



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)
Bhutan	SOUTH ASIA	P174327	
Project Name	Sustainable Hydropower Development Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing		12/9/2020
Borrower(s)	Implementing Agency(ies)		
Druk Green Power Corporation Limited, Department of Hydropower and Power Systems, Ministry of Economic Affairs, Royal Government of Bhutan	Druk Green Power Corporation Limited		

Proposed Development Objective

The Project Development Objective is to strengthen the capacity of the power sector agencies in Bhutan to plan and prepare regional hydropower and transmission line projects following international good practices.

Financing (in USD Million)	Amount
Total Project Cost	3.93

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]

The Project Development Objective is to strengthen the capacity of the power sector agencies in Bhutan to plan and prepare regional hydropower and transmission line projects following international good practices.



D. Environmental and Social Overview

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

Bhutan has considerable hydropower generation potential and sustainable hydropower development is a critical part of Bhutan's socioeconomic development strategy. In line with Bhutan Hydropower Guidelines issued in 2018 with support from the World Bank, the Royal Government of Bhutan (RGOB), through the Department of Hydropower and Power Systems (DHPS) of the Ministry of Economic Affairs (MoEA), requested World Bank assistance in the preparation of Dorjilung Hydropower Project (Dorjilung HPP) and institutional capacity building with relevant government agencies relating to the development and application of the renewed development framework for hydropower.

Dorjilung HPP is located in Mongar District about 450 km east of the capital Thimphu. It is on Kurichhu River, a major tributaries of Drangmechhu river basin, upstream of the existing Kurichhu Hydropower Plant, with 5.40 km of reservoir stretch in Lhuentse Dzongkhag. The population of these two Dzongkhags is approximately 17,642 and 44,298 respectively. Majority of the people in the project area are farmers, mostly small land holders with about 7 acres of dry land on average and about one acre of wet land. However, farming is not the largest source of income owing to less arable land and due to shortage of labor. Citrus fruits and vegetables, dairy and poultry products are increasingly becoming important sources of cash income.

The project pre-feasibility study was conducted by Norplan of Norway in 2011. In 2013, Druk Green Power Corporation Ltd. (DGPC) carried out detailed design studies and produced a Detailed Project Report (DPR), including required environmental and social plans.

This grant-supported Sustainable Hydropower Development Project (SHDP) is to provide technical assistance (TA) to update and complete DPR for Dorjilung HPP to be consistent with the Bhutan Hydropower Guidelines, including environmental and social plans in line with World Bank Environmental and Social Framework (ESF) and to support capacity building in the power sector in Bhutan. The TA has two components:

Component 1. Preparation of Hydropower Plant and Transmission Line Projects. The component will support the preparation of Dorjilung HPP (installed capacity proposed to be 1,125 MW in DPR) and associated transmission lines to be identified during preparation. It will fund (a) the preparation of Dorjilung HPP and associated transmission lines through updating the DPR including additional geotechnical investigations, preliminary engineering designs, an Environmental and Social Impact Assessment (ESIA) as well as other environmental and social studies and impact mitigation plans required under relevant government laws and ESF; (b) a dam safety project review panel (PRP) and an environmental and social risk management panel (ESP).

Component 2. Capacity Building for the Sustainable Development of Hydropower. The component will support capacity building of government agencies, primarily DHPS and DGPC for managing the RGOB's technical, policy and regulatory framework for hydropower development and management. It will fund studies, technical advice, computerized analytical tools and training for (a) technical and regulatory reviews for major elements of hydropower projects; (b) project management, including environmental and social risk management.

D. 2. Borrower's Institutional Capacity



The proposed Implementing Agency of the TA (SHDP) is the state-owned DGPC, which manages and operates Bhutan's hydropower assets and participates in new hydropower development. Its 1,705 employees oversee operations of 1,615 MW of hydropower and conduct other related water to wire business support services including hydropower project development. Total revenues in 2018 were about Nu. 11,681.98 or about US\$154.7 million. DGPC has a group of environmental and social experts who hold the responsibility overseeing the environmental and social aspects of their hydropower projects. They have been operating largely enforcing national policies, and have little experiences applying environmental and social policies of international organizations. As the main generation operation utility, DGPC aspires to be a world class hydropower company applying international good practices for sustainable hydropower development, including environmental and social aspects. This TA is designed to support the capacity building within DGPC and other relevant government agencies, including management of environmental and social issues in hydropower development. The TA (SHDP) will be overseen by DHPS under MoEA which will also be a beneficiary and participant in the institutional and human capacity building activities of the project.

