity loss as a result of dam construction, the modification of natural river flow patterns, noise, dust, and vibration, as well as the occupational and community health and safety issues that come with a large influx of workers and increased vehicular traffic. In addition, as the project area lies within a zone with high seismic hazards and unstable slopes, there is also the risk of soil erosion, landslides, and GLOFs, all of which could have serious environmental and social impacts. Social risks and impacts relate to the physical and economic displacement of mostly indigenous people and communities, sexual exploitation and abuse/sexual harassment (SEA/SH), the degradation of cultural protocols and adverse impacts on cultural heritage, and a reduction in community access to the provisioning services provided by forests. Cumulative impacts on select VECs from multiple hydropower investments along the Arun River and associated tributaries and other development interventions within the project area, such as the construction of the Koshi highway, are also anticipated.

The Project will assess, prepare, and disclose an Environmental and Social Impact Assessment (ESIA) prior to appraisal, which will include a critical habitat assessment, an environmental flow (EFlow) assessment, and an Environmental and Social Management Plan (ESMP). The draft ESIA is near completion and has been subjected to multi-stakeholder consultations. A biodiversity management plan (BMP) will also be developed as part of the ESIA/ESMP and a biodiversity action plan (BAP) will be prepared for critical habitat features to achieve net gain. Other instruments to be prepared and disclosed prior to appraisal include a cumulative impact assessment (CIA), resettlement action plan (RAP), indigenous peoples plan (IPP), labor management procedures (LMP), SEA/SH action plan, and environmental and social commitment plan (ESCP). A stakeholder engagement plan (SEP), along with a GRM, was prepared and disclosed on February 3, 2020, and will be updated and re-disclosed prior to appraisal.

The ESIA and RAP activities will identify and assess the impacts of the Project on vulnerable households and provide mitigation measures to offset disproportionate project impacts and facilitate their participation in project-related jobs and opportunities. Given the expected project impacts on IPs and their cultural heritage, FPIC process has been conducted through meaningful consultations and good faith negotiations, in line with the World Bank's Environmental and Social Framework (ESF) requirements. Consultation between UAHEL and IPs is underway and will, among other things, inform the further preparation and finalization of the IPP, which will include benefits in excess of regular compensation, which is governed by the ESIA/RAP. Measures include interventions to support local livelihoods and economic development, local infrastructure, and other community benefits. Specific guidelines for benefit sharing will be prepared prior to Project implementation, including capacity building, local employment, skills training, and business opportunities for locals, etc.

The contractor(s) for the Project will be required to prepare and submit a contractor ESMP, which will include a health and safety plan, a traffic management plan, an influx management plan, a labor camp management plan, a waste management plan, a borrow area management plan, etc., prior to commencement of work. These plans will be reviewed and cleared by UAHEL and a "No Objection" provided by the World Bank to ensure compliance with Bank E&S standards.

Dam safety has been assessed by the Project and will be reflected in the project design. This includes the preparation and implementation of the construction supervision and quality assurance plan (CSQAP), instrumentation plan (IP), operation and maintenance plan (O&MP), and emergency preparedness plan (EPP).



An independent ESPOE and DSPOE have been recruited by the NEA, the implementing entity’s mother company, to advise the Project on E&S aspects and dam safety and technical issues, respectively, during project preparation and implementation.

The Project will also include a component on E&S risk management to finance and implement the various risk management plans; E&S staffing, capacity building, and strengthening of the NEA and UAHEL; and the community benefit plan, among other things.

**Areas where “Use of Borrower Framework” is being considered:**

The use of Borrower’s Framework is not considered for this project. The World Bank ESF will be applied.

**ESS10 Stakeholder Engagement and Information Disclosure**

The ESS10 standard is relevant to the Project. Hydropower projects generate interests, benefits, and concerns among multiple stakeholders. In the context of Nepal, power sector projects, especially transmission lines, often come under community scrutiny, due to their impact on land values and land-use patterns. Accordingly, consultation with relevant stakeholders is critical for the sustainable design, construction and operation of the Project. The Project will involve a wide range of stakeholders at international, regional, national, provincial, and local levels, including civil society and elected and non-elected political leaders and groups in the area. The stakeholders also include individuals and groups affected, or likely to be affected, by the Project, as well as vulnerable and disadvantaged groups identified through the project’s environmental and social assessments and the World’s Bank’s due diligence. In line with the Bank’s ESS10, early engagement with these stakeholders has been undertaken, focused on disclosure and the uptake of concerns about the project concept, key components, environmental and social risks and impacts, and potential development returns such as opportunities for skills training, employment, and local infrastructure development. These consultations are guided by a draft SEP, which was prepared and disclosed on February 3, 2020, along with a GRM to receive and address project-related complaints and grievances from project-affected persons, groups and stakeholders. Prior to project appraisal, the SEP will be revised and re-disclosed, and the project GRM will integrate specific procedures to address SEA/SH related complaints and ensure service provision through a third party GBV service provider. The revised SEP will also update the program’s communication strategy and feedback mechanisms, which will facilitate the uptake and use of stakeholder concerns in a systematic manner.

**B.2. Specific Risks and Impacts**

**A brief description of the potential environmental and social risks and impacts relevant to the Project.**

**ESS2 Labor and Working Conditions**

This standard is relevant as the Project is expected to employ a large number of workers, especially during construction, and work will carry high risk. The preparation, construction, and operation of the hydropower dam will involve direct and contracted workers. The direct workers will include public servants working with the NEA and UAHEL, civil servants in government agencies with direct responsibilities for project operations, as well as specialized consultants who will be engaged by the NEA and UAHEL. The contracted workers will be engaged by the Project contractors, including for major infrastructure works, and service providers such as transport, catering, and waste management services. Experience in Nepal has shown that in addition to the mobilization of workers through the contractor(s), the in-migration of workers to project areas may occur when contractors begin to mobilize to the



project sites. Construction and other civil works will expose workers to occupational health and safety (OHS) risks and impacts including injury from the poor handling or misuse of tools and equipment, burns from hot asphalt during road construction, fatal traffic accidents, falls from heights, working in confined spaces such as tunnels and so forth. Community workers and primary supply workers are not likely to be engaged in project activities. This will be confirmed during project preparation. A worker's camp will be established; its construction, operation and closure will be done in accordance with the requirements of the ESF.

In line with the requirement of this standard, the UAHEL will prepare and disclose Labor Management Procedures (LMP) prior to project appraisal, which will contain details on the modalities for contracting, training, deploying, and disengaging workers; procedures for ensuring that all workers receive a clear contractual agreement with details as to their wage/remuneration rate and payment schedule/timeline; as well as provisions for prohibiting the use of child and forced labor in any project activity. The LMP will also include provisions/procedures for a labor-specific standalone GRM through which all project workers will be able to raise work-related grievances, including cases of SEA/SH. The LMP will include an assessment of potential labor related risks, including of GBV/sexual exploitation and abuse and a code of conduct.

Prior to the mobilization of workers and commencement of civil works and as part of their Health and Safety Management Plans (HSMPs), contractors will be required to conduct a health risk assessment to identify any health and safety risks and hazards and to develop and implement a critical control management (CCM) for the identified hazards to prevent a serious incident from occurring, and to minimize the consequences if a serious incident were to occur. To ensure the health and safety of workers during construction, contractors will be required to prepare, obtain approval, and implement an HSMP, which will include an occupational health and safety management plan (OHSMP) following the World Bank Group's Environmental, Health and Safety (EHS) Guidelines (for construction activities), GIIP, and relevant occupational health and safety (OHS) standards (e.g., ISO 45001, US OSHA, Australian or New Zealand standards). The OHSMP will also include procedures on job hazard analysis, competency based permit to work systems, incident investigation and reporting, recording and reporting of non-conformance, emergency preparedness and response procedures, and continuous worker training/awareness. The requirements for risk assessment, CCM, and the HSMP applied to the Project will be set out in the bidding documents and the ESCP. The OHSMP will include measures to address protection from COVID-19, as per WHO guidelines and relevant national legislation.