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

A. Environmental and Social Risk Classification (ESRC)

High

Environmental Risk Rating

High

The TA, under Component 1, will involve the preparation of a 1125 MW run-of-river hydropower on the Kurichhu River located in the Kuri-Gongri Basin in Bhutan and the associated transmission line. The power generated at Dorjilung HPP at 13.8 kV will be stepped up to 400 kV and a transmission line with a length of about 40 km will be constructed to connect to the nearest 400 kV transmission network at the existing Yangbari substation – however, the exact transmission line has not yet been determined. From Yangbari substation, the power may be exported further to India via the existing Yangbri – Rangia/Rowta transmission line; however, the transmission to India will be identified after the evacuation line is determined. The ensuing Dorjilung HPP will involve significant civil works related to the construction of the dam (136.5 m high as per DPR), headrace tunnel (approximately 15 km), power house, access roads, tailrace tunnels and associated facilities and will entail permanent inundation of the reservoir area (gross storage of approximately 44 million m³). The backwater of the reservoir cuts through the biological corridor connecting the Phrumsengla National Park with Bumdeling Wildlife Sanctuary. A 16-km dewatered zone of the Kurichhu River will be created between the intake and the tailrace, and for which there is a need to maintain environmental flows. Large volume of muck is expected to be generated during construction, which will need to be disposed. According to the DPR, about 6,000 workers, mainly foreign workers, will be employed during the construction.

While this TA (SHDP) only supports the preparation of the Dorjilung HPP and institutional capacity building of government agencies, the environment risk considers the downstream risks and impacts of the ensuing Dorjilung HPP once it is constructed and implemented. As mentioned, Dorjilung HPP is expected to involve significant civil works which are expected to potentially have significant adverse and long term risks and impacts on the biophysical and cultural environment. Occupational and community health and safety risks and impacts are also expected to be adverse and significant considering the large number of foreign workers to be deployed at the site during construction. The works and inundation of the reservoir area are expected to have potential adverse risks and impacts on both terrestrial and aquatic ecosystems and biodiversity, including potential cumulative impacts and

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transboundary impacts. While the TA activities themselves will have limited environmental impacts, with all of these potential risks and impacts of the ensuing Dorjilung HPP, environment risk of the Project (i.e. TA/SHDP) is rated High.

Social Risk Rating

High

The Project (SHDP) provides TA in the detailed design of the project. The TA activities themselves would have little social impacts, but the downstream investment operation will trigger significant social impacts in its construction and operation. Therefore, the social risk of the Project (i.e. TA) is rated High.

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:

While this TA only involves support for institutional capacity building and to prepare the proposed Dorjilung HPP, if implemented, it would have a series of potentially adverse, significant and long term environmental and social risks and impacts due to the construction of the dam which will cause permanent inundation and creation of a reservoir, headrace tunnel, powerhouse and required transmission line and ancillary facilities such as access roads and workers camps. Social risks and impacts would include land acquisition, resettlement (DPR screening has identified physical relocation of only one household), labor influx, occupational and community health and safety, gender, gender based violence (GBV). Environmental risks and impacts will involve permanent inundation of the reservoir area and permanent changes in landscapes, impacts on terrestrial and aquatic ecosystems, ecosystem services and biodiversity; pollution during construction, vibration impacts from blasting and heavy equipment, changes in hydrology of the Kuricchu river, potential cumulative impacts, etc.

The ensuing project's potential E&S risks and impacts will be assessed with support from this TA, including an ESIA, Cumulative Impact Assessment (CIA), Resettlement Planning and other relevant instruments required under the World Bank's ESF.

These ESIA and RAP TORs serve as the E&S instruments for this High Risk TA project and will be reviewed and cleared by Environment and Social Practice Managers and the Regional Safeguard Adviser and disclosed prior to appraisal of the TA.

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

Borrower's framework will not be used.

ESS10 Stakeholder Engagement and Information Disclosure

The TA (SHDP) Project activities and the potential ensuing project (Dorjilung HPP) will involve a wide range of stakeholders at regional, national and local levels, from public, private sectors and local communities. It is expected that the stakeholders will have varying interest and influence in the decision-making, design, construction and operational phase of the ensuing project. The ensuing project would have varying impacts upon local stakeholders, particularly the impacted communities and the project workers. Proactive engagement and participation of the



stakeholders during this TA Project are critical in the successful design and implementation of the ensuing project. The TA project will develop a stakeholder engagement plan for the Dorjilung Hydropower project, summarizing consultations and stakeholder engagement during the planning phase and laying out the strategy and plan to continue stakeholder consultation during its implementation. A grievance redress mechanism will be designed for the project as part of the SEP.

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

The TA would involve its share of consultants considered as direct workers who will carry out the required project planning assignment. The contract for these consultants will stipulate safe working conditions and procedures to be in place and practiced during the preparation phase.

The downstream investment construction is expected to have a workforce of 6,000 at peak time, plus another 6,000 or so of other people migrating into the project area. This influx could have all labor related issues.

This TA will support the preparation of Labor Management Procedures for the downstream investment and Occupational Health and Safety Plan.