### **ESS3 Resource Efficiency and Pollution Prevention and Management**

The ESS3 standard is relevant to the Project. The diversion of the Arun River flow during the construction of the dam, and the diversion reach between the dam and the powerhouse during the operation stage, may adversely impact on the quality and quantity of water in the Arun River. The peaking operation mode could cause significant fluctuations to the downstream flows, especially during the months with the lowest flows in the river. Sudden changes in flow could impact on water use and aquatic habitats. Tunneling activities, including underground excavation work for the headrace tunnel and powerhouse, could lead to significant groundwater drawdown, which may in turn affect local springs and streams and impact on other groundwater-surface water interactions. The ESIA (in draft), including the EFlow assessment, has assessed the potential impacts related to water demands, quality, quantity, and flow, covering





both surface water and groundwater, and developed appropriate measures in line with the mitigation hierarchy, e.g., water quality management plan.

Construction activities will generate large amounts of debris and muck from construction work, domestic waste from workers' camps, and hazardous waste from construction machinery, vehicles, and ancillary facilities. Other significant sources of pollution during construction include air emissions, fugitive dust, noise, and vibrations, wastewater and process water, and refuse slurry from tunnel discharge. These impacts will be managed through the contractor ESMPs, including a waste management plan, hazardous materials management plan, and borrow area management plan, in line with the World Bank Group's EHS Guidelines and GIIP.

The Project will also generate greenhouse gas (GHG) during construction and operation. The GHG Reservoir (G-Res) tool, which was developed by the International Hydropower Association, is being used to estimate the GHG emissions of the reservoir and to propose any required mitigation measures and reporting requirements to be established. To the extent that the power generated by the Project offsets the power generated by another source, the Project would result in a net reduction in GHG emissions.

The Project will incorporate resource efficiency measures as part of its design and operation. For example, the operation of the proposed worker camps will incorporate resource efficiency measures to ensure that all necessary services do not adversely impact on the supplies of local communities. Further resource efficiency measures are being assessed in the ESIA under preparation and as part of the project design, where feasible.

#### **ESS4 Community Health and Safety**

The ESS4 standard is relevant, as the Project will involve major civil works that could expose workers and communities to health and safety risks. The significant labor force could overwhelm local infrastructure, services, and natural resources; change the social organization of the remote villages in the project area; and increase the spread of communicable diseases such as COVID-19 and HIV/AIDS, as well as the risk of SEA/SH and human trafficking. The Project will manage these risks by adopting a LMP, an influx management plan, and an SEA/SH action plan, as well as through the contractor ESMPs. Local authorities and UAHEL may deploy the Nepal Police and private security to protect workers and safeguard communities against crime, and the Nepal Army will be deployed to manage explosives for tunnel construction. An increase in security personnel may contribute to social issues and impacts (e.g., use of excessive force, community disquiet, restriction of community movement, and opposition to the Project) and a security risk assessment (SRA) will be carried out to inform a security management plan (SMP). The contractor ESMPs will include a security personnel management plan that will contain detailed measures to mitigate the risks related to the use of security forces.

Increased traffic in the project area may also pose significant health and safety risks. The ESIA is assessing the community risks related to traffic safety. Constructors will be required to develop and implement a traffic management plan as part of their contractor environmental and social management plans (C-ESMPs) to address these risks.

The project area lies within a high seismic activity zone, with unstable slopes and glacier lakes within its catchment area, which will be affected by climate change. A comprehensive climate change risk assessment has been carried out



and a disaster risk management roadmap study, including an updated glacial hazard assessment, is being prepared. The recommendations of these studies will be reflected in the project design.

Water fluctuations during peaking hours of operation may pose risks to downstream communities and may impact on water uses, such as for cultural/religious activities, washing, and subsistence fishing.

Dam safety requirements, including for project design and operation, will be addressed with a risk management approach, as per the ESF Good Practice Note (GPN) on Dam Safety, given the unusually large flood-handling requirement due to the potential for GLOFs, the Project's location in a zone of high seismic activity, the complex engineering works involved (including a large underground powerhouse and treatment of dam foundation and abutments), and the peaking operations. The UAHEP feasibility study was reviewed by an independent DSPOE, which will remain involved during and the UAHEP preparation and construction phases. UAHEL will continue engaging competent professionals for the preparation of detailed design/bidding documents and construction supervision, as well as to prepare and implement the CSQAP, IP, O&MP), and EPP.

#### **ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement**

The ESS5 standard is relevant, as the Project involves major civil works, including the main dam reservoir, powerhouse, headrace and access road tunnels, transmission lines, access roads, and service areas as well as residential and administration buildings. The construction of these works requires significant acquisition of land with considerable physical and economic displacement, which will affect private properties, structures, and farms belonging largely to low-income, rural communities. A RAP, which will cover the impacts of land acquisition in the dam, powerhouse, access road, and ancillary facilities areas, is in an advanced stage of preparation. The RAP will cover resettlement and livelihood restoration in 29 small agrarian villages totaling about 1,400 households. Land acquisition is currently expected to impact on 335 households. Out of these, 22 households (or 6.5 percent) will be physically and economically displaced, and the remaining 313 households will experience economic displacement. The RAP will include provisions for cash compensation, replacement land, livelihood restoration and transitional hardship support programs for impacted households. The Project will provide timely compensation for loss of assets at full replacement cost, with no deduction for depreciation or salvageable materials, and will explore the opportunities for implementing in-kind land-for-land compensation, recognizing that livelihood activities in the area are typically land-based. Where relevant, the RAP will include data disaggregated by gender and vulnerable project affected persons (PAPs), and adopt specialized assistance measures to address issues relevant to female-headed and vulnerable households with the overall objective of improving their livelihoods in line with ESS5, including provisions for assisting project-affected vulnerable households with cash allowances and support for livelihood improvement.

The implementation of the RAP, especially of aspects related to livelihood restoration, will be coordinated with the implementation of the IPP, as well as other benefit-sharing opportunities for the non-indigenous people potentially affected by the Project. This will include demand-driven approaches to local economic development involving cooperation between local communities, local authorities, and the provincial government, to demonstrate the potential for the effective use of benefit-sharing to be derived from future revenue streams associated with the project.



A RAP for the displacement impacts of the transmission line will be prepared when feasibility and design for the transmission line is complete. The preparation of the RAP for the transmission line will be informed by a comprehensive census and inventory of PAPs and assets and will engage PAPs and other relevant stakeholders in meaningful consultations, including disclosing project impacts and benefits to stakeholders and allowing them opportunities to inform the resettlement planning process. This document will follow the same principles for preparation as the main RAP for the Project.

### **ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources**

The ESS6 standard is relevant to the Project. The Upper Arun River, along which the Project is located, forms the boundary of the MBNP buffer zone, which protects the MBNP core area. The MBNP is recognized as a nationally legally protected area, with the buffer zone classified by the International Union for Conservation of Nature (IUCN) as a management category IV reserve, which allows some settlement and sustainable use of resources. The MBNP is also recognized by Birdlife International as an Important Bird Area (IBA) and qualifies as an internationally recognized area of biodiversity importance.

Potential significant risks and impacts relevant to ESS6 include:

1. Impacts on the MBNP (buffer zone and core areas), primarily due to construction activities, risk of increased poaching, and increased demand for resources by the expected large influx of construction workers.
2. Loss of terrestrial and riparian habitats due to project construction activities (including the development of an access road) outside of the MBNP.
3. Loss and displacement of fauna due to vehicle collisions, the construction of camps, waste rock disposal, and other project activities.
4. Effects on critical habitat species including the red panda, Himalayan black bear, Chinese pangolin, black musk deer and mouse-eared myotis (bat).
5. Loss and degradation of aquatic habitat on the Upper Arun River due to diverted flow, hydropeaking effects below the powerhouse, barriers to fish movement caused by the dam of UAHEP, and reduced access to spawning grounds, particularly in tributary streams, caused by flow diversion
6. Cumulative impacts on aquatic biodiversity from multiple hydropower investments in the Arun River and associated tributaries.