ESS3 Resource Efficiency and Pollution Prevention and Management

The potential ensuing project will involve significant civil works and will generate large volume of muck for disposal. It will also require large volume of resources and construction materials and will generate air and water pollutants during construction.

All risks and impacts relevant to this standard will be assessed in the ESIA and CIA and relevant measures and plans will be developed accordingly. GHG emissions analysis of the project is also included in the TORs for updating the ESIA.

ESS4 Community Health and Safety

The construction of the downstream investment will have health and safety implications for communities in the project area from the influx of workers and camp followers, increased vehicle traffic, vibration impacts and exacerbation of landslide hazard and prone areas. These impacts will be assessed and mitigated in the ESIA in line with the requirement of this standard.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The construction of the downstream investment will require land acquisition and limited relocation, thus making this policy relevant to the project.



ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

The potential ensuing project is expected to have risks and impacts on terrestrial and aquatic ecosystems and biodiversity resulting from civil works, inundation of the reservoir area and extraction of construction materials, among others. The 16-km dewater zone will have impacts on aquatic ecosystems and biodiversity while the dam will affect fish migration in the main river system. The reservoir of the ensuing project, when constructed, may also have risks and impacts on the biological corridor connecting the Phrumsengla Natural Park and the Bumdelig Wildlife Sanctuary.

The ESIA prepared by this TA Project will include a comprehensive biodiversity assessment, including natural habitat and critical habitat assessment. A preliminary Biodiversity Management Plan (BMP) will be prepared as part of the ESIA following the mitigation hierarchy to ensure that if the ensuing HPP project will significantly affect natural habitats and critical habitats that no net loss will be achieved for natural habitats and net gain will be achieved for critical habitats. If offset is required based on the assessment, the preliminary BMP will propose a framework or an approach for an offset, which will be studied, developed and fleshed out in greater detail during preparation of the ensuing HPP project, if and when Bank decides to support the said project.

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

Project preparation work carried out earlier indicates that there are different ethnic groups or groups speaking different dialects in the project areas. No assessment was conducted regarding the application of ESS7. The TA project will support further field surveys and analysis regarding indigenous people and application of ESS7 as part of the social assessment. The social assessment will review and recommend whether there are indigenous communities in the project area per the definition of ESS7 and whether ESS7 would be relevant to the project. If ESS7 is considered relevant, the TA project will carry out the planning work as required under ESS7.

ESS8 Cultural Heritage

The pre-feasibility and DPR carried out an assessment of possible cultural heritage impacts under the project. It indicated that there would be impacts on tangible cultural heritage, but missed intangible cultural heritage in its assessment. It also indicated that there could be some impacts on local cultural practices. These need to be further assessed and necessary mitigation planning carried out under the TA.

ESS9 Financial Intermediaries

Not relevant.

B.3 Other Relevant Project Risks

None.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways

Yes



Kurichhu River on which the proposed Dorjilung HPP is planned is a tributary of Drangmechhu River which flows into India. Thus this policy is triggered. LEGEN will be consulted on the course of action to be taken during the implementation of the TA for the notification of riparian states and LEGEN’s advise will be taken forward accordingly. In addition, the TOR of the ESIA, which will also be supported by this TA, will include examination of any potential riparian issues.

OP 7.60 Projects in Disputed Areas

No

III. WORLD BANK ENVIRONMENTAL AND SOCIAL DUE DILIGENCE

A. Is a common approach being considered?

No

Financing Partners

None

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

Actions to be completed prior to Bank Board Approval:

Actions to be completed during the implementation of this TA project (which will be reflected in the ESCP):

1. ToRs for ESIA and RAP reviewed and cleared by E&S PMs and RSA prior to appraisal of the TA and before commencing the procurement process for the consultancy services;
2. Implementing Agency has designated qualified Environmental and Social Specialists to oversee the implementation of E&S activities under this TA within 3 months from the signing of the Grant Agreement;
3. Dam Safety Panel of Expert acceptable to the Bank has been established and operationalized within 4 months from the signing of the Grant Agreement;
4. Environment and Social Panel of Expert to advise GoB on E&S risk assessment and management acceptable to the Bank has been established and operationalized within 4 months from the signing of the Grant Agreement;
5. Stakeholders engaged and consulted on an ongoing basis during the implementation of this TA and during the E&S risk assessment and planning processes;
6. Stakeholder Engagement Plan developed in a participatory manner.

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

Same actions, as above, to be completed during the implementation of this TA project, which will be reflected in the ESCP.

IV. CONTACT POINTS

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Borrower/Client/Recipient

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Borrower: Department of Hydropower and Power Systems, Ministry of Economic Affairs, Royal Government of Bhutan

Implementing Agency(ies)

Implementing Agency: Druk Green Power Corporation Limited

V. FOR MORE INFORMATION CONTACT

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VI. APPROVAL

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Practice Manager (ENR/Social) Robin Mearns Recommended on 23-Sep-2020 at 13:12:50 GMT-04:00