A critical habitat assessment is currently being undertaken by ERM, who was commissioned by the NEA to assess project risks and impacts and develop mitigation measures and plans following the mitigation hierarchy. The NEA has also commissioned the Red Panda Network to conduct an additional baseline study of critical habitat mammals and to develop a Biodiversity Action Plan (BAP) for these mammalian species; and the Hydro Lab to conduct supplemental aquatic studies. A BMP is being prepared to address project impacts and a BAP is being developed to address additional biodiversity offset measures to achieve no net loss and net gain requirements triggered by impacts to natural habitats, critical habitats, and protected areas.

A high resolution Environmental Flow (EFlow) assessment will be conducted to determine in more detail an EFlow regime in the dewatered reach and downstream of the tailrace that is sufficient to sustain aquatic habitats, migratory pathways for common snow trout, and existing social uses such a ceremonial use of the downstream Arun River. The



EFlow study will also include an in depth impact assessment of hydropeaking on aquatic biodiversity and downstream communities.

### **ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities**

The ESS7 standard is relevant to the Project. Nepal is an ethnically complex and diverse country with numerous indigenous and linguistic communities. There were 126 ethnic groups reported in the 2011 Census and 59 ethnic groups are officially listed as indigenous people or indigenous nationalities by the National Foundation for Development of Indigenous Nationalities (NFDIN) Act, 2002. Between 36 to 50 percent of Nepal's population is estimated to be part of an indigenous community. Indigenous peoples (IPs) present at the dam site include Bhotes, Rais, Gurungs, Tamangs, Newars, and Sherpas, representing about 95 percent of the PAPs in the project area, and these people are likely to be directly affected by project activities. These groups are recognized by the Government of Nepal as indigenous nationalities and have cultural and sociopolitical characteristics that are aligned with the description of IPs in paragraph 8 of ESS7. Land acquisition for the Project will lead to the physical relocation of some IP households, the movement of some temples and shrines, and restrict or require controlled access to ritual sites. In addition, the Project is also expected to cause temporary and permanent restriction of the use of private as well as public land and restrict access to common property and ecosystem services. The involuntary resettlement of IPs may disturb the traditional practices of communities, including the celebration of rituals and festivals, and could break traditional social networks and support systems. The influx of workers, particularly during the construction phase, may also adversely impact on cultural norms and practices.

In line with the requirements of this standard, the Project has commissioned an FPIC process through early and continuous engagement, meaningful consultations, and good faith negotiations with the indigenous communities in the project area. This process is being facilitated by NEFIN, the autonomous representative umbrella organization of the 59 groups of indigenous peoples officially recognized by the Government of Nepal. It involves consultations with the Adivasi Janajati Traditional Council (AJAC), which was set up to represent the indigenous groups among PAPs. The members of the AJAC represent 22 villages and have been self-selected by their respective communities. The Council includes more than 150 members from the 6 indigenous nationalities referred to above. Each of the impacted villages is represented on the AJAC and has control over deliberations at the working group level. Since October 2020, two rounds of FPIC consultations with all villages of project-affected indigenous peoples have been held. Through these rounds of consultation, UAHEL has provided relevant information about the components of UAHEP, expected location of key installations, expected project impacts and mitigation measures, as well as the benefits that may accrue from the Project.

The FPIC process is expected to secure the consent and collective support of IPs for the Project, along with an IPP, which will be implemented together with the ESMPs, RAP, and other local community development initiatives. The IPP has been developed based on the social assessment for the ESIA and RAP preparation, and will provide for targeted interventions that will enhance project benefits for indigenous communities that go beyond compensation.

### **ESS8 Cultural Heritage**

The ESS8 standard is relevant, as the Project is likely to impact on both tangible and intangible cultural heritage resources, including festivals and religious traditions, traditional songs and dances, local crafts, and carpet making.



There may also be possible impacts on burial grounds, as there is no designated area for burial grounds and each community has its own area. The ESIA that is under preparation will investigate the presence of, and assess project impacts on, cultural heritage sites.

The Arun River is considered holy by several religions and the oral traditions (mythology) of prominent ethnic groups describe its spiritual significance. Several ethnic groups use the Arun and Barun rivers for cremation rituals. The EFlow required by the fish connectivity study will be sufficient to support traditional cremation ceremonies. A supplemental high resolution EFlow assessment will be carried out by the UAHEL to further refine/confirm the EFlow required for the Project.

The Project aims to mitigate the identified impacts by preparing and implementing a cultural heritage management plan, which will provide procedures and funding for the relocation of tangible heritage sites in consent and coordination with local community leaders. Similarly, the Project is preparing, as part of the cultural heritage management plan, a chance finds procedure, to be included in contractor ESMPs, to guide the procedures to be followed in the event that an unknown cultural heritage site is uncovered. The Project will also provide cultural sensitivity training for all construction workers, implement a workers' code of conduct, and provide support to document and preserve intangible cultural heritage.

**ESS9 Financial Intermediaries**

This standard is not relevant to the Project. The Project involves no financial intermediary.

**B.3 Other Relevant Project Risks**

More than 90% of the Project's watershed area is on Chinese territory. Future activities in China could have long-terms impacts on the operation and sustainability of the Project.

**C. Legal Operational Policies that Apply**

**OP 7.50 Projects on International Waterways** Yes

**OP 7.60 Projects in Disputed Areas** No

**III. WORLD BANK ENVIRONMENTAL AND SOCIAL DUE DILIGENCE**

**A. Is a common approach being considered?** Yes

**Financing Partners**

A common approach among financing entities will be considered. Such an approach will be discussed and agreed upon with financing partners as soon as they are identified and discussions on financing progress.

Public Disclosure



**B. Proposed Measures, Actions and Timing (Borrower’s commitments)**

**Actions to be completed prior to Bank Board Approval:**

1. Preparation and disclosure of ESIA/ESMP, CIA, RAP, SEP along with project GRM, LMP, SEA/SH Action Plan and ESCP.
2. Agreement with the NEA on the E&S staffing of Upper Arun Project and creation of an E&S Unit within UAHEL.
3. FPIC completed with consent statement signed by indigenous peoples’ representatives, covering the IPP.
4. BMP and draft BAP.
5. CSQAP (at appraisal), IP (before bid tendering), preliminary O&MP (at appraisal, final plan not less than six months before reservoir filling), and broad framework EPP (at appraisal, final EPP not less than one year before starting reservoir filling).

**Possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):**

1. Contractor ESMPs, including HSMPs, traffic management plans, influx management plans, waste management plans, borrow area management plans, security personnel management plans, cultural heritage management plans, etc.
2. Full E&S staffing of UAHEL as per the ESCP.
3. Final BAP.
4. Benefit sharing plan.
5. Implementation of all E&S plans.
6. Implementation of FPIC agreements.

**C. Timing**

**Tentative target date for preparing the Appraisal Stage ESRS**

11-Sept-2023

**IV. CONTACT POINTS**

**World Bank**

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**Borrower/Client/Recipient**

Borrower: Ministry of Finance

**Implementing Agency(ies)**

Public Disclosure



Implementing Agency: Upper Arun Hydroelectric Limited (UAHEL)

Implementing Agency: Upper Arun Hydroelectric Limited (UAHEL)

#### V. FOR MORE INFORMATION CONTACT

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#### VI. APPROVAL

Task Team Leader(s):	Fanny Kathinka Missfeldt-Ringius, Subodh Adhikari, Pravin Karki
Practice Manager (ENR/Social)	Robin Mearns Recommended on 17-Jan-2023 at 19:07:39 GMT-05:00
Safeguards Advisor ESSA	Pablo Cardinale (SAESSA) Cleared on 18-Jan-2023 at 15:18:6 GMT-05:00